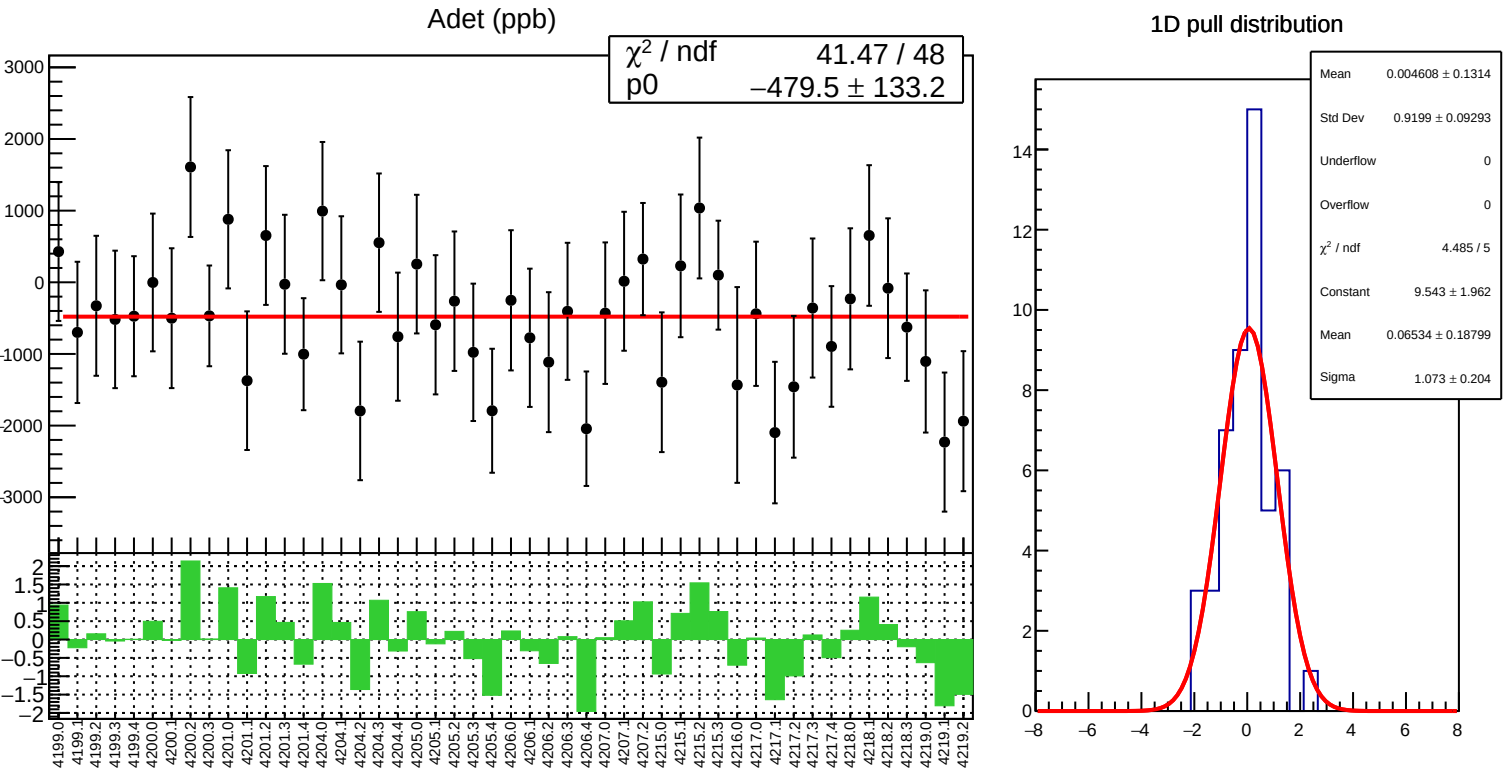
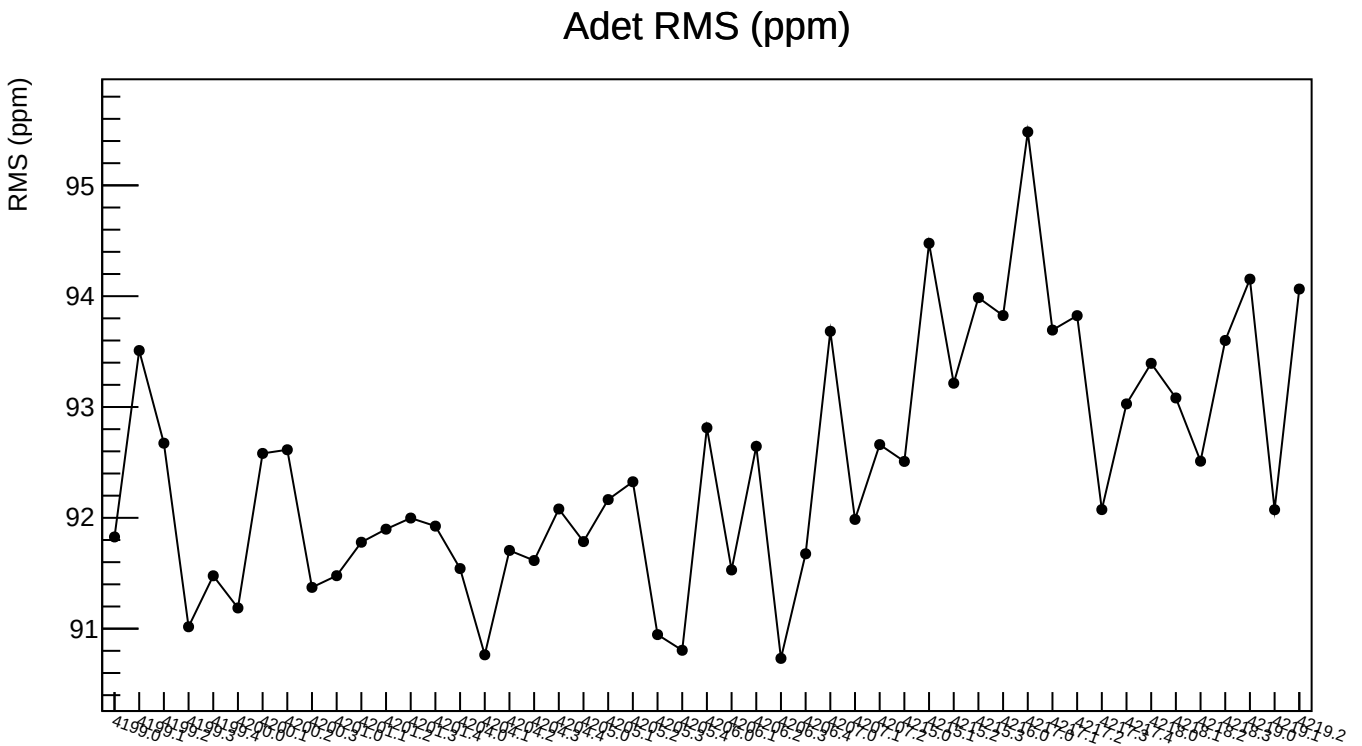
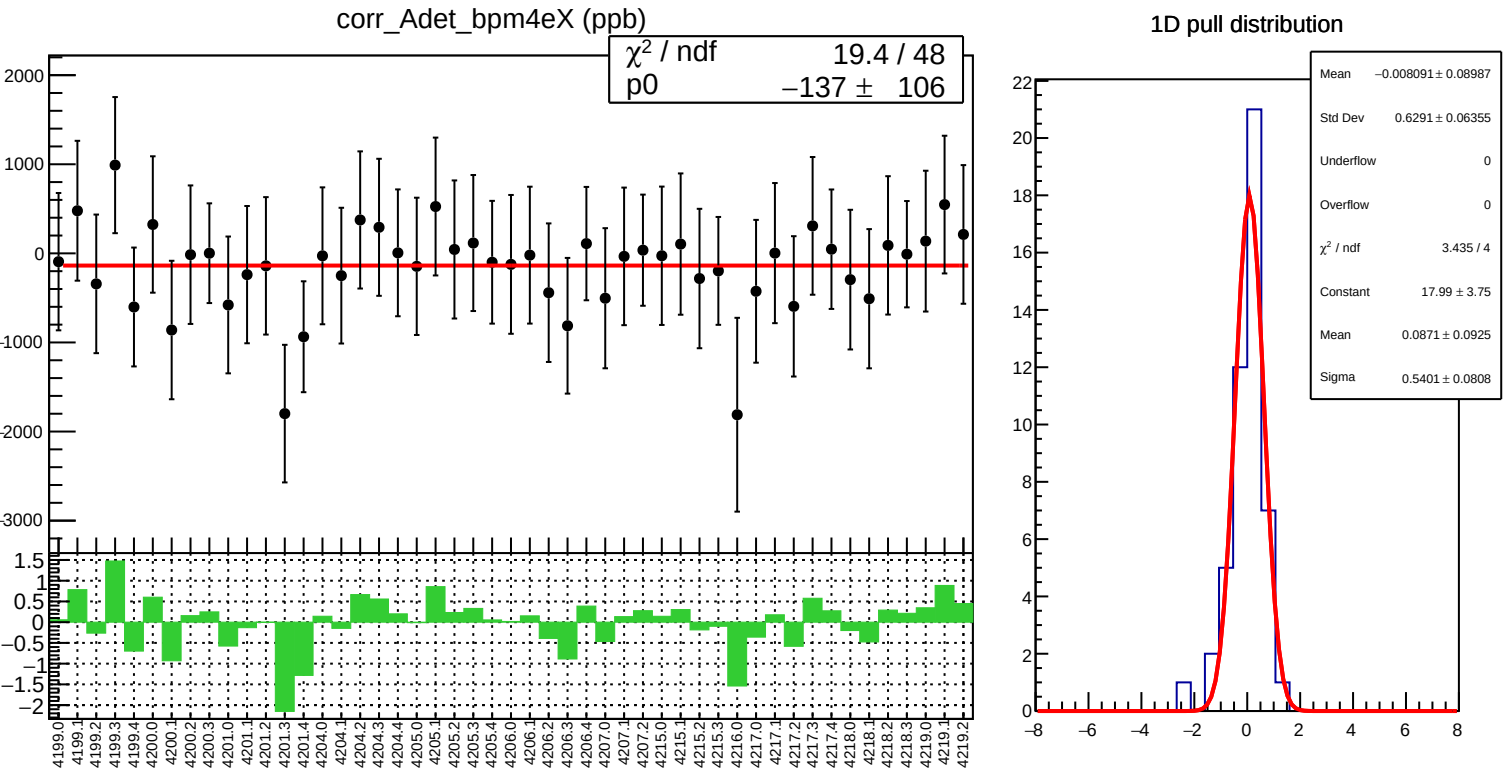
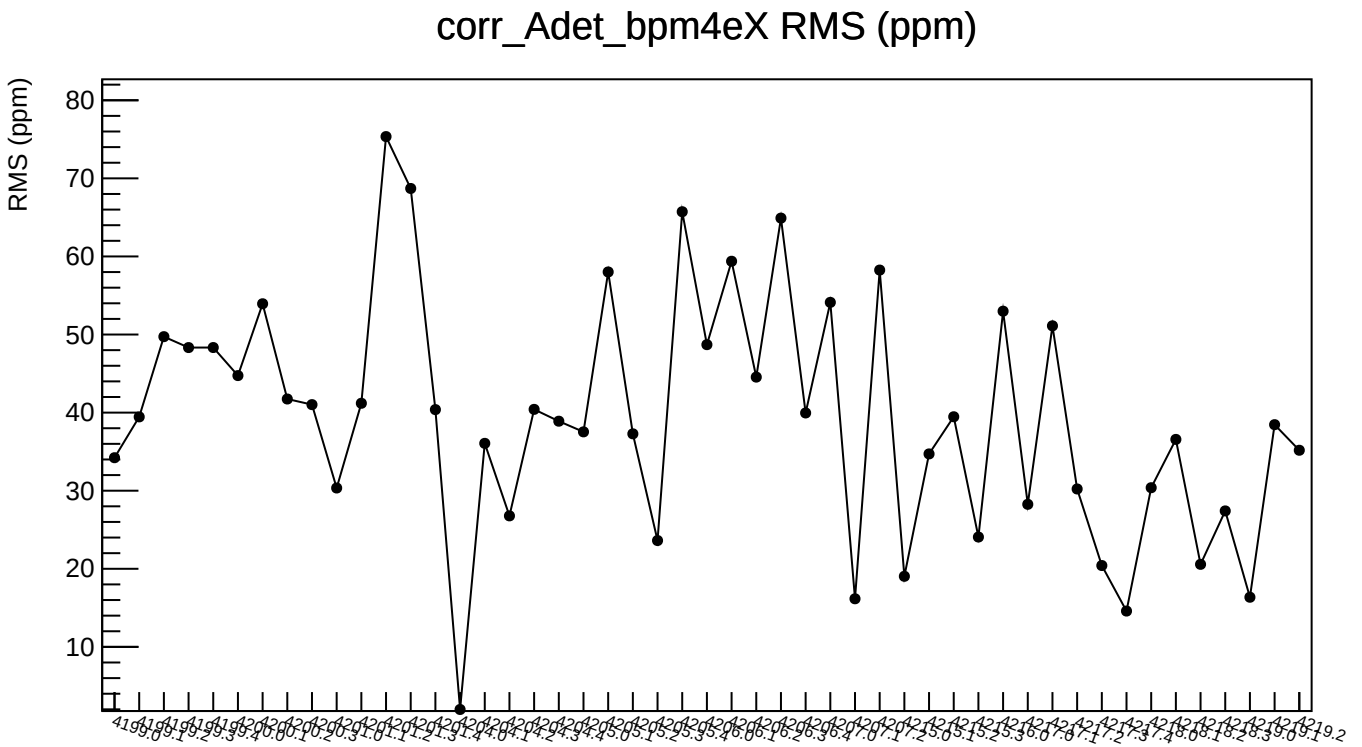
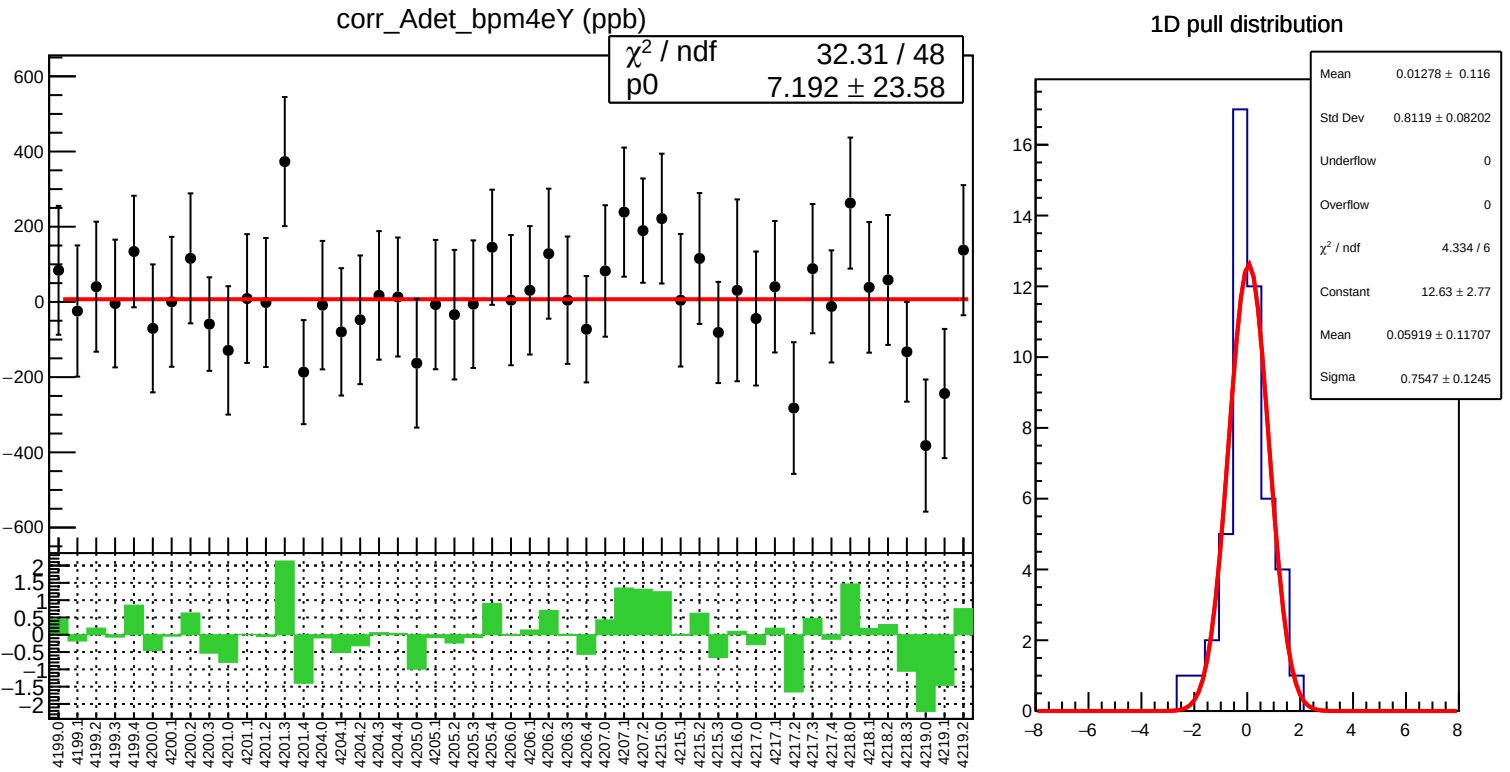
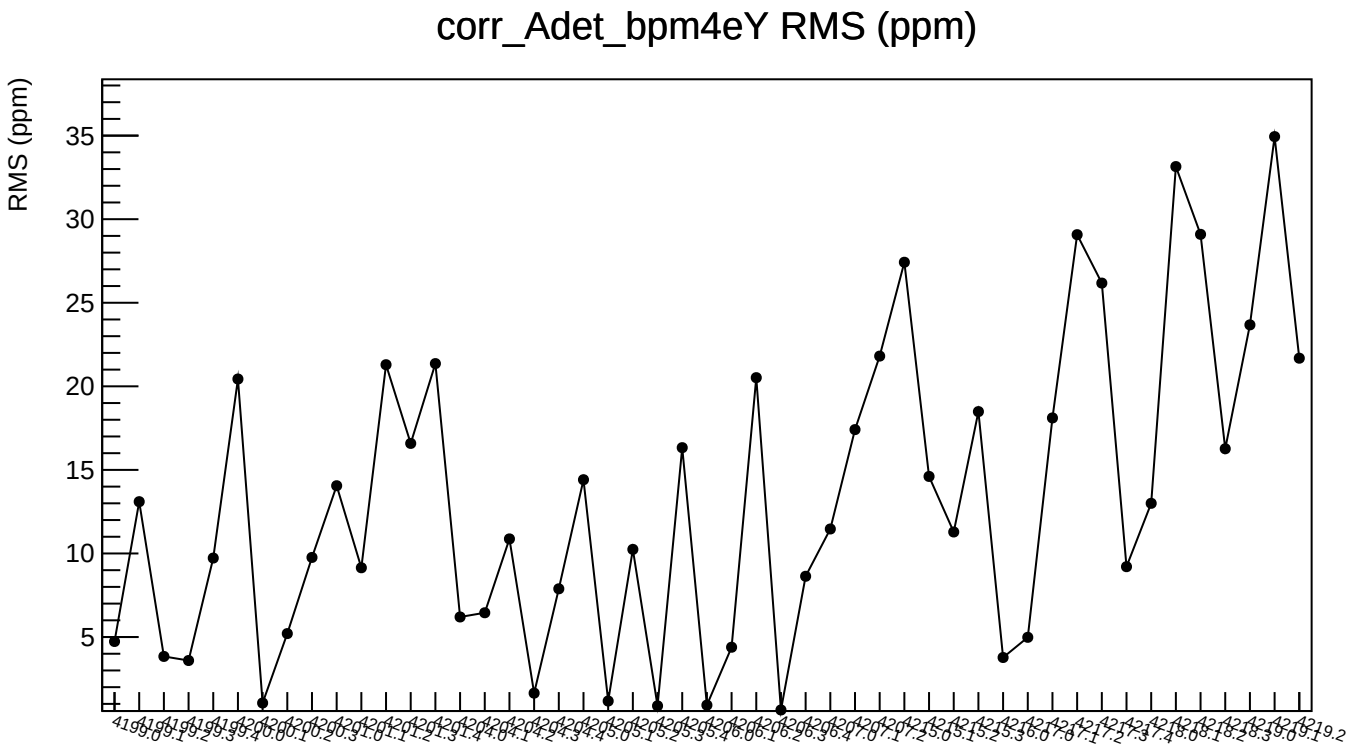

Adet (ppb)
χ² / ndf 41.47 / 48
p0 −479.5 ± 133.2
1D pull distribution
Mean 0.004608 ± 0.1314
Std Dev 0.9199 ± 0.09293
Underflow 0
Overflow 0
χ² / ndf 4.485 / 5
Constant 9.543 ± 1.962
Mean 0.06534 ± 0.18799
Sigma 1.073 ± 0.204

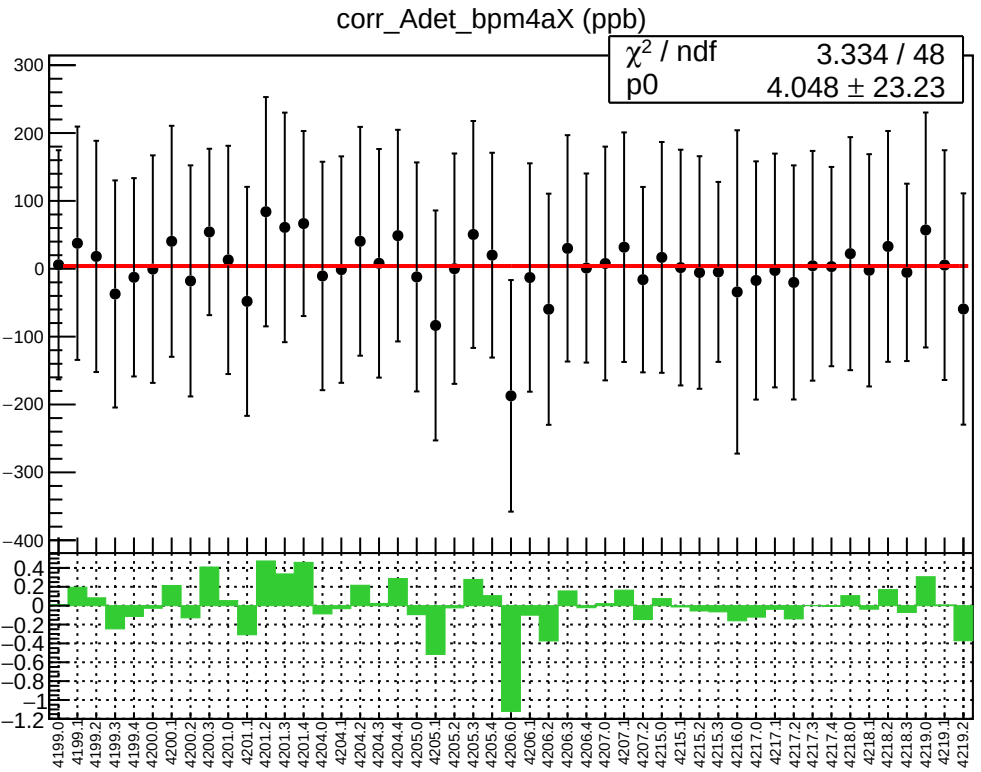

Adet RMS (ppm)
RMS (ppm)
95
94
93
92
91

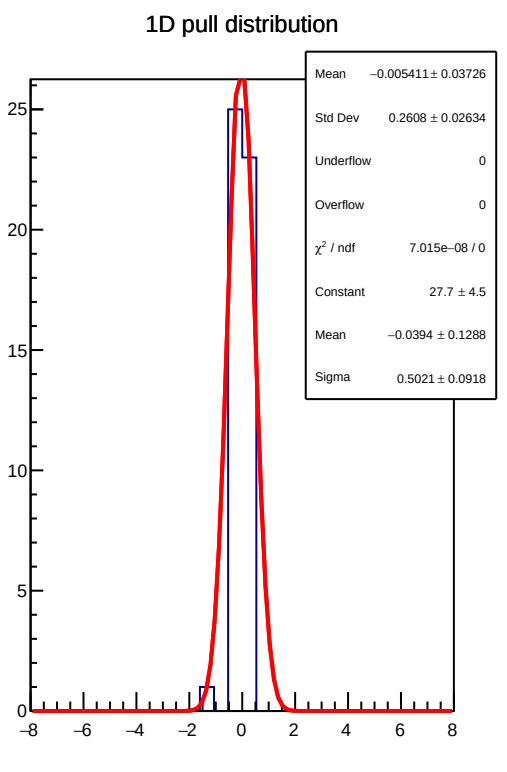

corr_Adet_bpm4eX (ppb)
χ² / ndf 19.4 / 48
p0 −137 ± 106
1D pull distribution
Mean −0.008091 ± 0.08987
Std Dev 0.6291 ± 0.06355
Underflow 0
Overflow 0
χ² / ndf 3.435 / 4
Constant 17.99 ± 3.75
Mean 0.0871 ± 0.0925
Sigma 0.5401 ± 0.0808

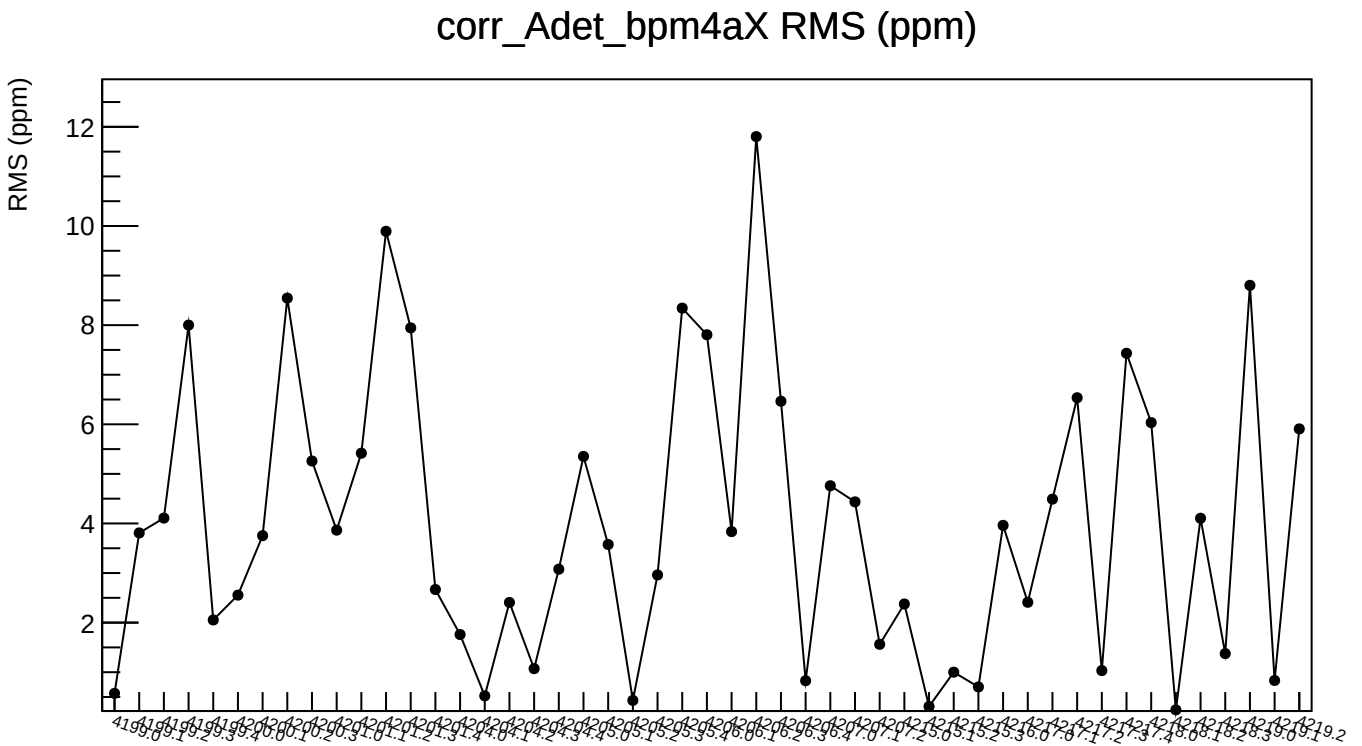

corr_Adet_bpm4eX RMS (ppm)
RMS (ppm)
80
70
60
50
40
30
20
10

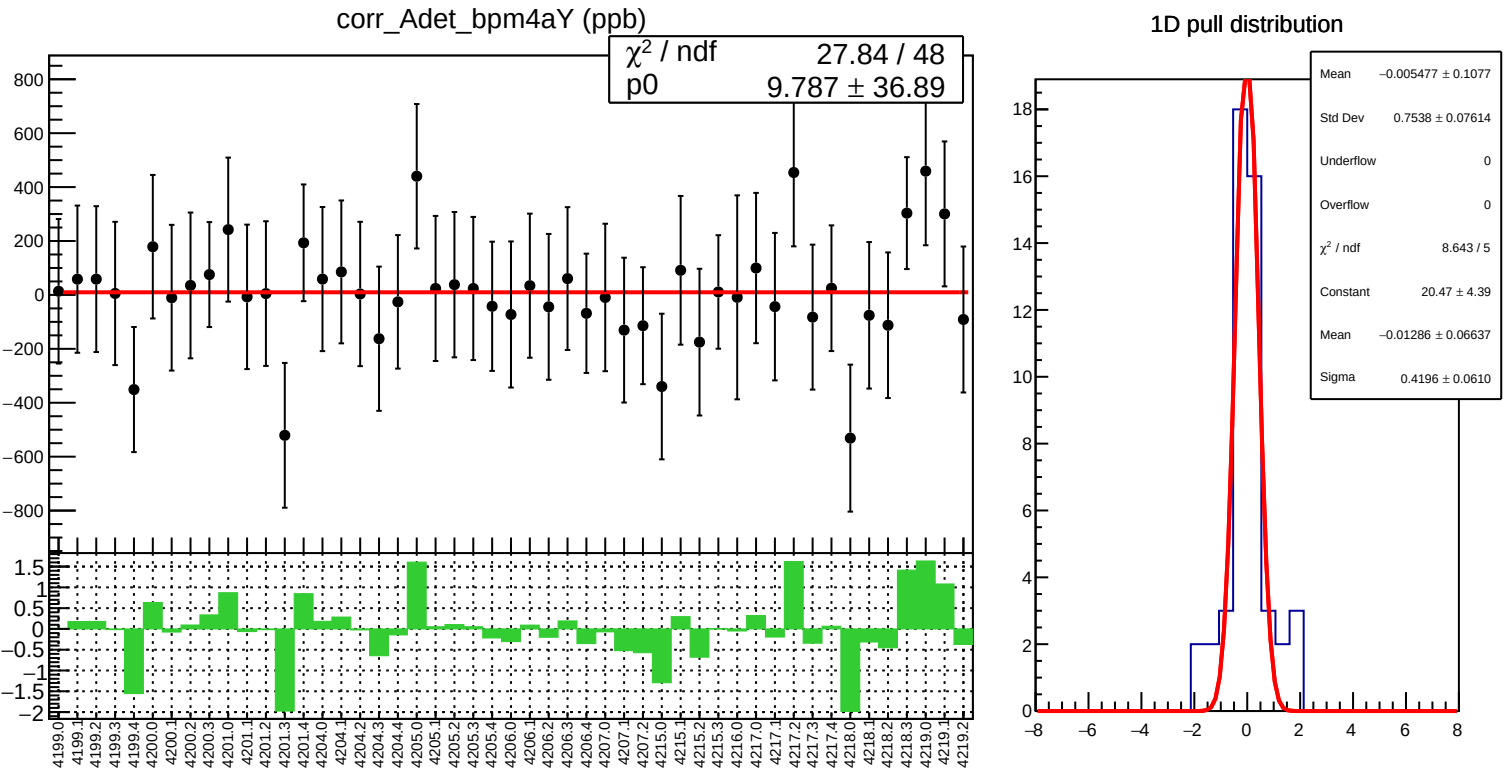

corr_Adet_bpm4eY (ppb)
χ² / ndf 32.31 / 48
p0 7.192 ± 23.58
1D pull distribution
Mean 0.01278 ± 0.116
Std Dev 0.8119 ± 0.08202
Underflow 0
Overflow 0
χ² / ndf 4.334 / 6
Constant 12.63 ± 2.77
Mean 0.05919 ± 0.11707
Sigma 0.7547 ± 0.1245

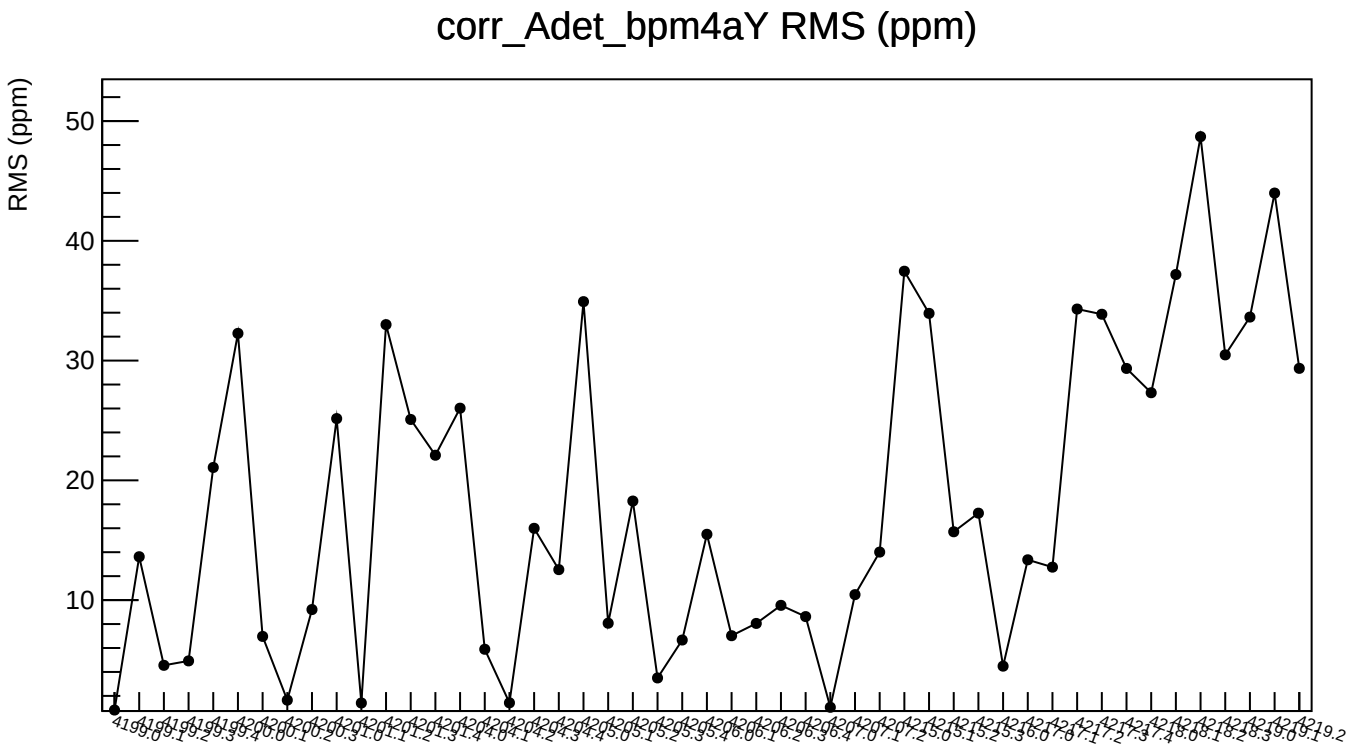

corr_Adet_bpm4eY RMS (ppm)
RMS (ppm)
35
30
25
20
15
10
5

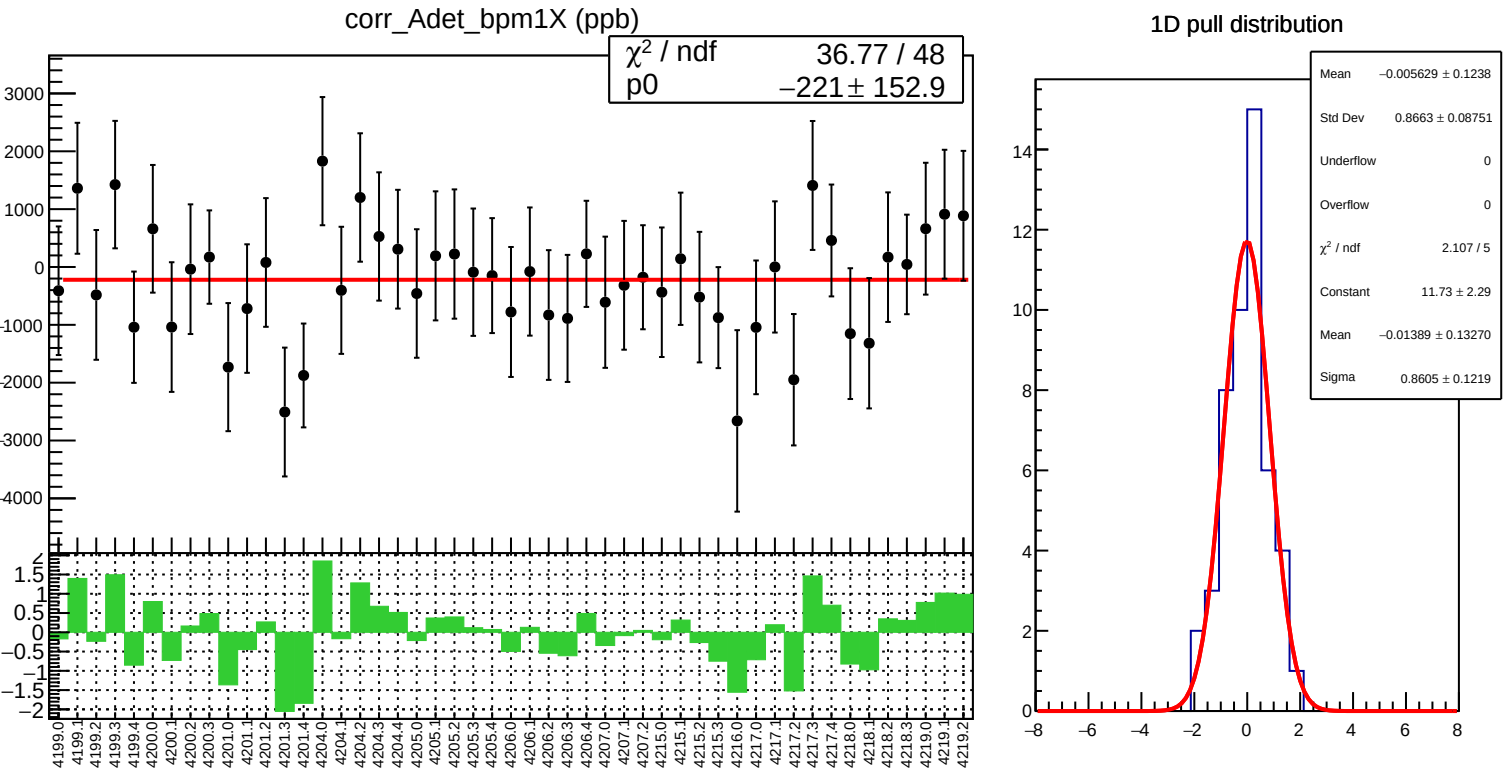

corr_Adet_bpm4aX (ppb)
χ² / ndf 3.334 / 48
p0 4.048 ± 23.23

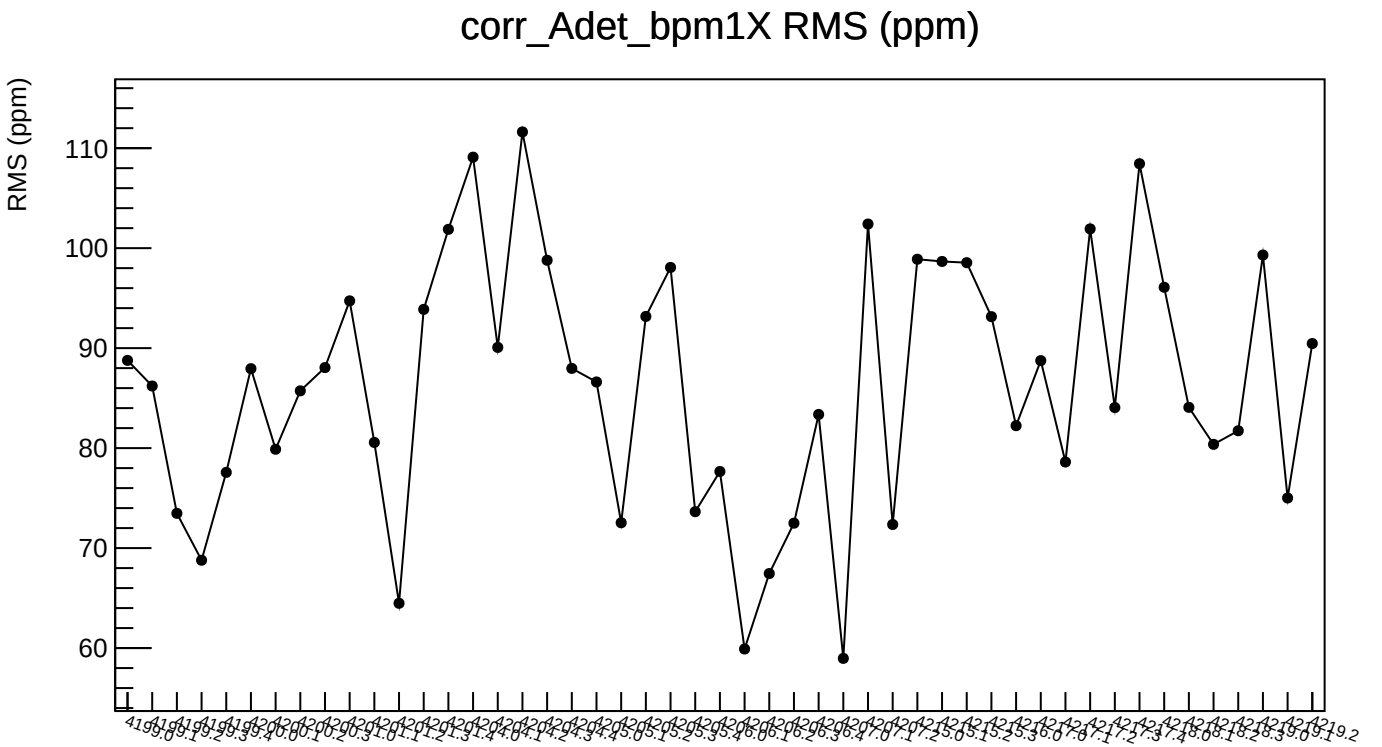

1D pull distribution
Mean −0.005411 ± 0.03726
Std Dev 0.2608 ± 0.02634
Underflow 0
Overflow 0
χ² / ndf 7.015e−08 / 0
Constant 27.7 ± 4.5
Mean −0.0394 ± 0.1288
Sigma 0.5021 ± 0.0918

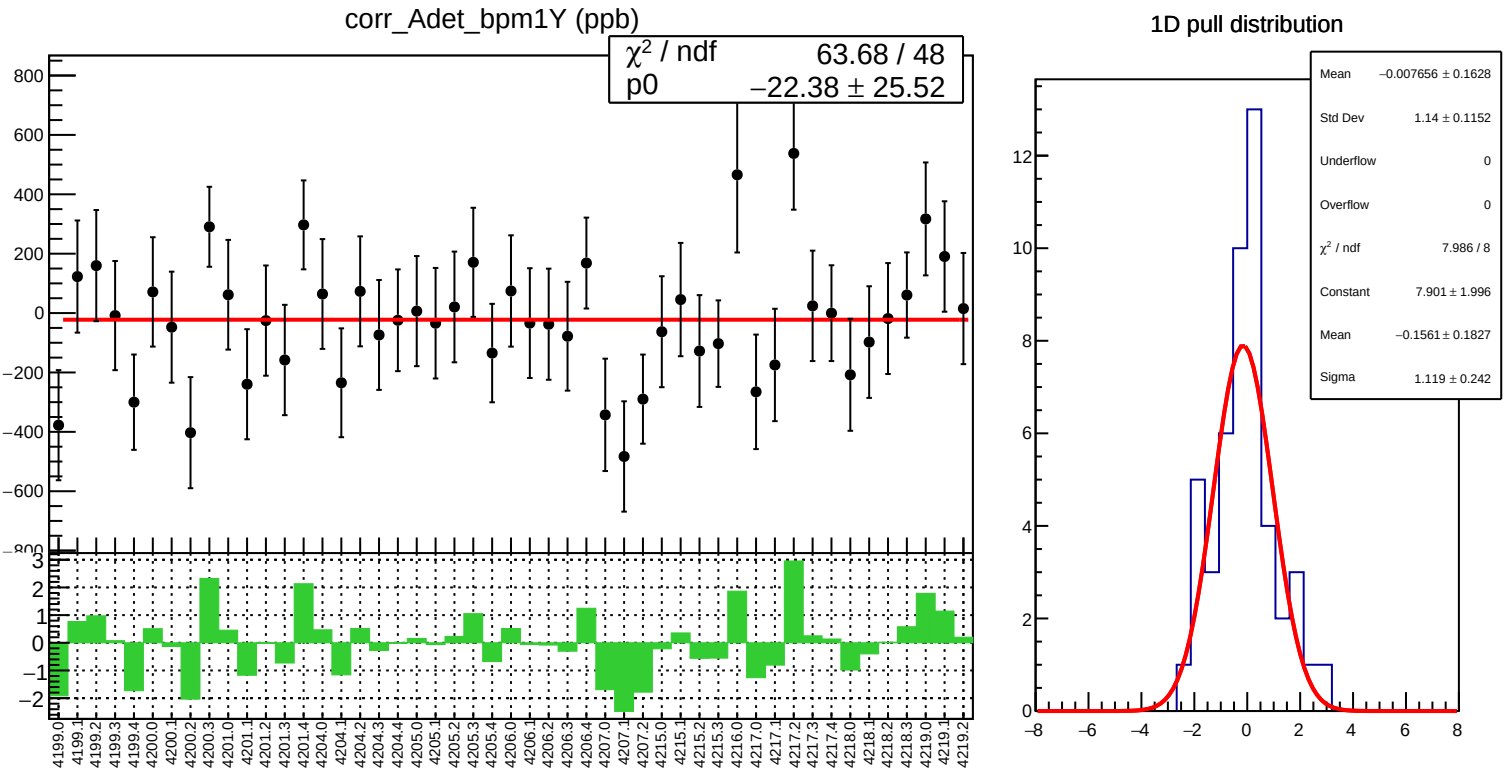

corr_Adet_bpm4aX RMS (ppm)
RMS (ppm)
12
10
8
6
4
2

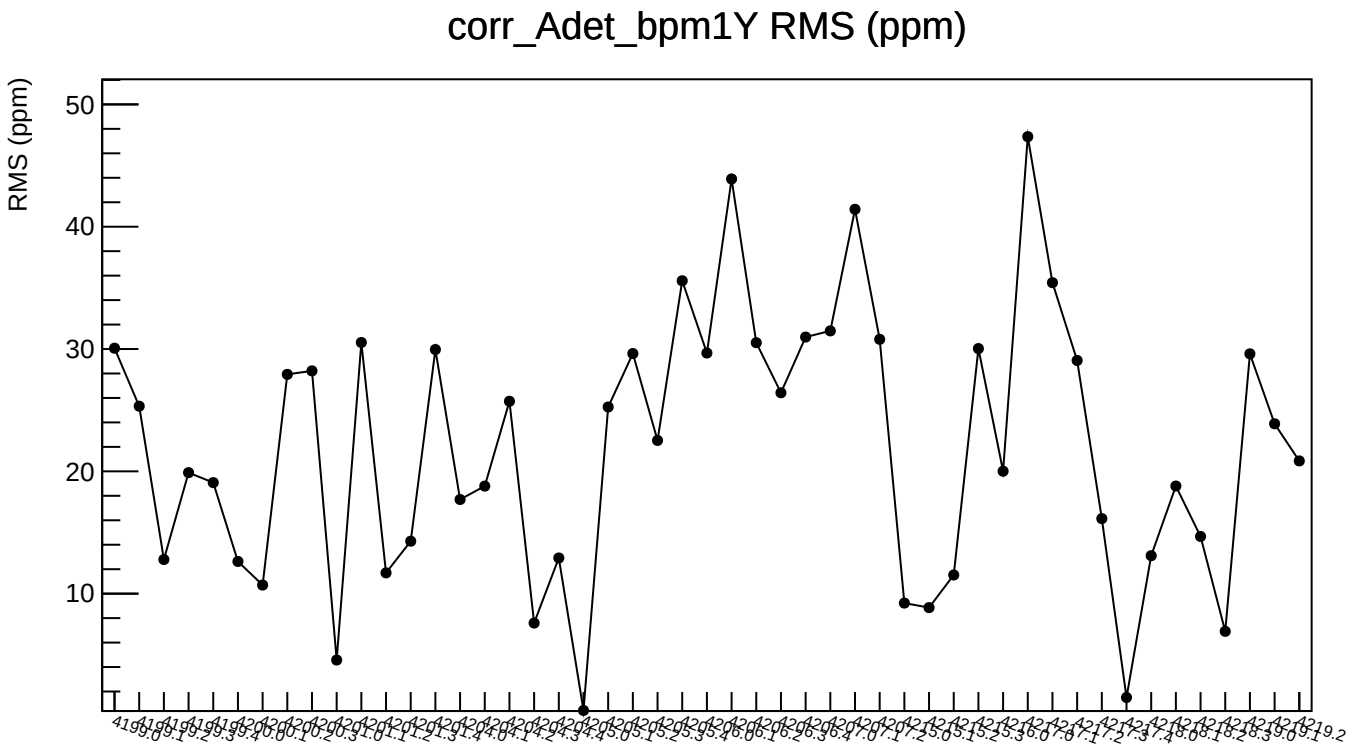

corr_Adet_bpm4aY (ppb)
χ² / ndf 27.84 / 48
p0 9.787 ± 36.89
1D pull distribution
Mean −0.005477 ± 0.1077
Std Dev 0.7538 ± 0.07614
Underflow 0
Overflow 0
χ² / ndf 8.643 / 5
Constant 20.47 ± 4.39
Mean −0.01286 ± 0.06637
Sigma 0.4196 ± 0.0610

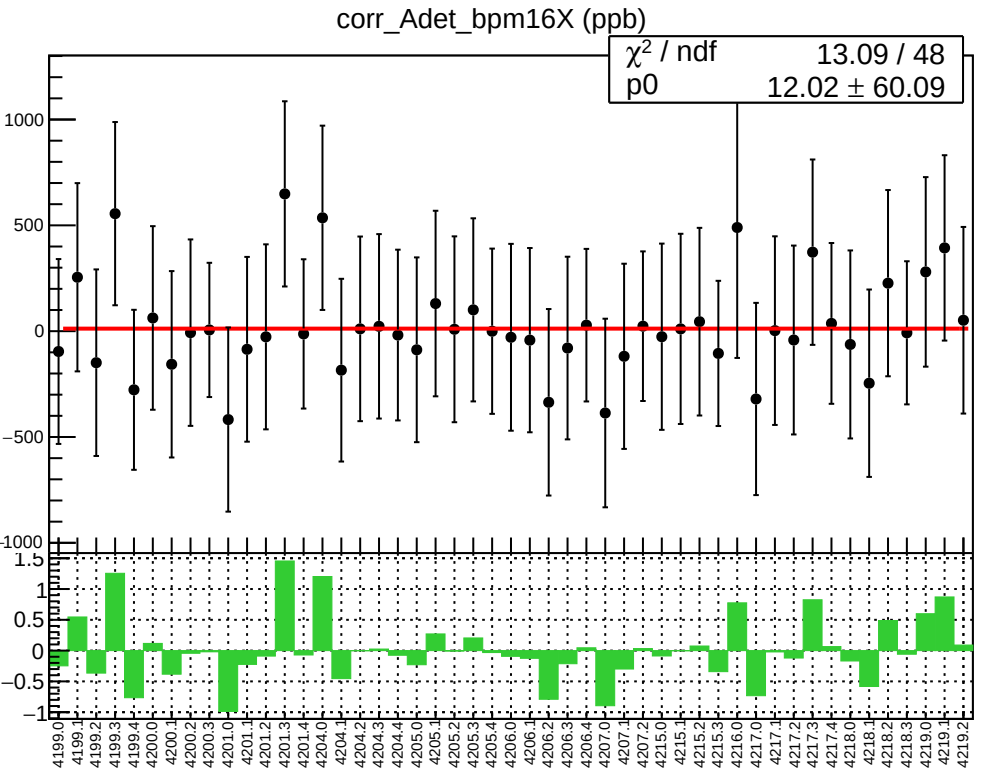

corr_Adet_bpm4aY RMS (ppm)
RMS (ppm)
50
40
30
20
10

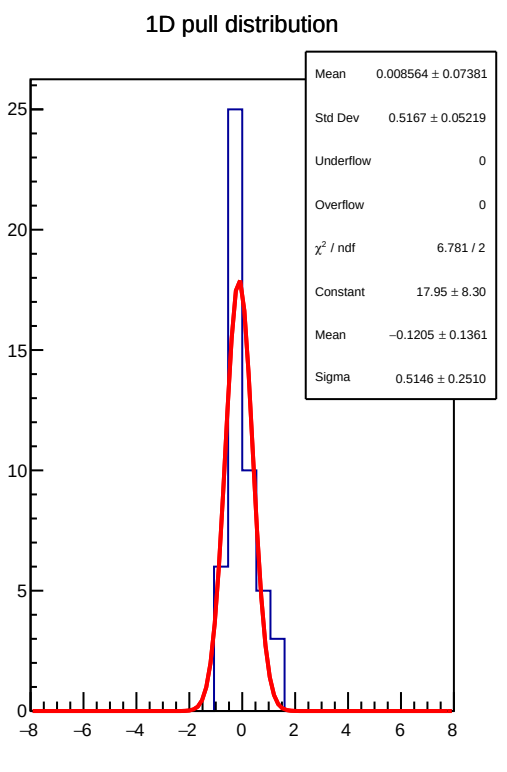

corr_Adet_bpm1X (ppb)
χ² / ndf 36.77 / 48
p0 −221 ± 152.9
1D pull distribution
Mean −0.005629 ± 0.1238
Std Dev 0.8663 ± 0.08751
Underflow 0
Overflow 0
χ² / ndf 2.107 / 5
Constant 11.73 ± 2.29
Mean −0.01389 ± 0.13270
Sigma 0.8605 ± 0.1219

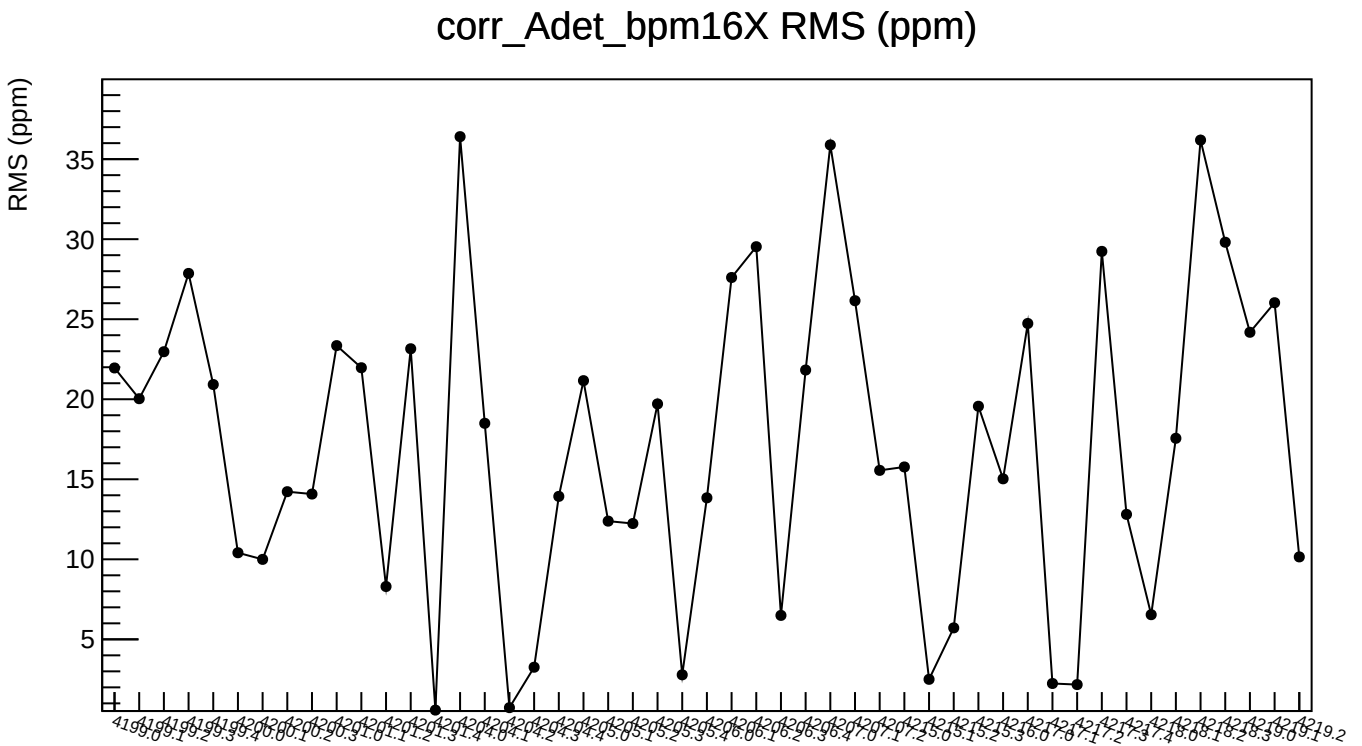

corr_Adet_bpm1X RMS (ppm)
RMS (ppm)
110
100
90
80
70
60

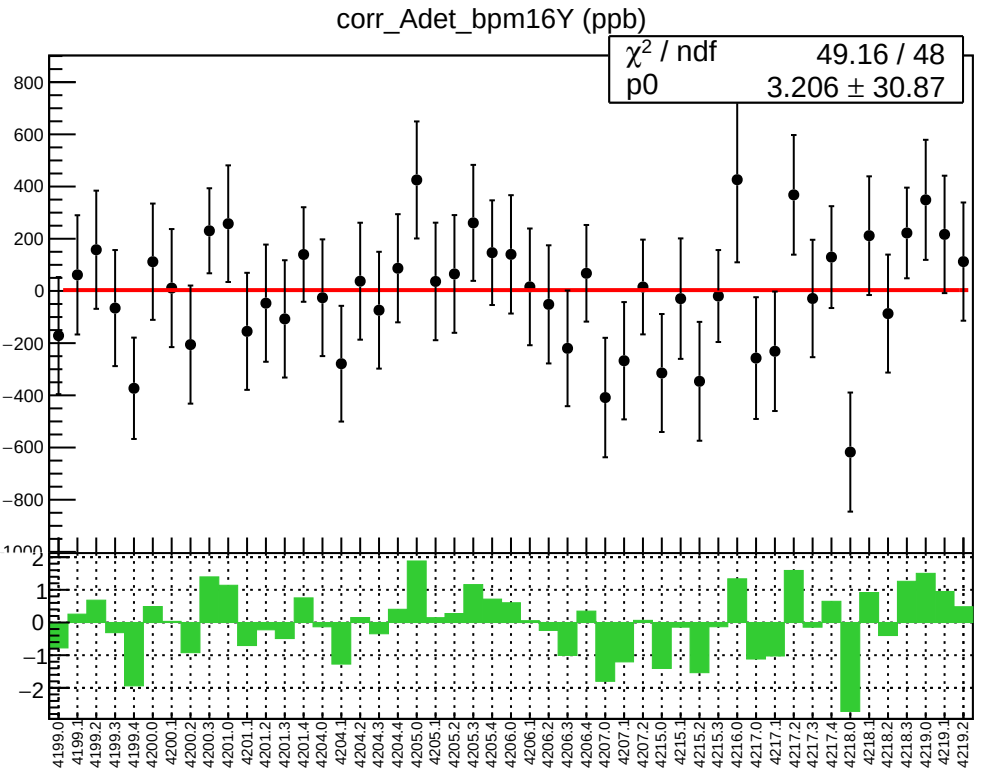

corr_Adet_bpm1Y (ppb)
χ² / ndf 63.68 / 48
p0 −22.38 ± 25.52
1D pull distribution
Mean −0.007656 ± 0.1628
Std Dev 1.14 ± 0.1152
Underflow 0
Overflow 0
χ² / ndf 7.986 / 8
Constant 7.901 ± 1.996
Mean −0.1561 ± 0.1827
Sigma 1.119 ± 0.242

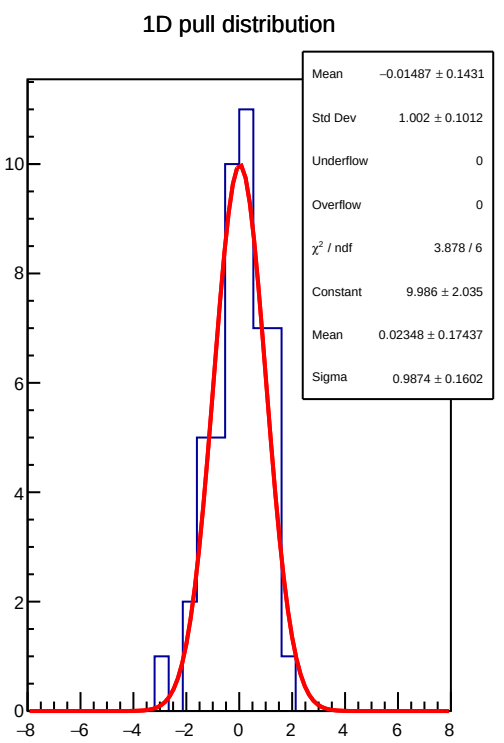

corr_Adet_bpm1Y RMS (ppm)
RMS (ppm)
50
40
30
20
10

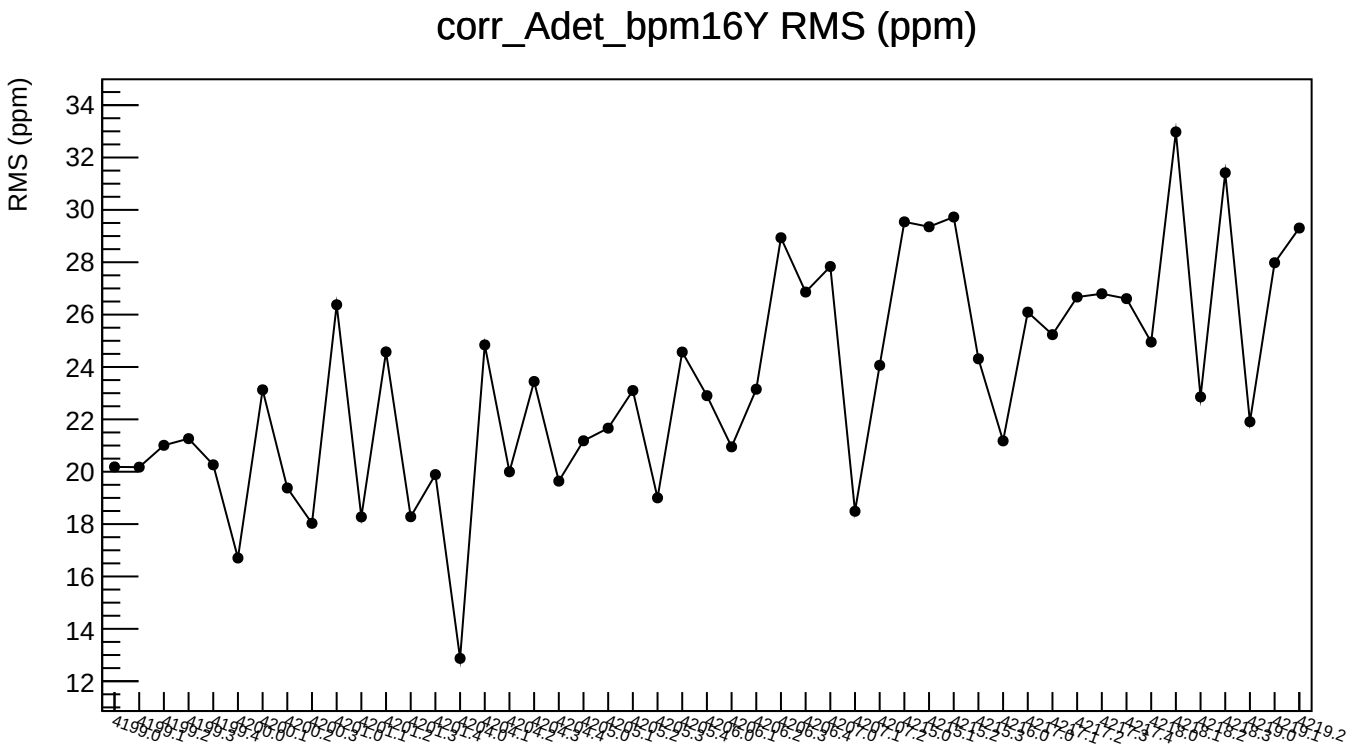

corr_Adet_bpm16X (ppb)
χ² / ndf 13.09 / 48
p0 12.02 ± 60.09
1000
500
0
−500
−1000
1.5
1
0.5
0
−0.5
−1
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

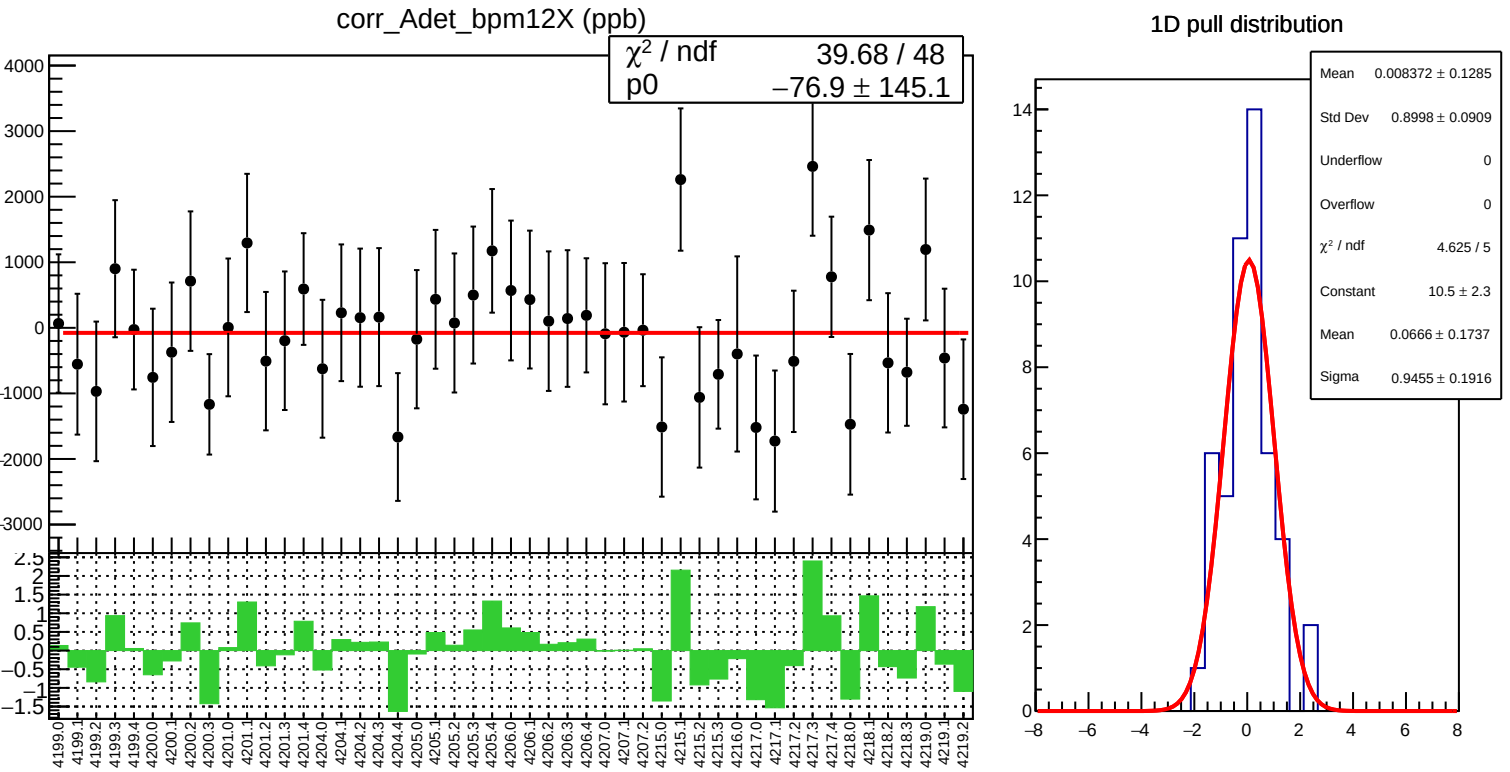

1D pull distribution
Mean 0.008564 ± 0.07381
Std Dev 0.5167 ± 0.05219
Underflow 0
Overflow 0
χ² / ndf 6.781 / 2
Constant 17.95 ± 8.30
Mean −0.1205 ± 0.1361
Sigma 0.5146 ± 0.2510
25
20
15
10
5
0
−8
−6
−4
−2
0
2
4
6
8

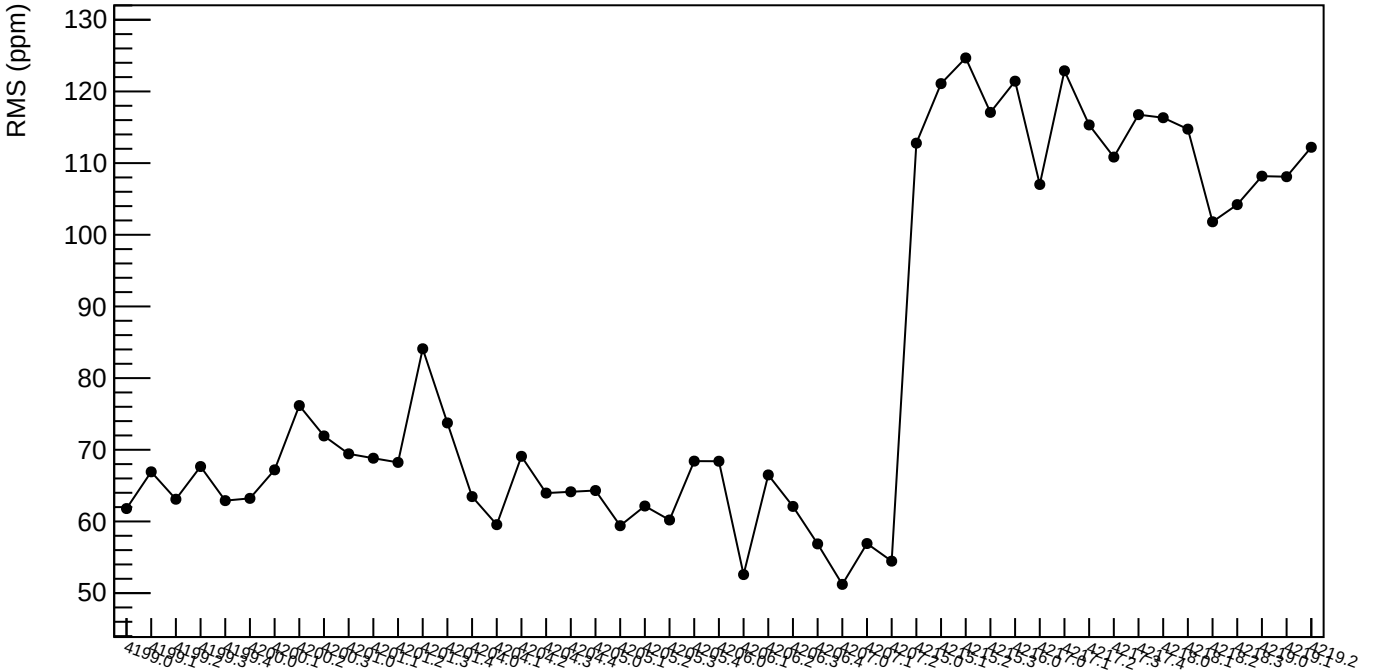

corr_Adet_bpm16X RMS (ppm)
RMS (ppm)
35
30
25
20
15
10
5

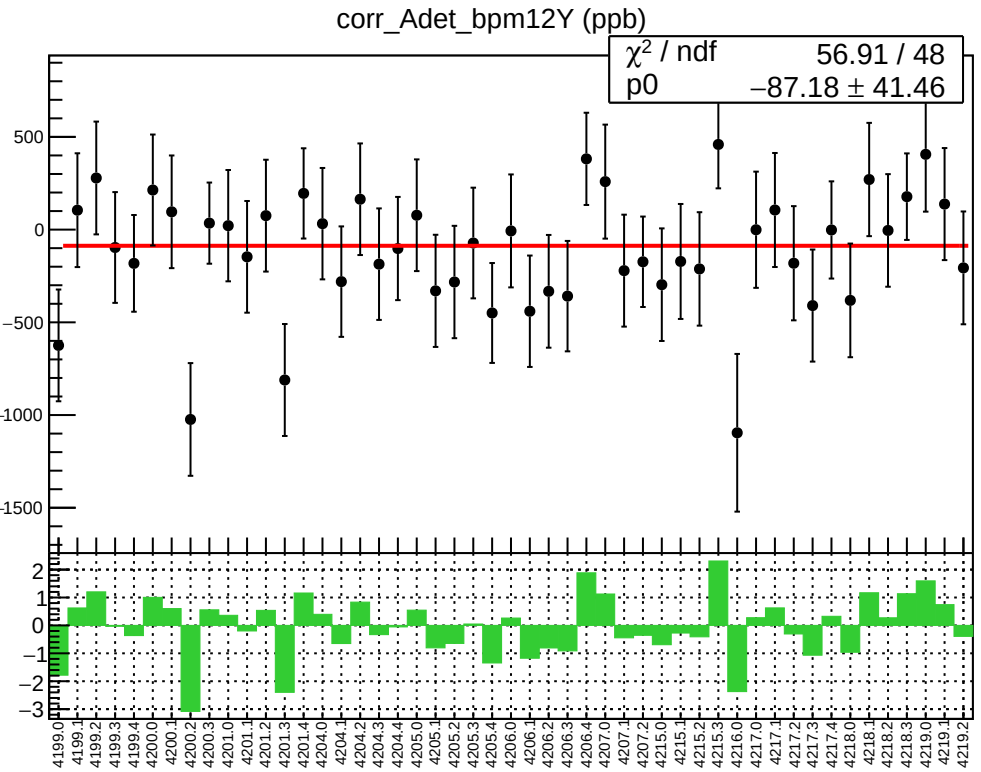

corr_Adet_bpm16Y (ppb)
χ² / ndf 49.16 / 48
p0 3.206 ± 30.87
800
600
400
200
0
−200
−400
−600
−800
2
1
0
−1
−2
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

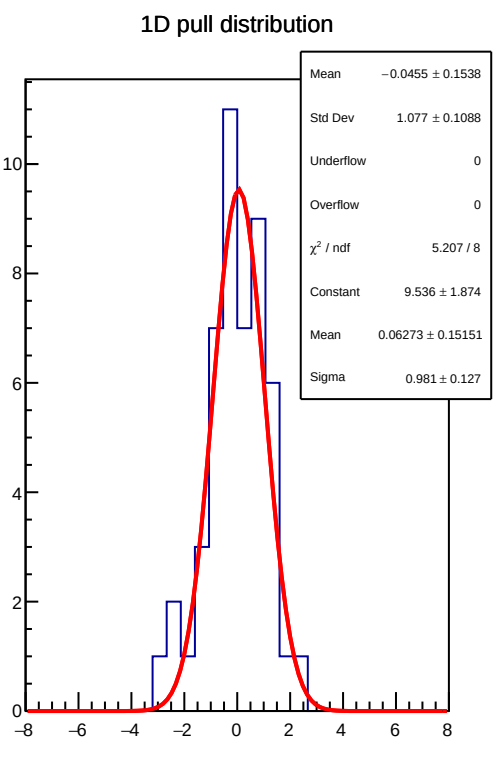

1D pull distribution
Mean −0.01487 ± 0.1431
Std Dev 1.002 ± 0.1012
Underflow 0
Overflow 0
χ² / ndf 3.878 / 6
Constant 9.986 ± 2.035
Mean 0.02348 ± 0.17437
Sigma 0.9874 ± 0.1602
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

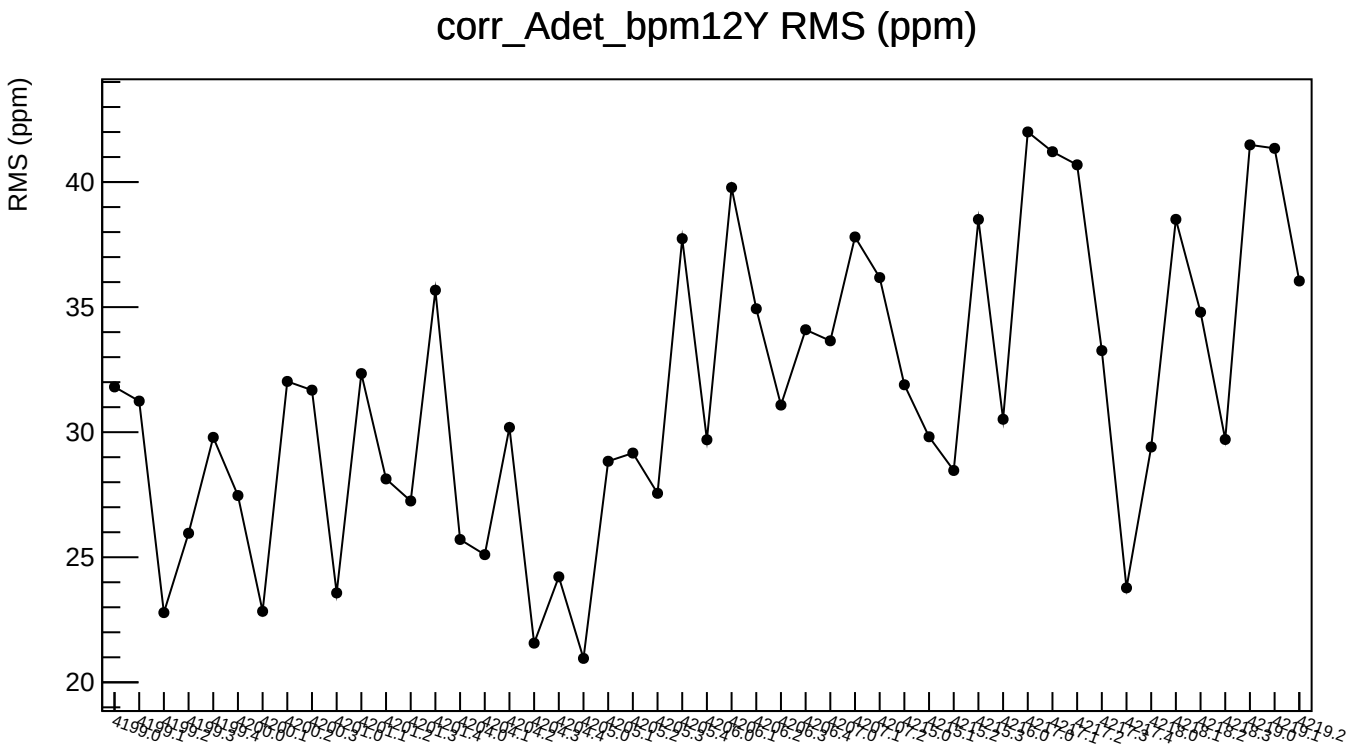

corr_Adet_bpm16Y RMS (ppm)
RMS (ppm)
34
32
30
28
26
24
22
20
18
16
14
12

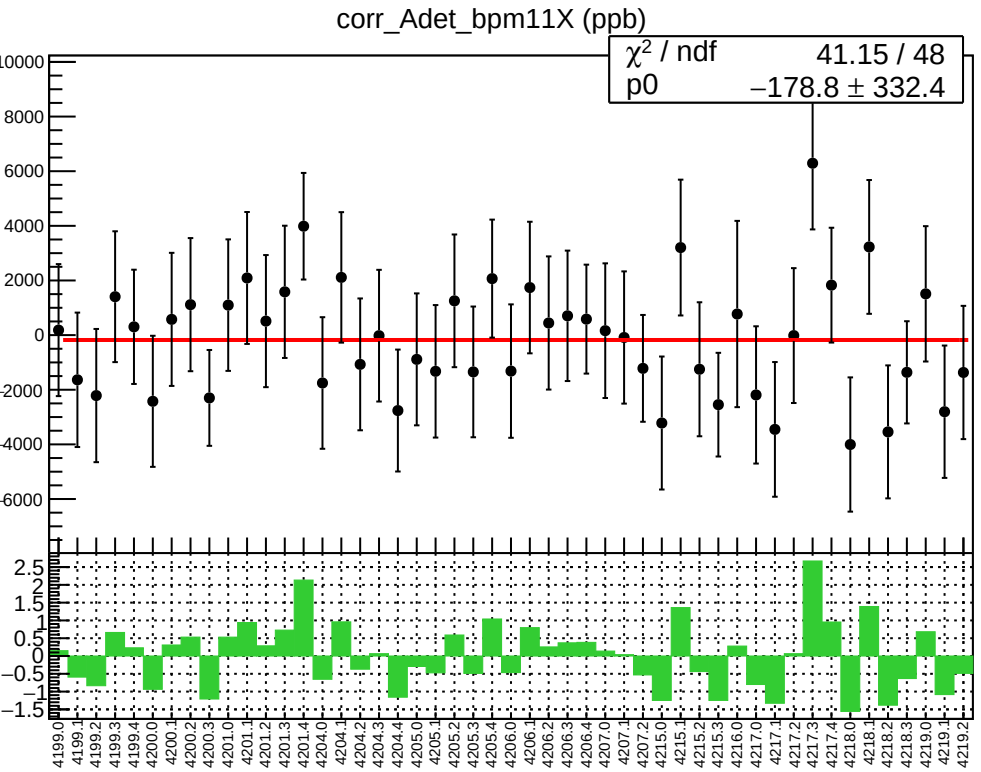

corr_Adet_bpm12X (ppb)
χ² / ndf 39.68 / 48
p0 −76.9 ± 145.1
1D pull distribution
Mean 0.008372 ± 0.1285
Std Dev 0.8998 ± 0.0909
Underflow 0
Overflow 0
χ² / ndf 4.625 / 5
Constant 10.5 ± 2.3
Mean 0.0666 ± 0.1737
Sigma 0.9455 ± 0.1916

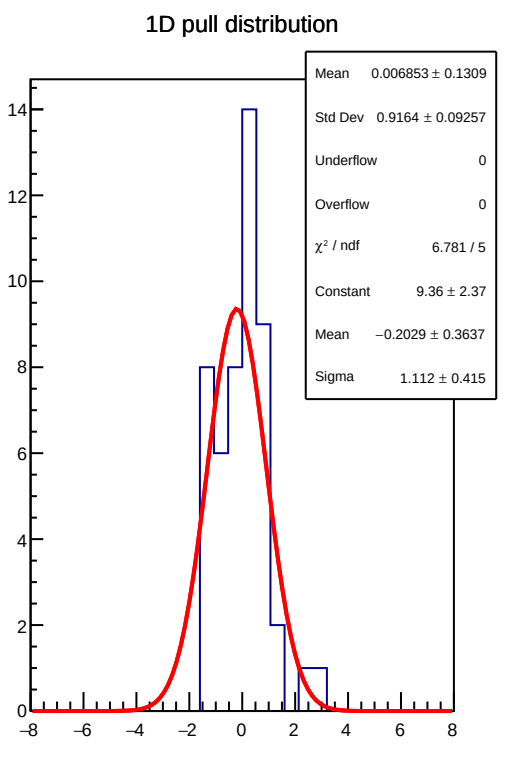

corr_Adet_bpm12X RMS (ppm)
RMS (ppm)
130
120
110
100
90
80
70
60
50

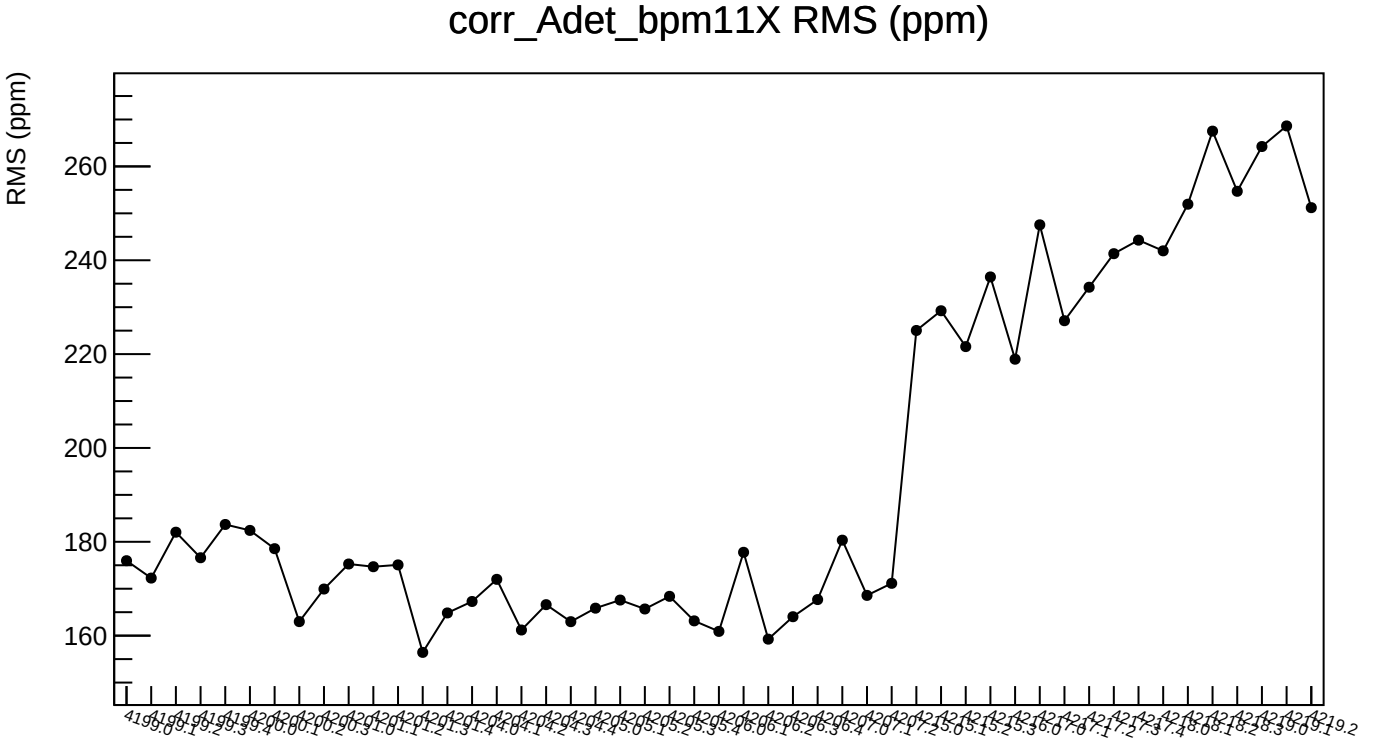

corr_Adet_bpm12Y (ppb)
χ² / ndf 56.91 / 48
p0 −87.18 ± 41.46
500
0
−500
−1000
−1500
2
1
0
−1
−2
−3
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

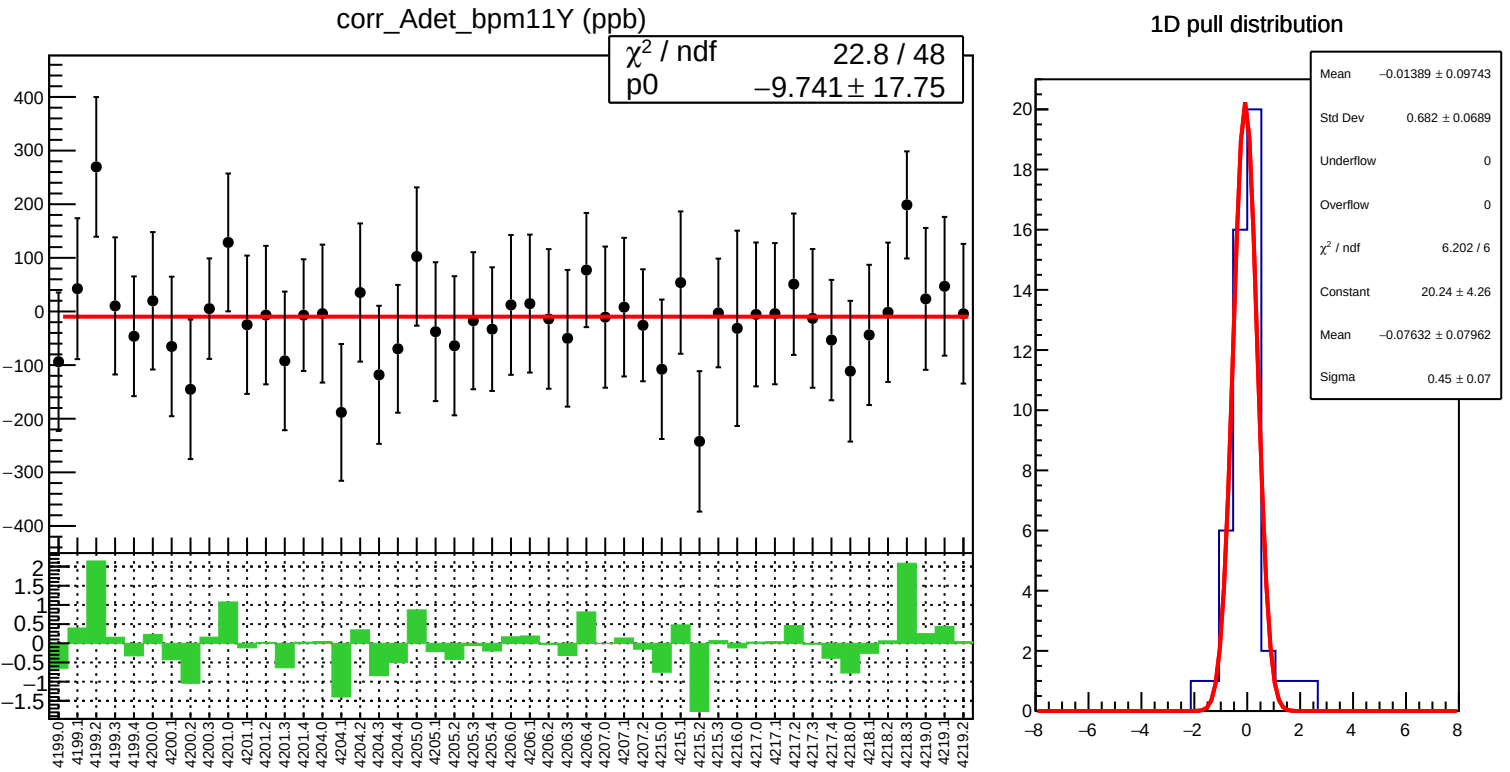

1D pull distribution
Mean −0.0455 ± 0.1538
Std Dev 1.077 ± 0.1088
Underflow 0
Overflow 0
χ² / ndf 5.207 / 8
Constant 9.536 ± 1.874
Mean 0.06273 ± 0.15151
Sigma 0.981 ± 0.127
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

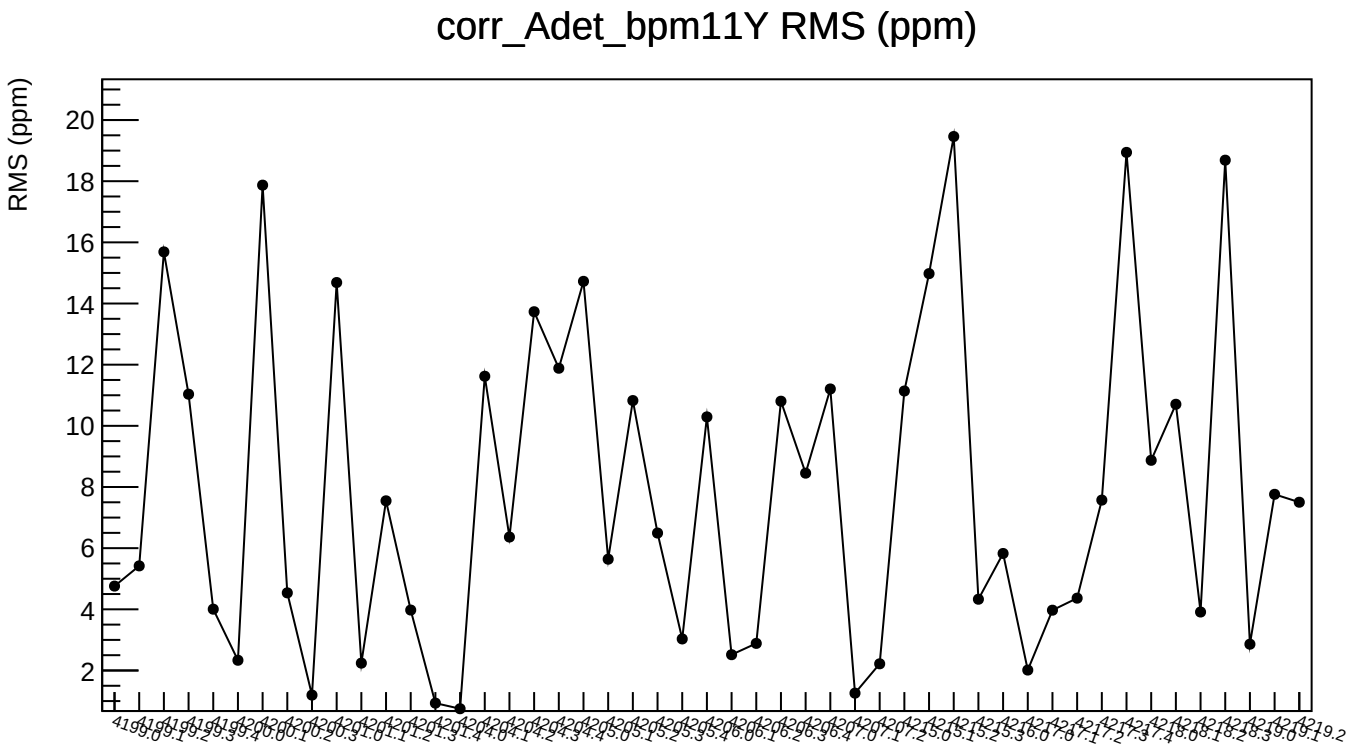

corr_Adet_bpm12Y RMS (ppm)
RMS (ppm)
40
35
30
25
20

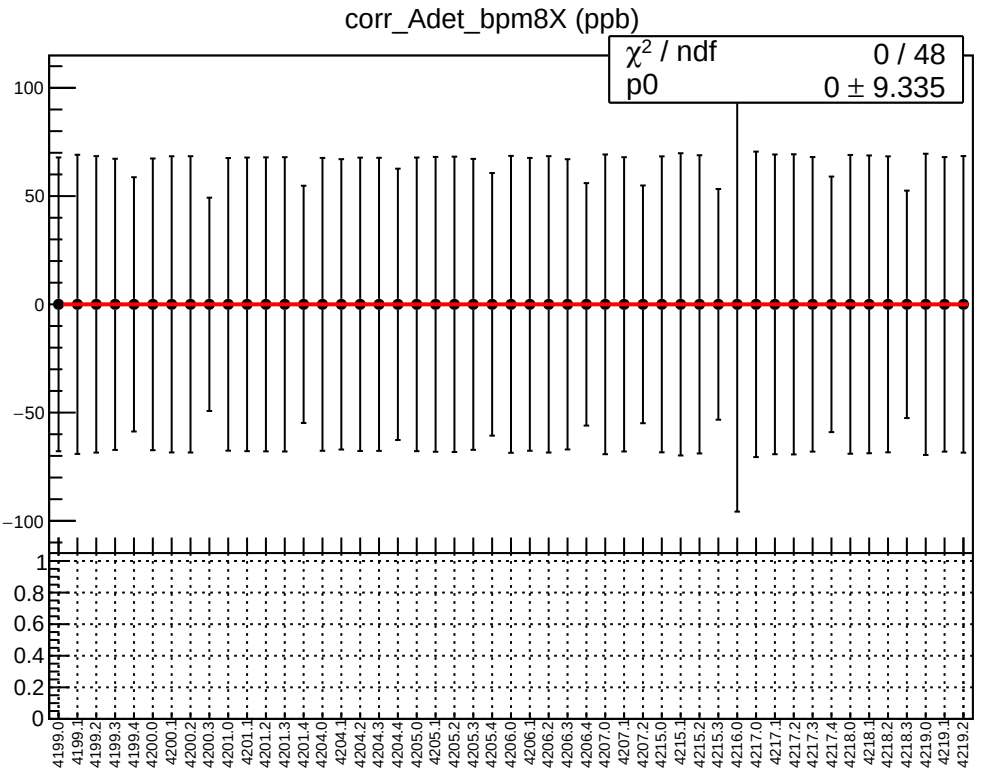

corr_Adet_bpm11X (ppb)
χ² / ndf 41.15 / 48
p0 −178.8 ± 332.4

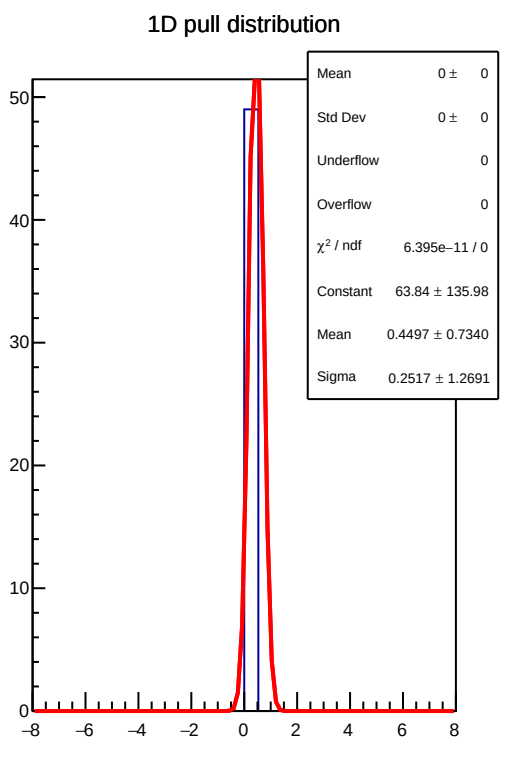

1D pull distribution
Mean 0.006853 ± 0.1309
Std Dev 0.9164 ± 0.09257
Underflow 0
Overflow 0
χ² / ndf 6.781 / 5
Constant 9.36 ± 2.37
Mean −0.2029 ± 0.3637
Sigma 1.112 ± 0.415

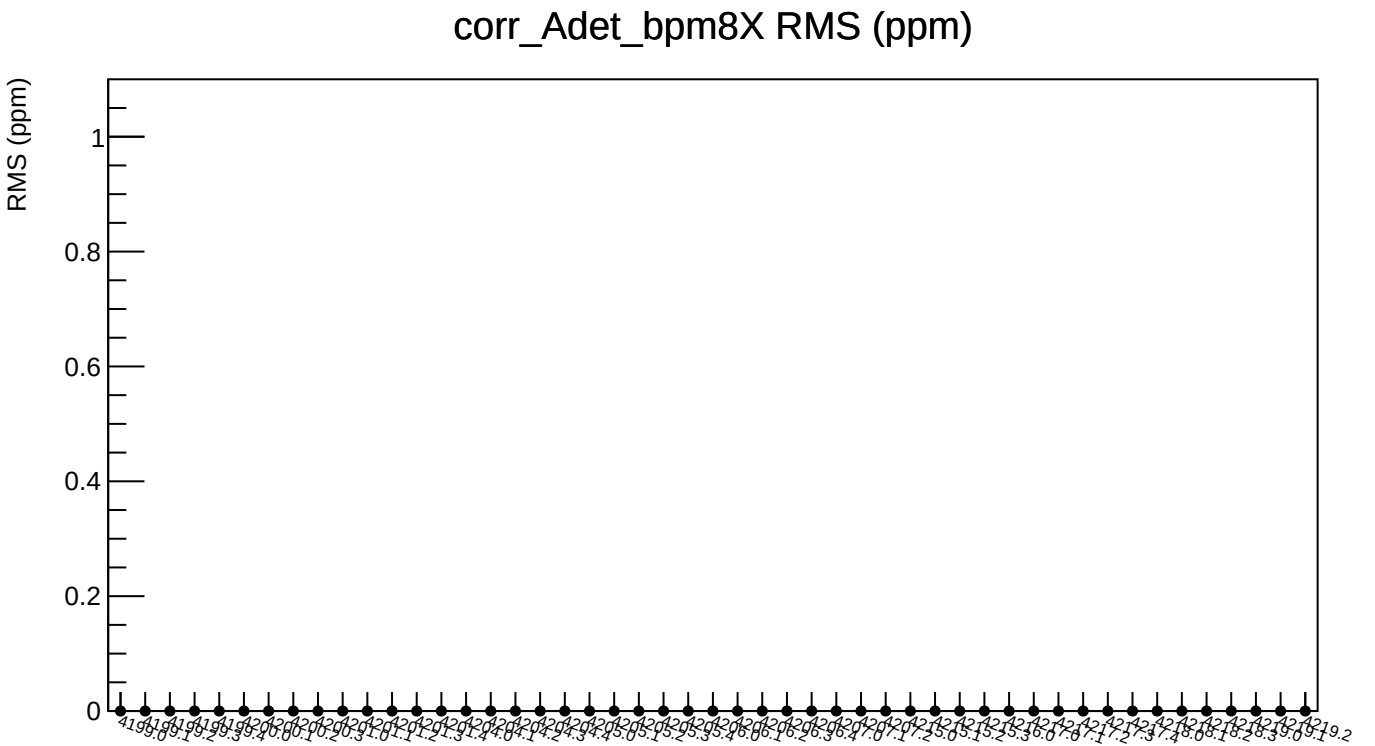

corr_Adet_bpm11X RMS (ppm)
RMS (ppm)
260
240
220
200
180
160

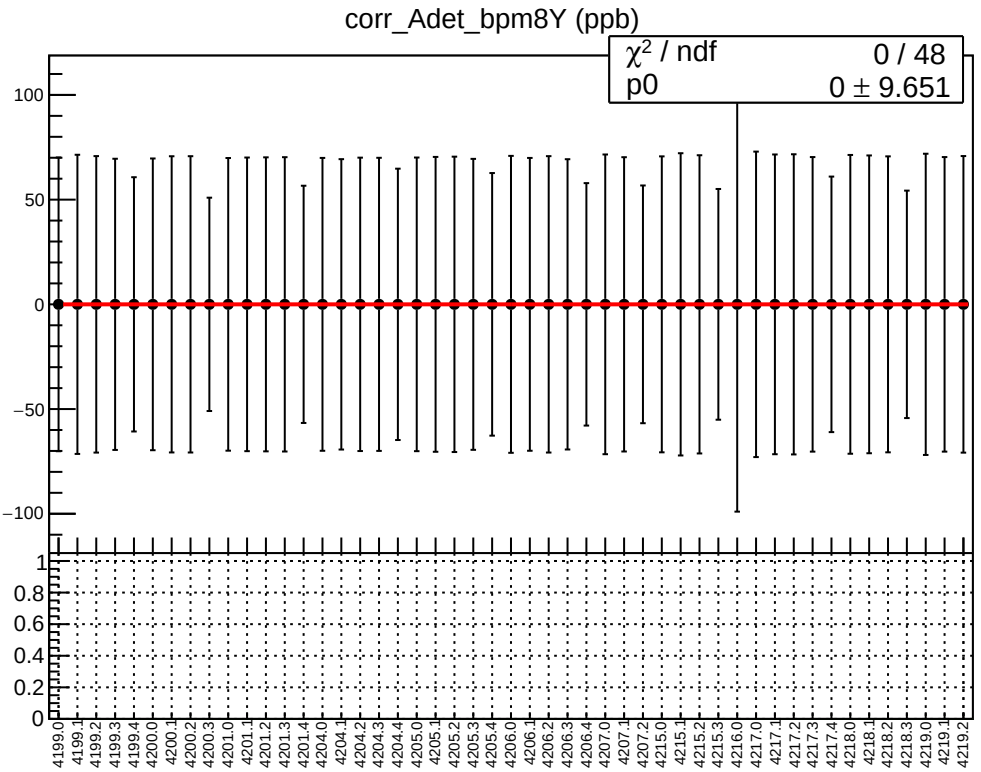

corr_Adet_bpm11Y (ppb)
χ² / ndf 22.8 / 48
p0 −9.741 ± 17.75
1D pull distribution
Mean −0.01389 ± 0.09743
Std Dev 0.682 ± 0.0689
Underflow 0
Overflow 0
χ² / ndf 6.202 / 6
Constant 20.24 ± 4.26
Mean −0.07632 ± 0.07962
Sigma 0.45 ± 0.07

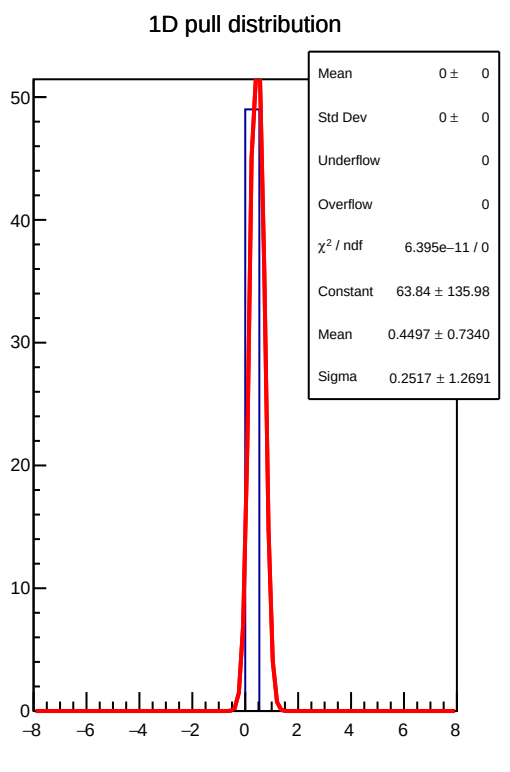

corr_Adet_bpm11Y RMS (ppm)
RMS (ppm)
20
18
16
14
12
10
8
6
4
2

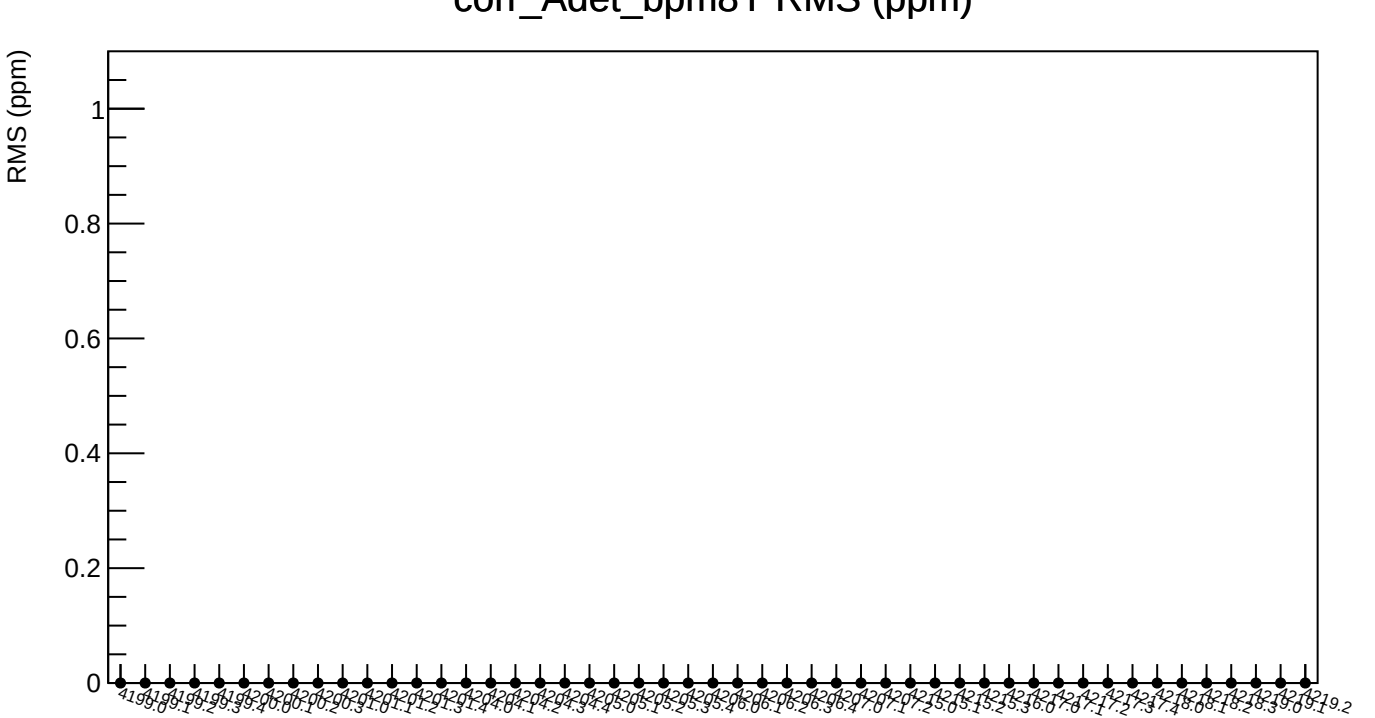

corr_Adet_bpm8X (ppb)
χ² / ndf 0 / 48
p0 0 ± 9.335
100
50
0
−50
−100
1
0.8
0.6
0.4
0.2
0
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

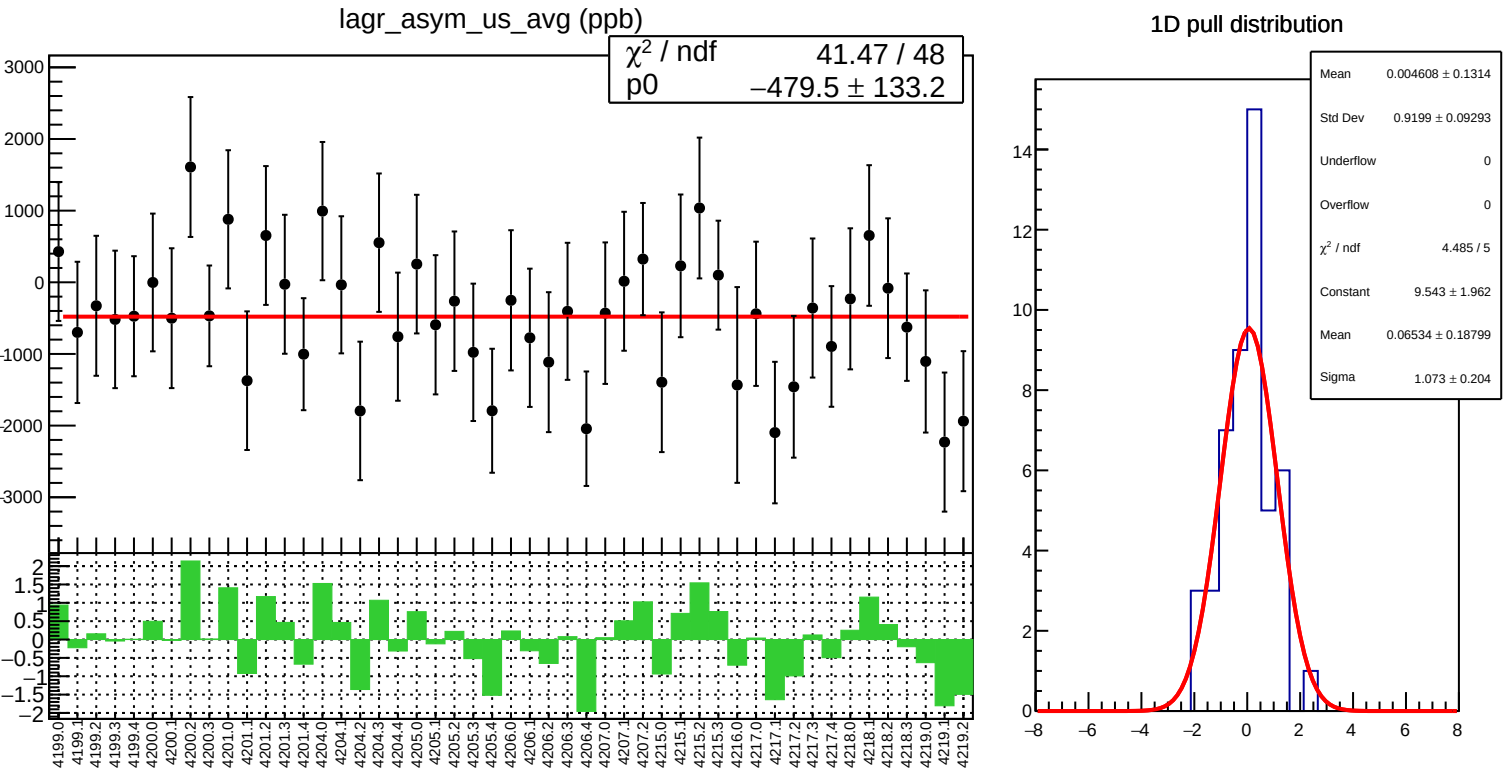

1D pull distribution
Mean 0 ± 0
Std Dev 0 ± 0
Underflow 0
Overflow 0
χ² / ndf 6.395e−11 / 0
Constant 63.84 ± 135.98
Mean 0.4497 ± 0.7340
Sigma 0.2517 ± 1.2691
50
40
30
20
10
0
−8
−6
−4
−2
0
2
4
6
8

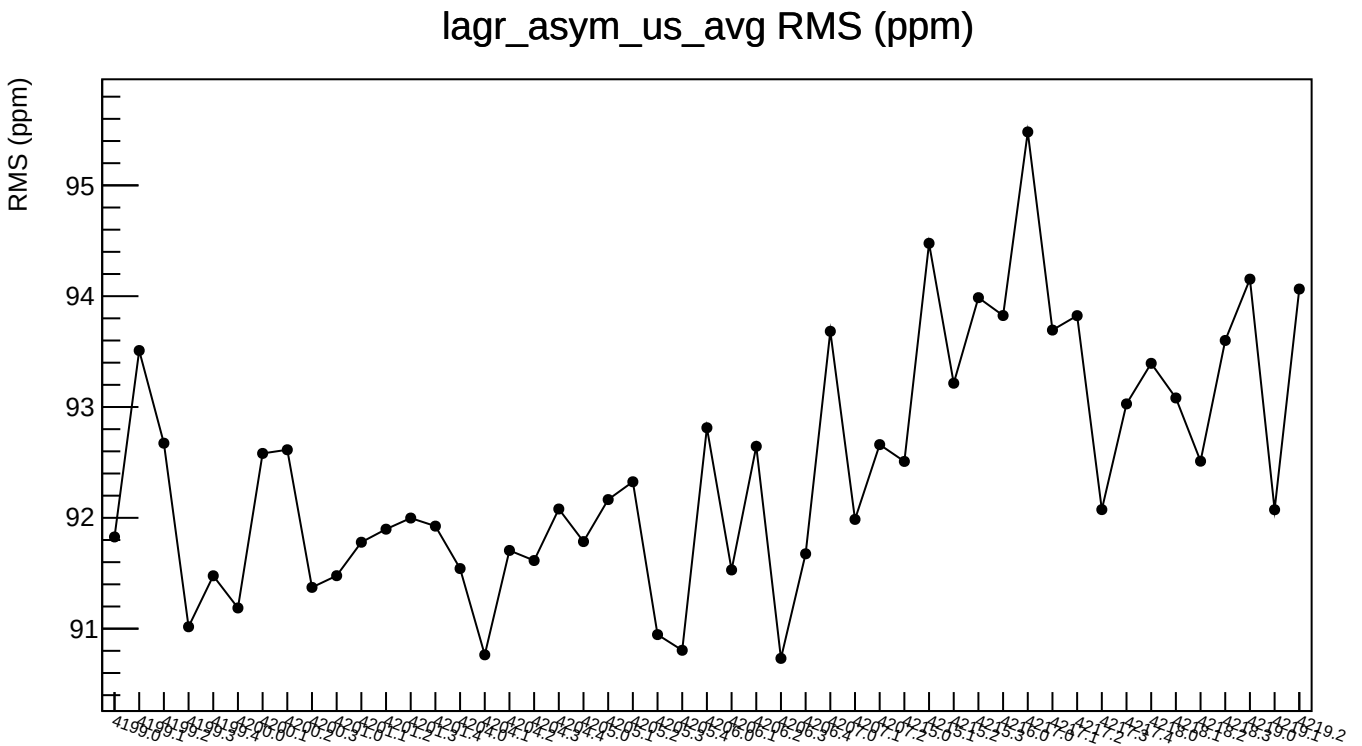

corr_Adet_bpm8X RMS (ppm)
RMS (ppm)
1
0.8
0.6
0.4
0.2
0

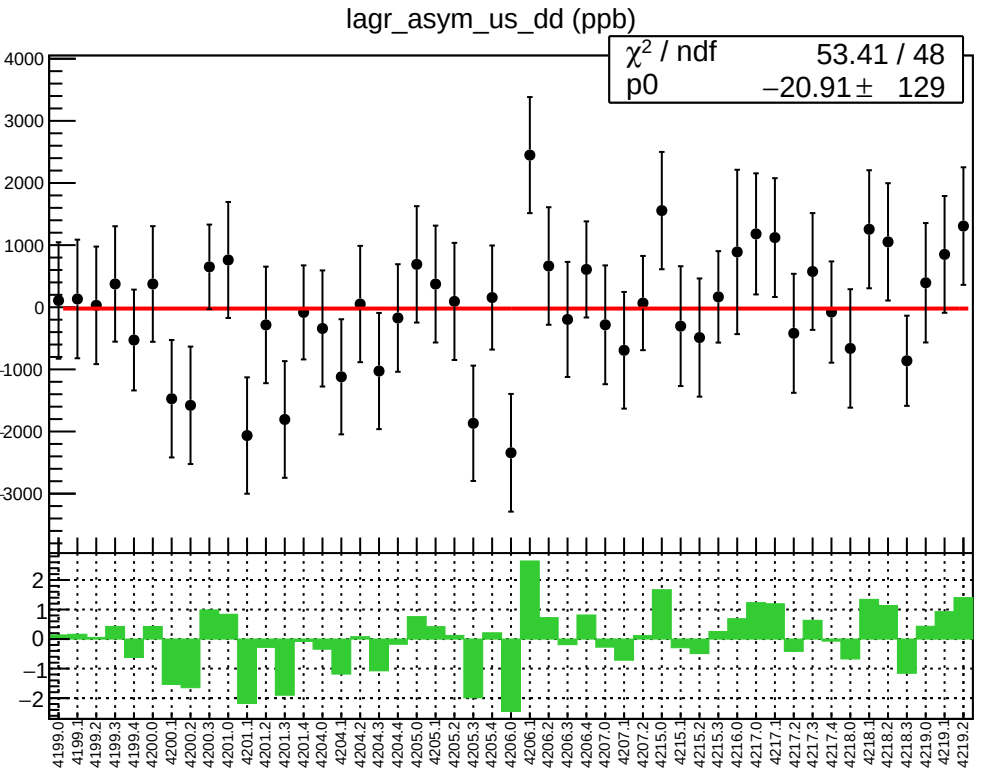

corr_Adet_bpm8Y (ppb)
χ² / ndf 0 / 48
p0 0 ± 9.651
100
50
0
−50
−100
1
0.8
0.6
0.4
0.2
0
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

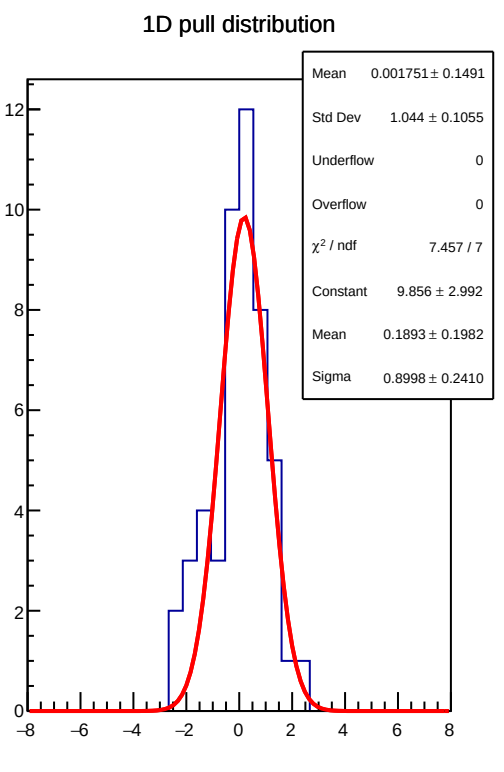

1D pull distribution
Mean 0 ± 0
Std Dev 0 ± 0
Underflow 0
Overflow 0
χ² / ndf 6.395e−11 / 0
Constant 63.84 ± 135.98
Mean 0.4497 ± 0.7340
Sigma 0.2517 ± 1.2691
50
40
30
20
10
0
−8
−6
−4
−2
0
2
4
6
8

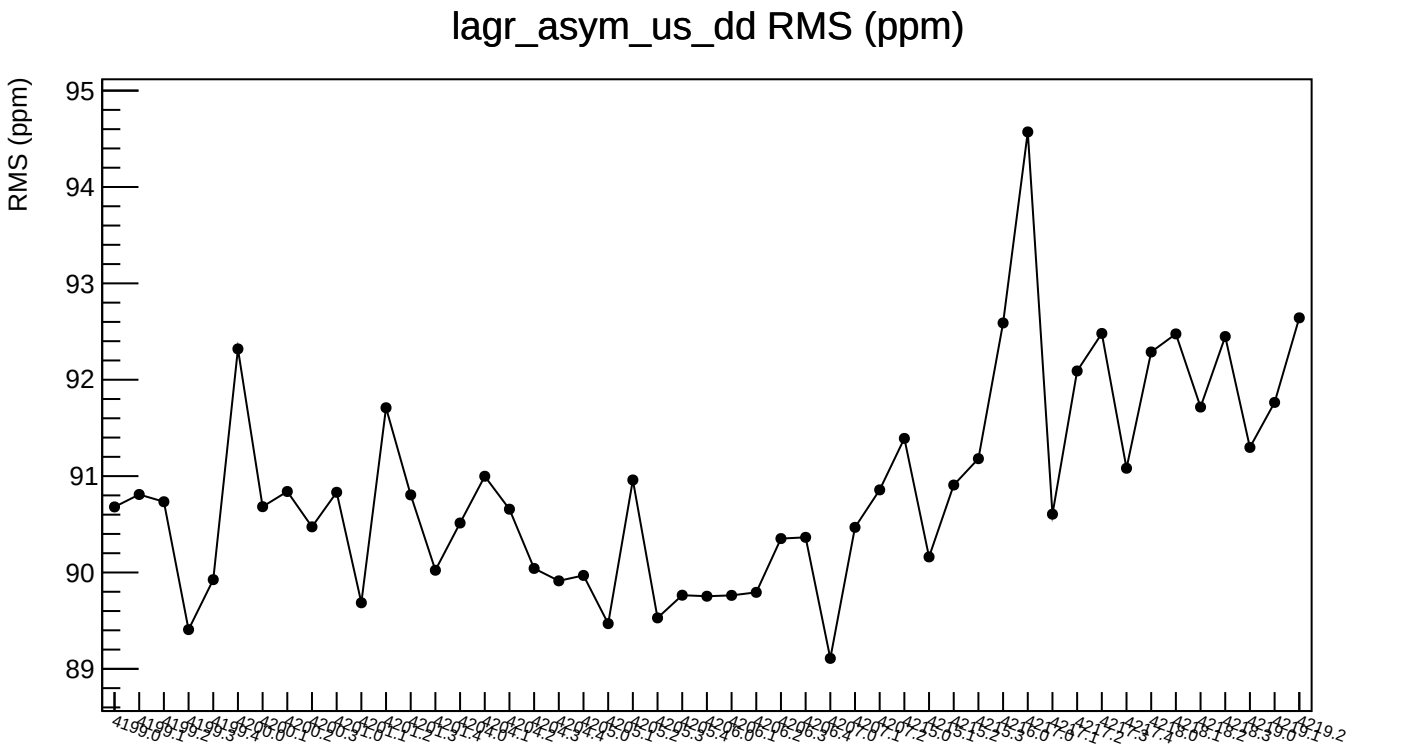

corr_Adet_bpm8Y RMS (ppm)
RMS (ppm)
1
0.8
0.6
0.4
0.2
0

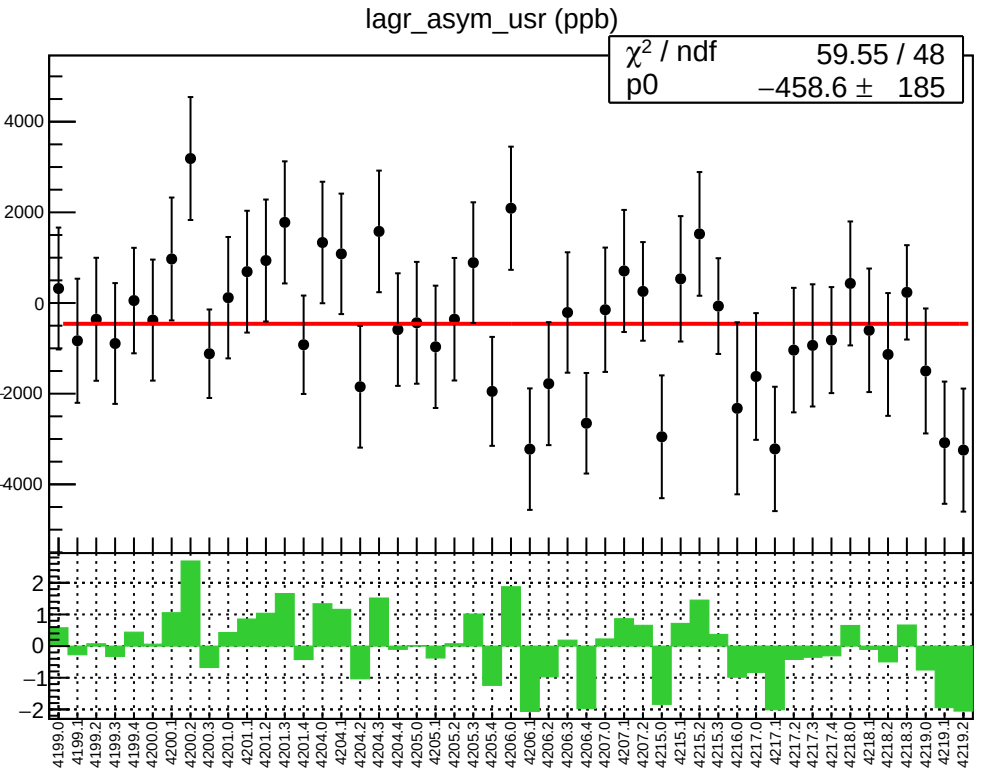

lagr_asym_us_avg (ppb)
χ² / ndf 41.47 / 48
p0 −479.5 ± 133.2
1D pull distribution
Mean 0.004608 ± 0.1314
Std Dev 0.9199 ± 0.09293
Underflow 0
Overflow 0
χ² / ndf 4.485 / 5
Constant 9.543 ± 1.962
Mean 0.06534 ± 0.18799
Sigma 1.073 ± 0.204

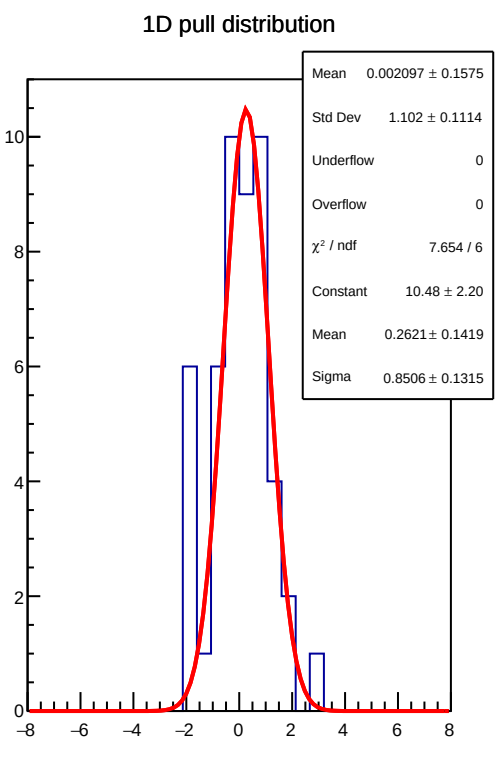

lagr_asym_us_avg RMS (ppm)
RMS (ppm)
95
94
93
92
91

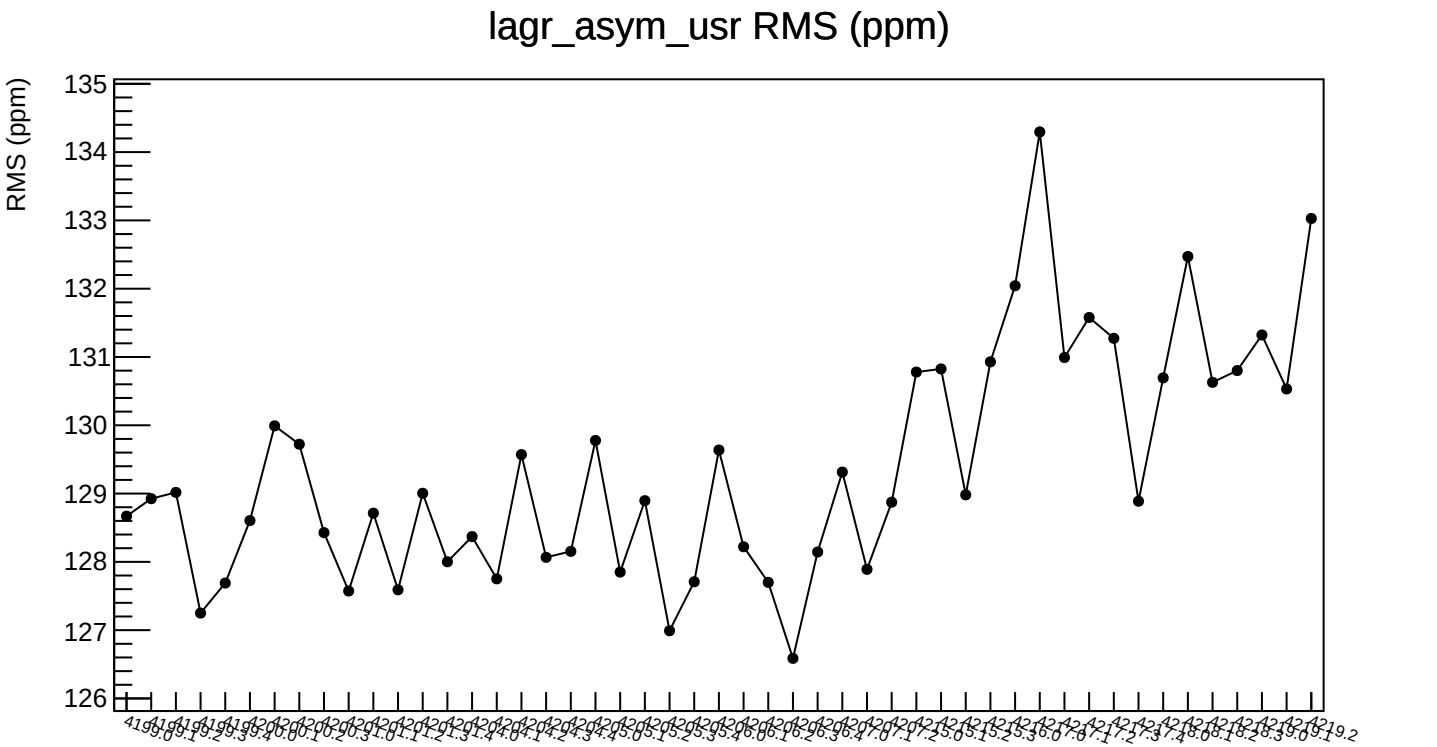

lagr_asym_us_dd (ppb)
χ² / ndf 53.41 / 48
p0 −20.91 ± 129
4000
3000
2000
1000
0
-1000
-2000
-3000
2
1
0
−1
−2
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

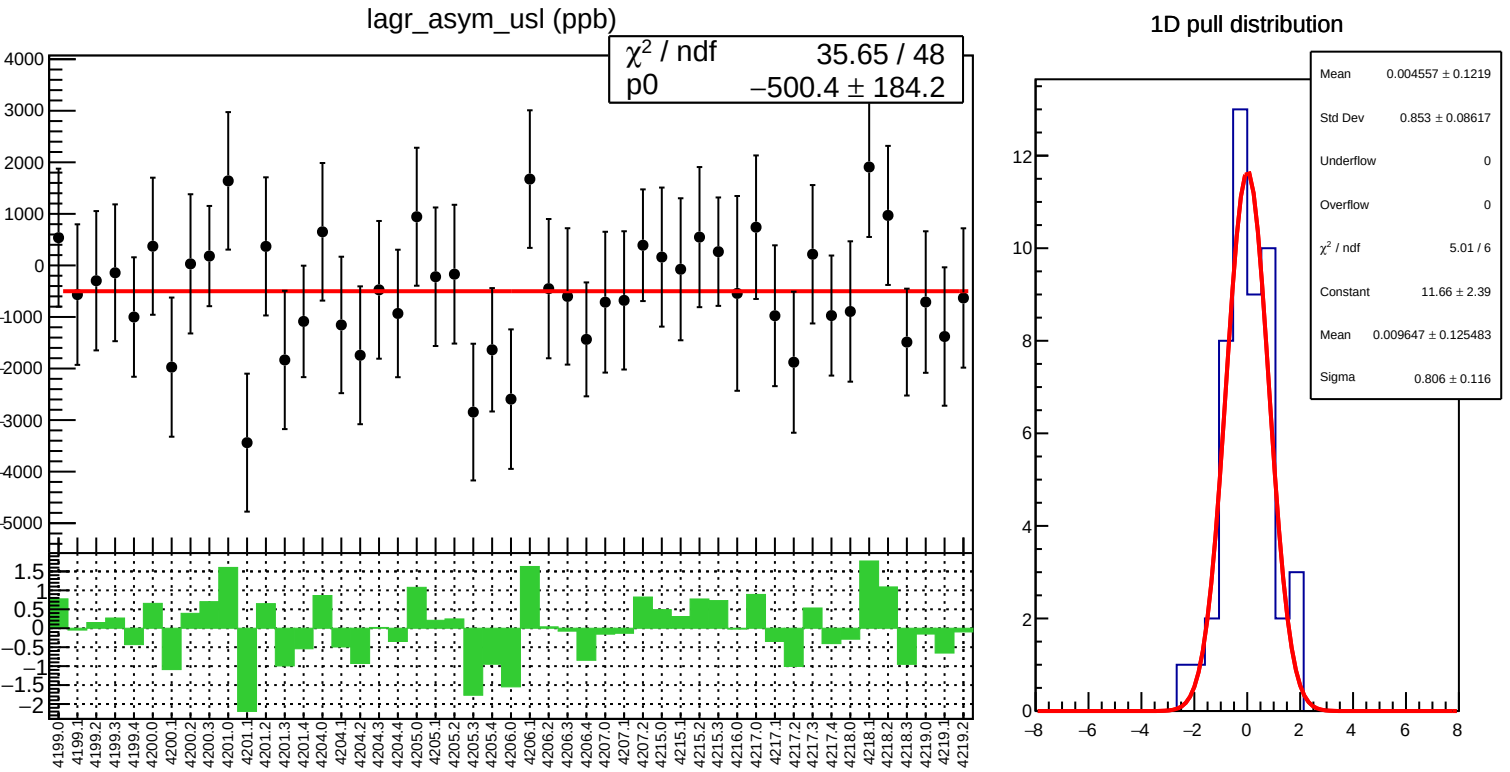

1D pull distribution
Mean 0.001751 ± 0.1491
Std Dev 1.044 ± 0.1055
Underflow 0
Overflow 0
χ² / ndf 7.457 / 7
Constant 9.856 ± 2.992
Mean 0.1893 ± 0.1982
Sigma 0.8998 ± 0.2410
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

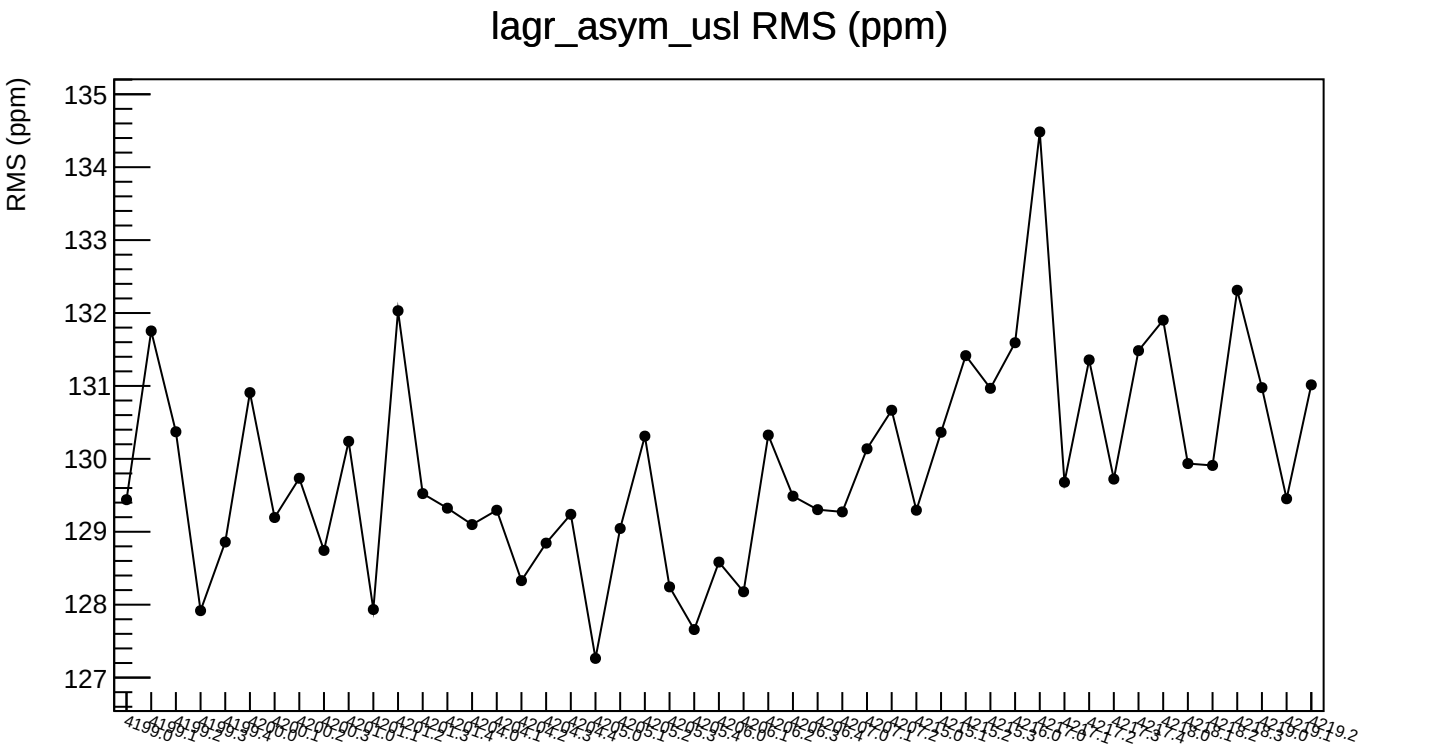

lagr_asym_us_dd RMS (ppm)
RMS (ppm)
95
94
93
92
91
90
89

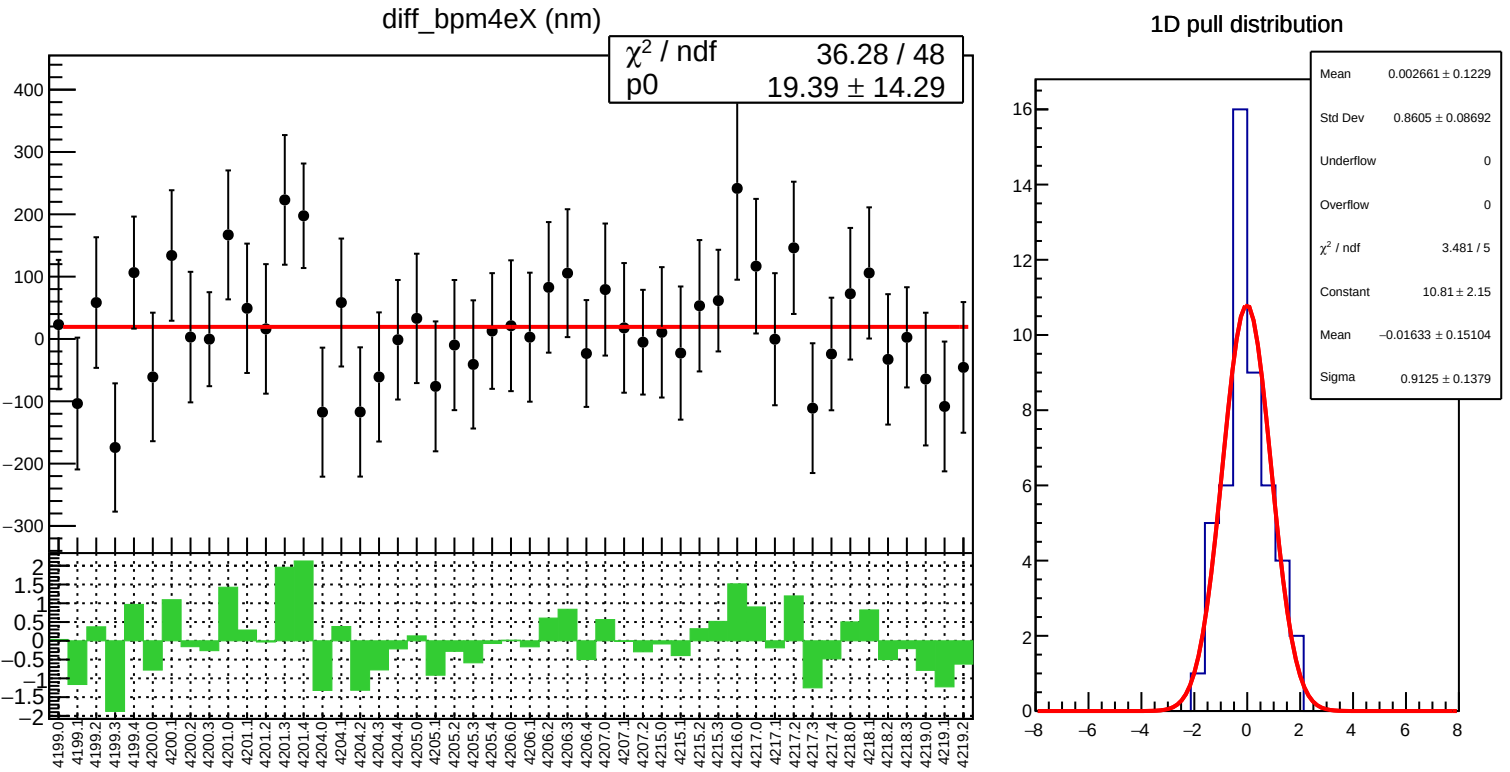

lagr_asym_usr (ppb)
χ² / ndf 59.55 / 48
p0 −458.6 ± 185
4000
2000
0
-2000
-4000
2
1
0
−1
−2
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

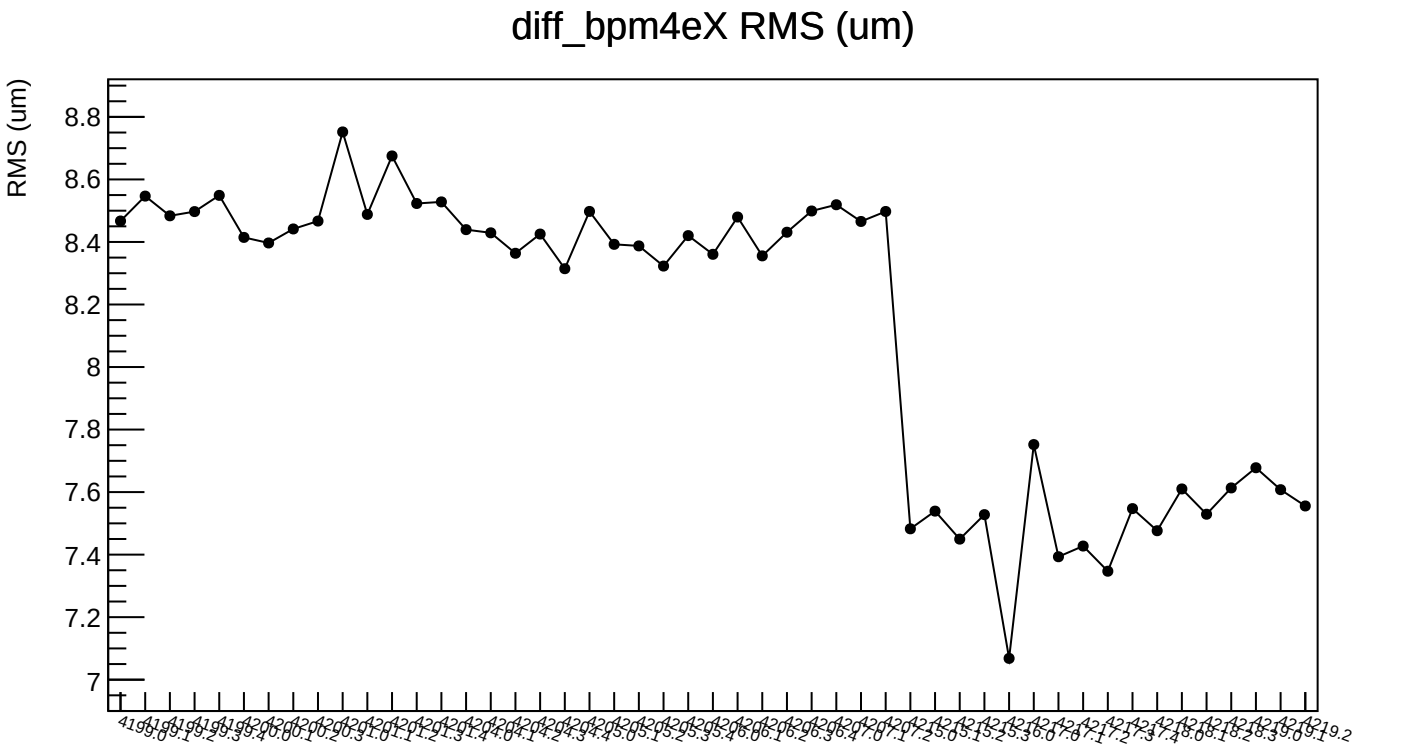

1D pull distribution
Mean 0.002097 ± 0.1575
Std Dev 1.102 ± 0.1114
Underflow 0
Overflow 0
χ² / ndf 7.654 / 6
Constant 10.48 ± 2.20
Mean 0.2621 ± 0.1419
Sigma 0.8506 ± 0.1315
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

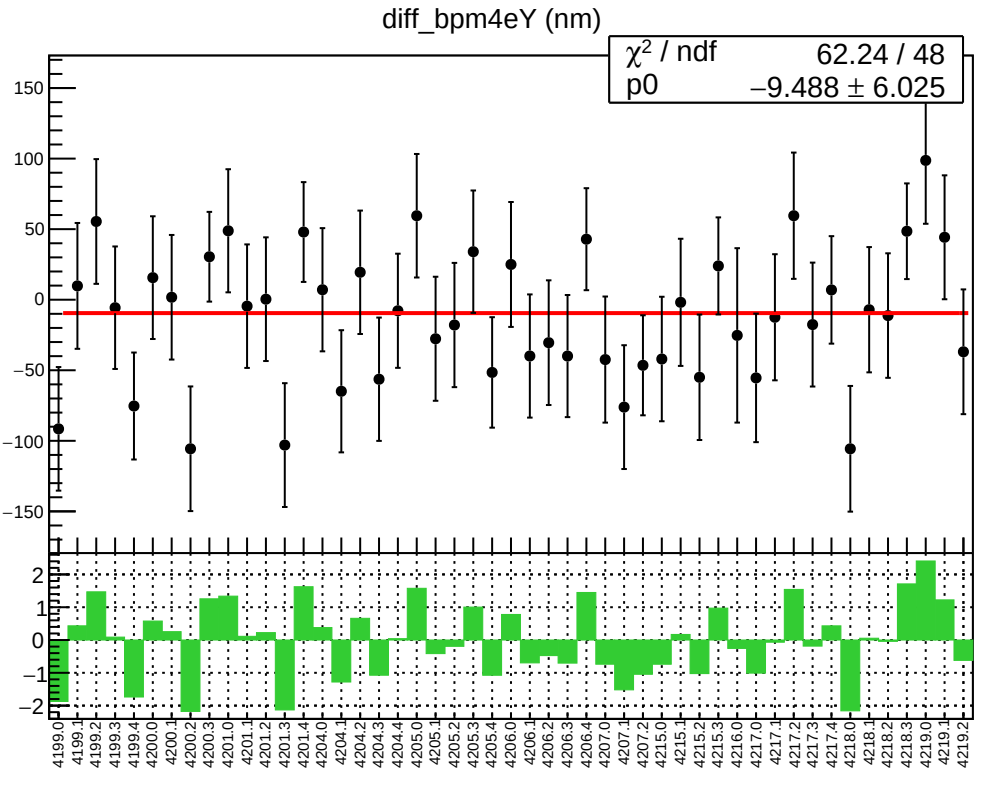

lagr_asym_usr RMS (ppm)
RMS (ppm)
135
134
133
132
131
130
129
128
127
126

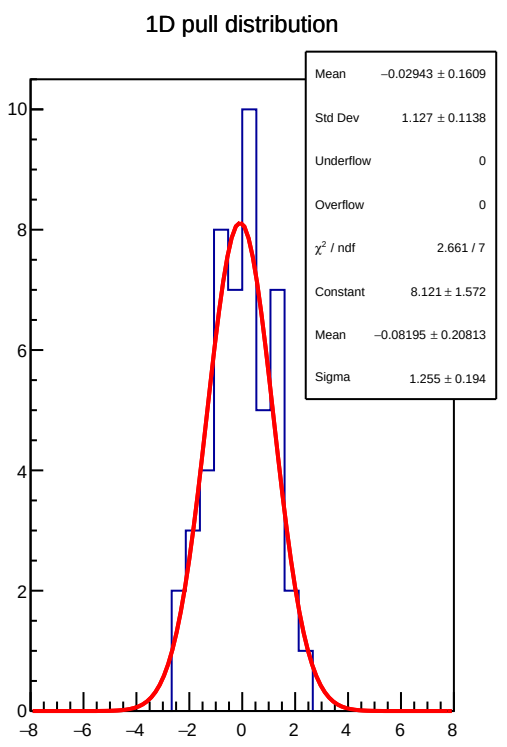

lagr_asym_usl (ppb)
χ² / ndf 35.65 / 48
p0 −500.4 ± 184.2
1D pull distribution
Mean 0.004557 ± 0.1219
Std Dev 0.853 ± 0.08617
Underflow 0
Overflow 0
χ² / ndf 5.01 / 6
Constant 11.66 ± 2.39
Mean 0.009647 ± 0.125483
Sigma 0.806 ± 0.116

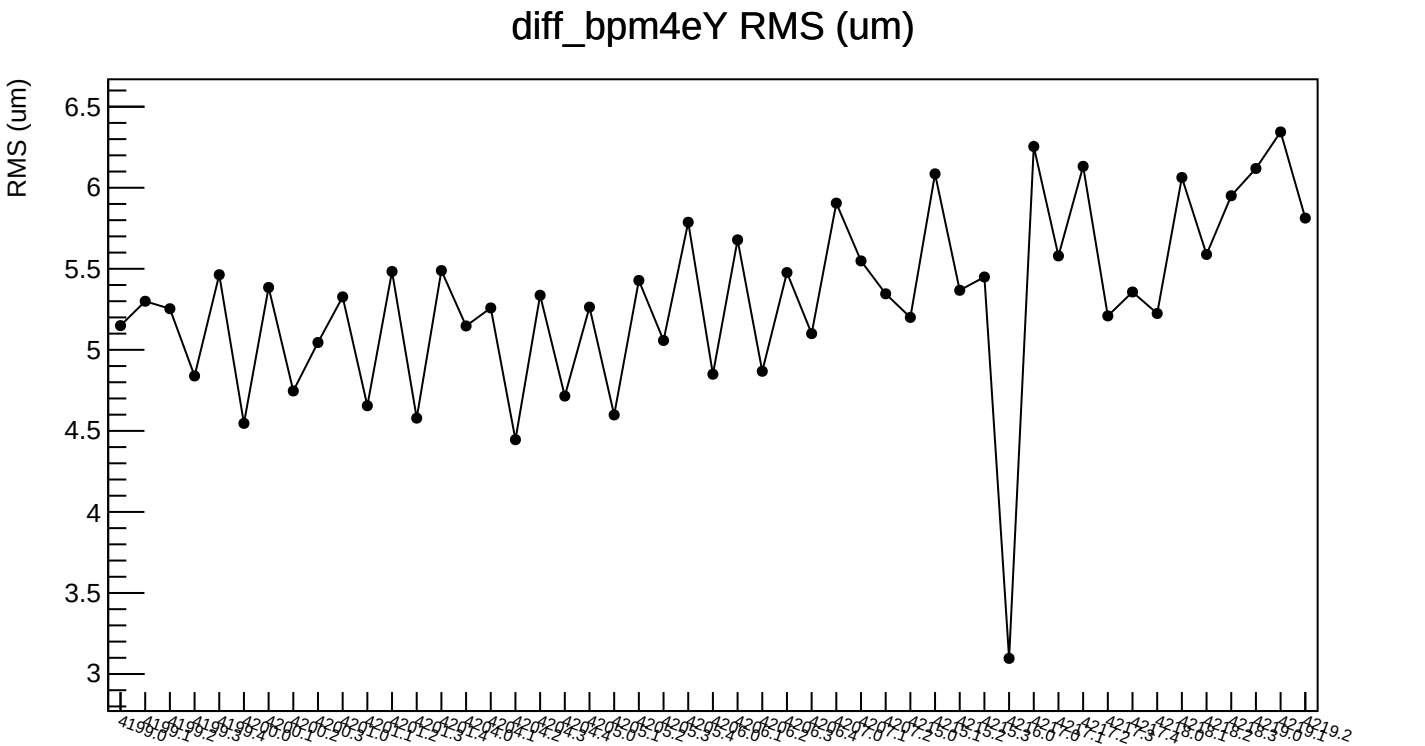

lagr_asym_usl RMS (ppm)
RMS (ppm)
135
134
133
132
131
130
129
128
127

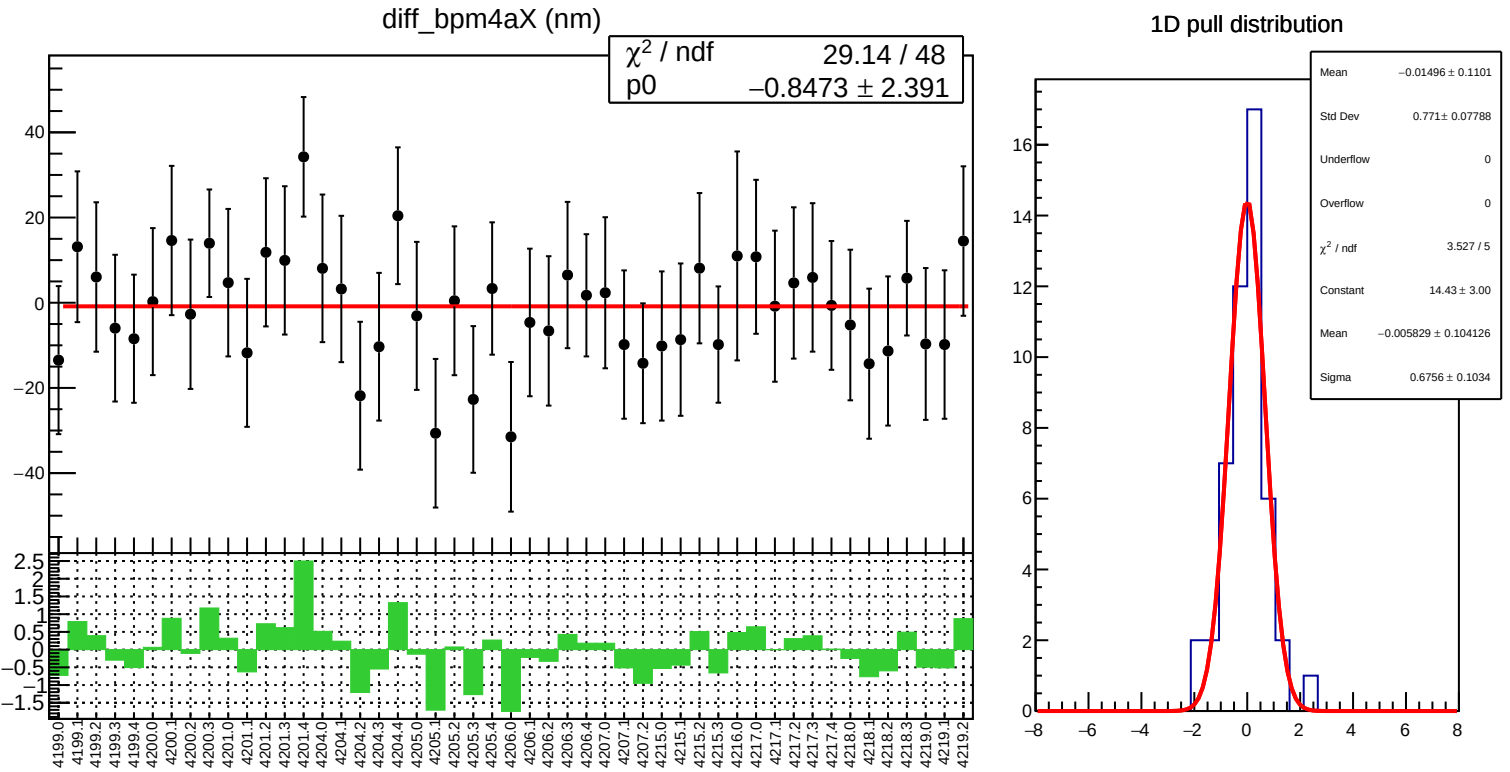

diff_bpm4eX (nm)
χ² / ndf 36.28 / 48
p0 19.39 ± 14.29
1D pull distribution
Mean 0.002661 ± 0.1229
Std Dev 0.8605 ± 0.08692
Underflow 0
Overflow 0
χ² / ndf 3.481 / 5
Constant 10.81 ± 2.15
Mean −0.01633 ± 0.15104
Sigma 0.9125 ± 0.1379

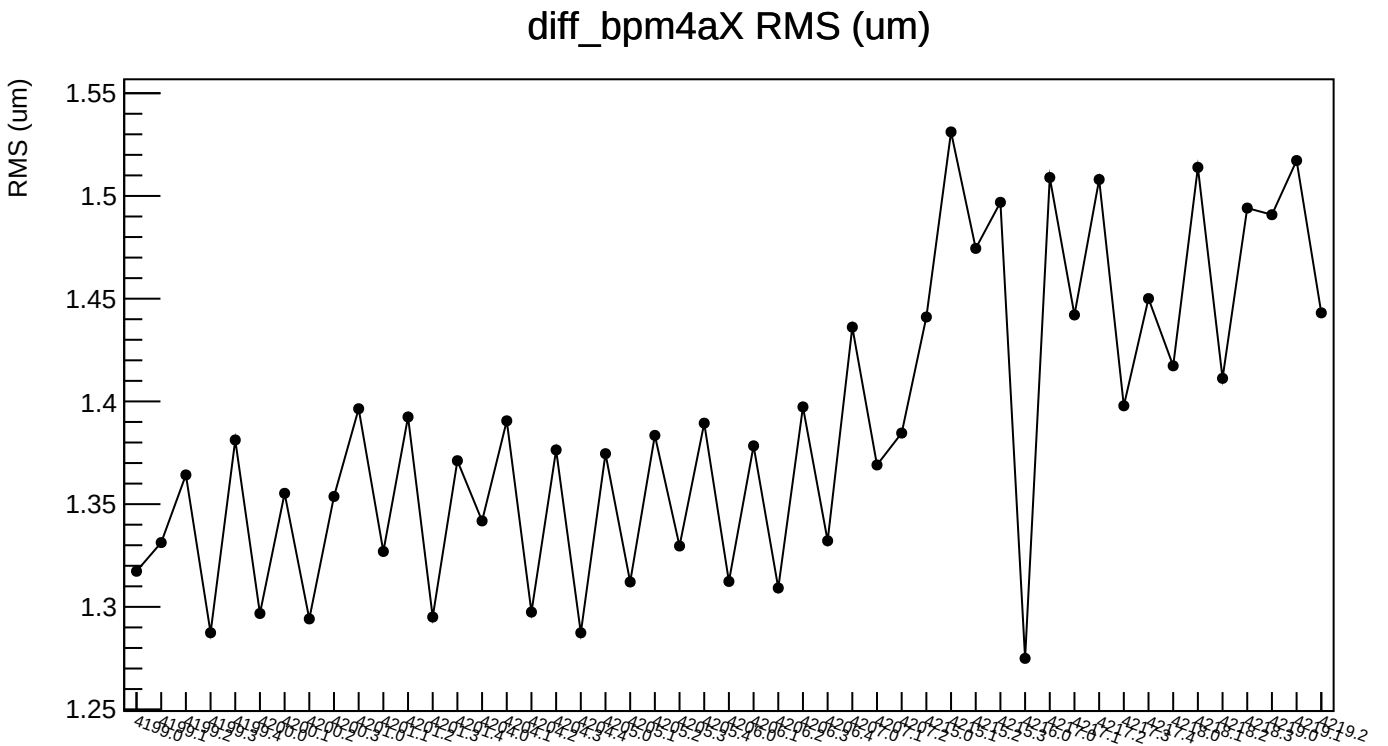

diff_bpm4eX RMS (um)
RMS (um)
8.8
8.6
8.4
8.2
8
7.8
7.6
7.4
7.2
7

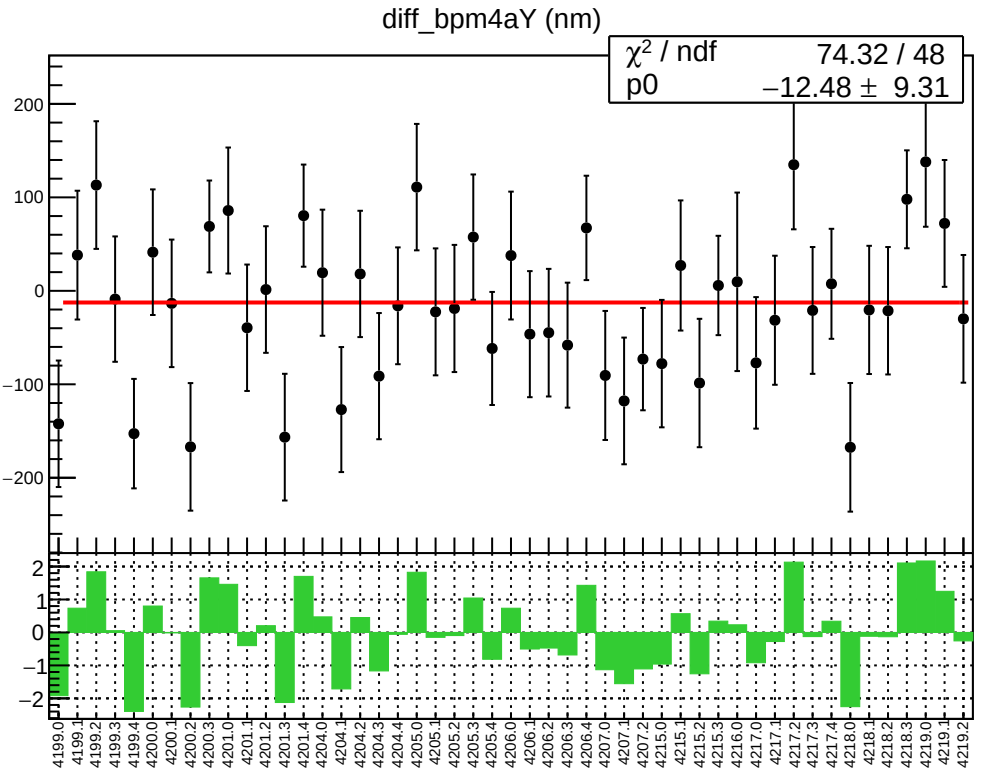

diff_bpm4eY (nm)
χ² / ndf 62.24 / 48
p0 −9.488 ± 6.025
150
100
50
0
−50
−100
−150
2
1
0
−1
−2
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

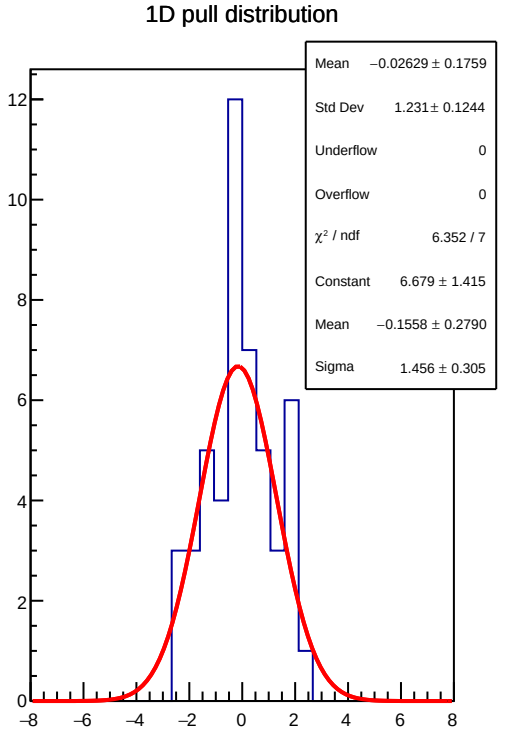

1D pull distribution
Mean −0.02943 ± 0.1609
Std Dev 1.127 ± 0.1138
Underflow 0
Overflow 0
χ² / ndf 2.661 / 7
Constant 8.121 ± 1.572
Mean −0.08195 ± 0.20813
Sigma 1.255 ± 0.194
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

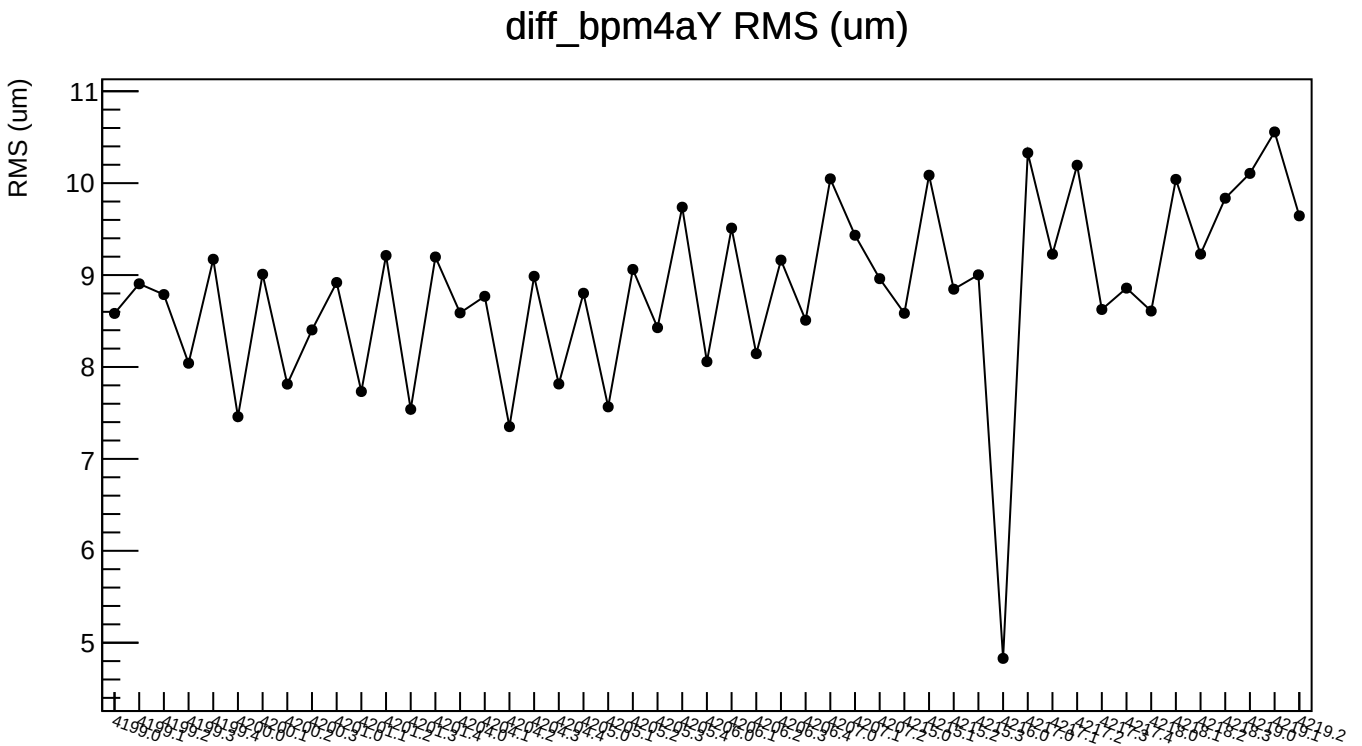

diff_bpm4eY RMS (um)
RMS (um)
6.5
6
5.5
5
4.5
4
3.5
3

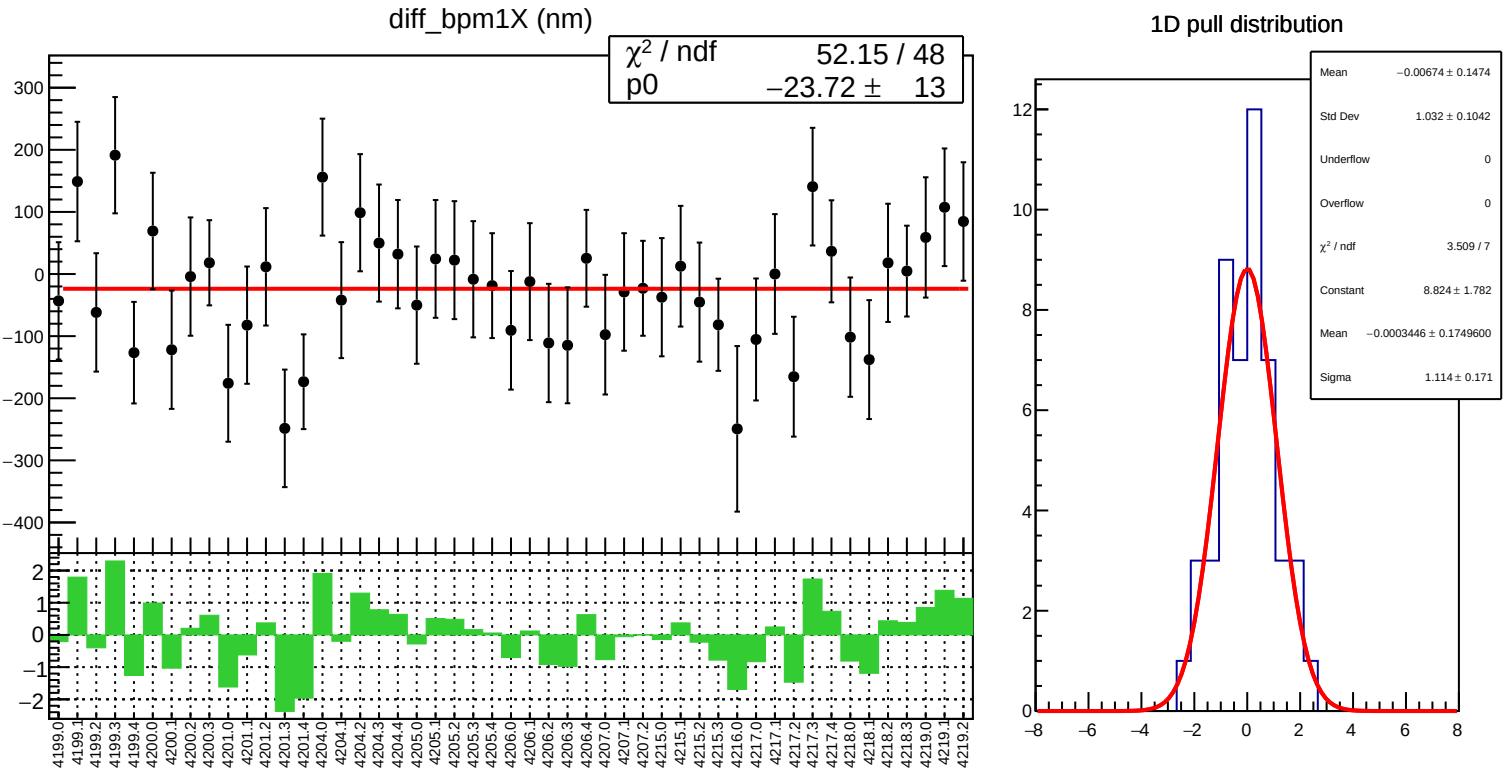

diff_bpm4aX (nm)
χ² / ndf 29.14 / 48
p0 −0.8473 ± 2.391
1D pull distribution
Mean −0.01496 ± 0.1101
Std Dev 0.771± 0.07788
Underflow 0
Overflow 0
χ² / ndf 3.527 / 5
Constant 14.43 ± 3.00
Mean −0.005829 ± 0.104126
Sigma 0.6756 ± 0.1034

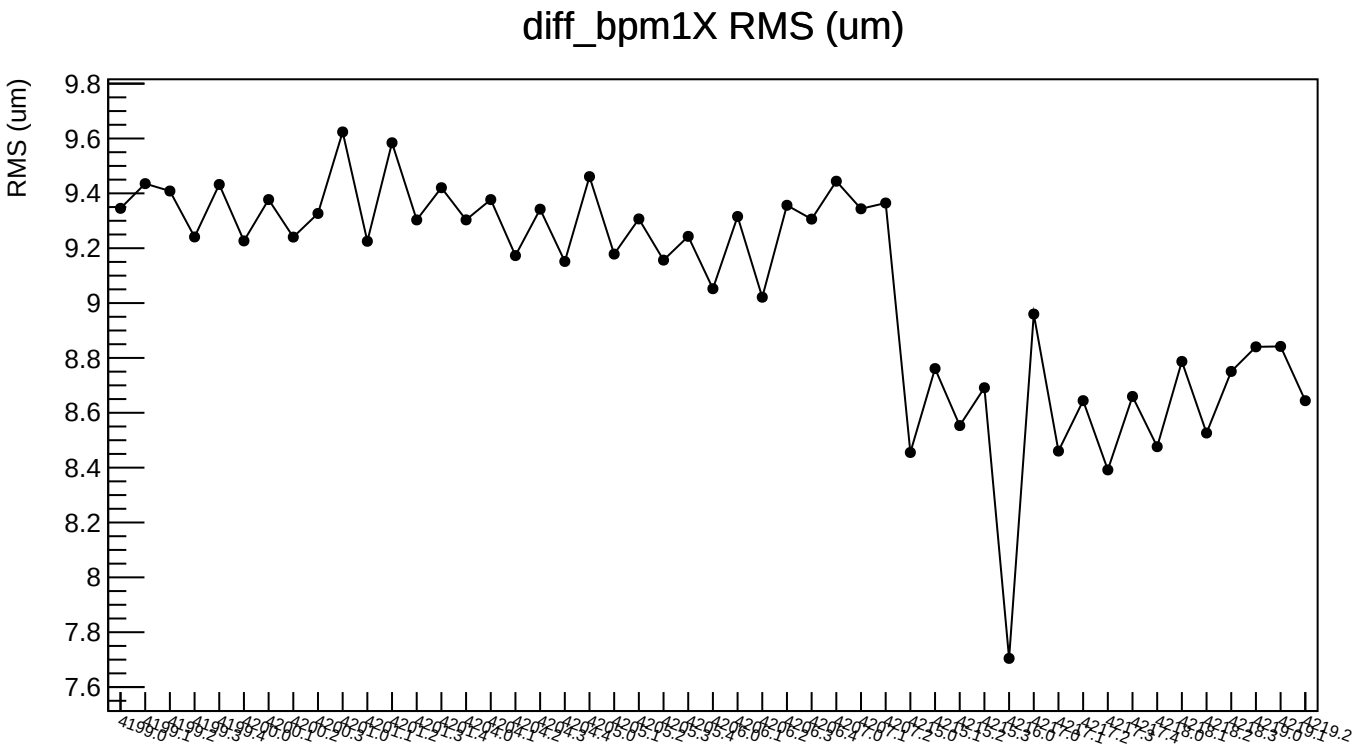

diff_bpm4aX RMS (um)
RMS (um)
1.55
1.5
1.45
1.4
1.35
1.3
1.25

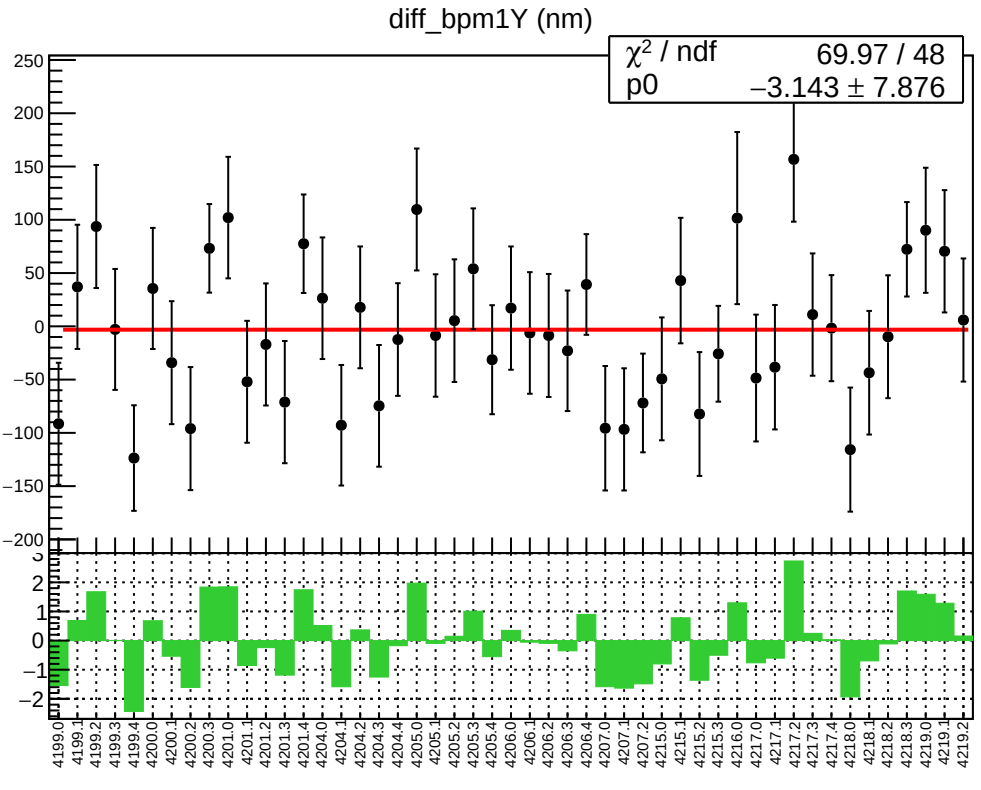

diff_bpm4aY (nm)
χ² / ndf 74.32 / 48
p0 −12.48 ± 9.31
200
100
0
−100
−200
2
1
0
−1
−2
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

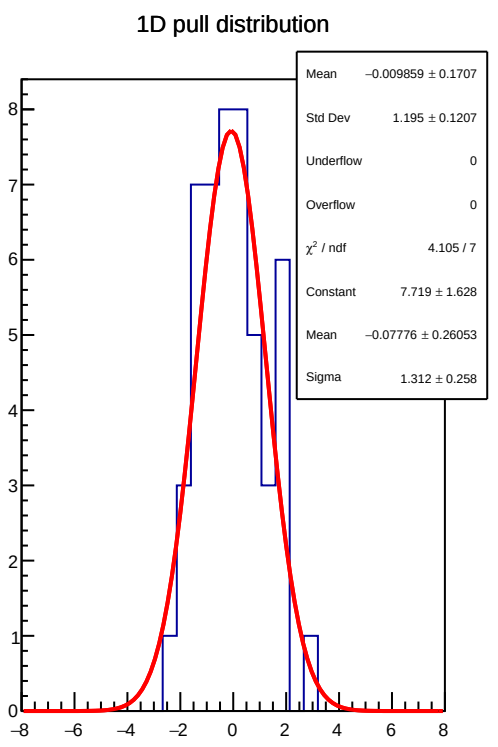

1D pull distribution
Mean −0.02629 ± 0.1759
Std Dev 1.231± 0.1244
Underflow 0
Overflow 0
χ² / ndf 6.352 / 7
Constant 6.679 ± 1.415
Mean −0.1558 ± 0.2790
Sigma 1.456 ± 0.305
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

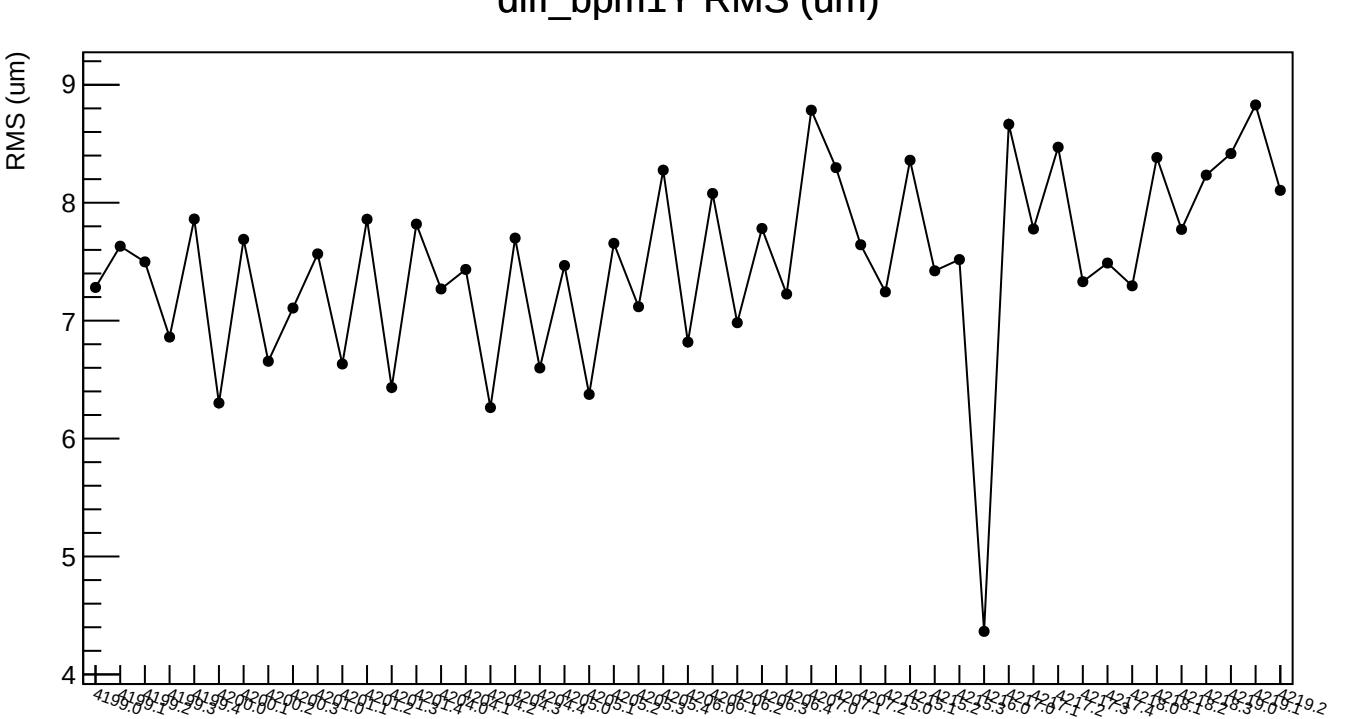

diff_bpm4aY RMS (um)
RMS (um)
11
10
9
8
7
6
5

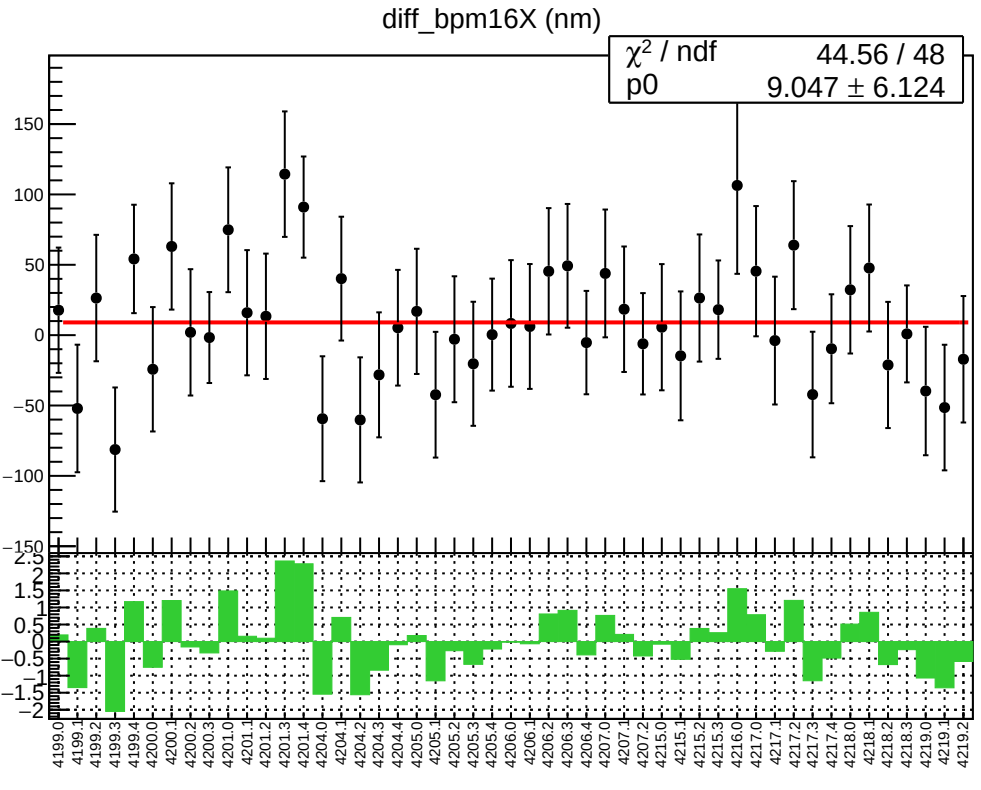

diff_bpm1X (nm)
χ² / ndf 52.15 / 48
p0 −23.72 ± 13
1D pull distribution
Mean −0.00674 ± 0.1474
Std Dev 1.032 ± 0.1042
Underflow 0
Overflow 0
χ² / ndf 3.509 / 7
Constant 8.824 ± 1.782
Mean −0.0003446 ± 0.1749600
Sigma 1.114 ± 0.171

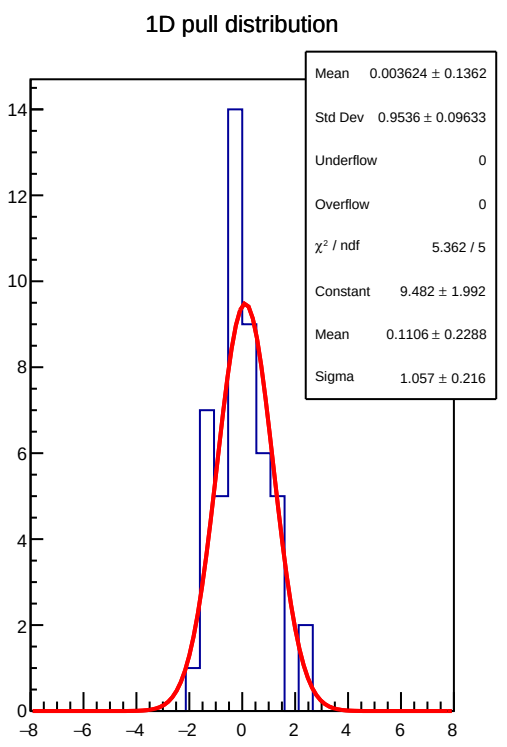

diff_bpm1X RMS (um)
RMS (um)
9.8
9.6
9.4
9.2
9
8.8
8.6
8.4
8.2
8
7.8
7.6

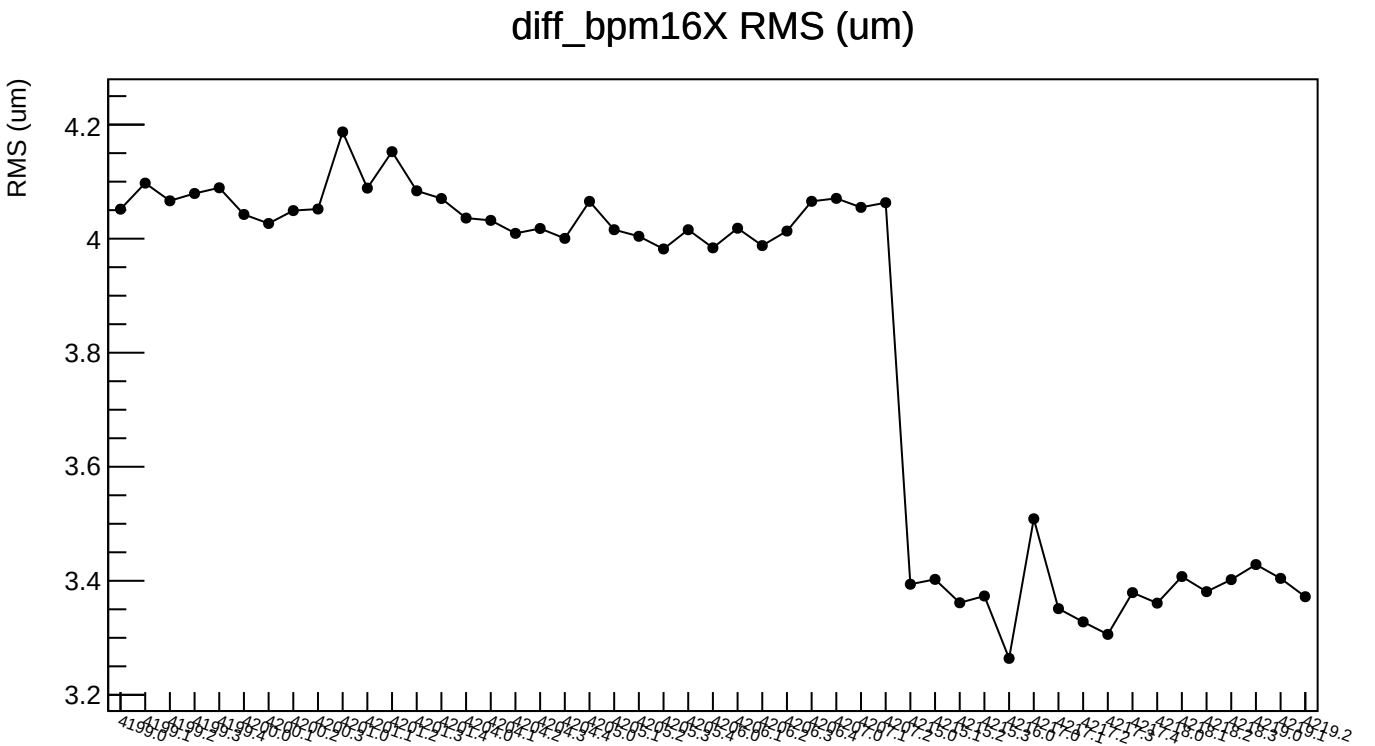

diff_bpm1Y (nm)
χ² / ndf 69.97 / 48
p0 −3.143 ± 7.876
250
200
150
100
50
0
−50
−100
−150
−200
3
2
1
0
−1
−2
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

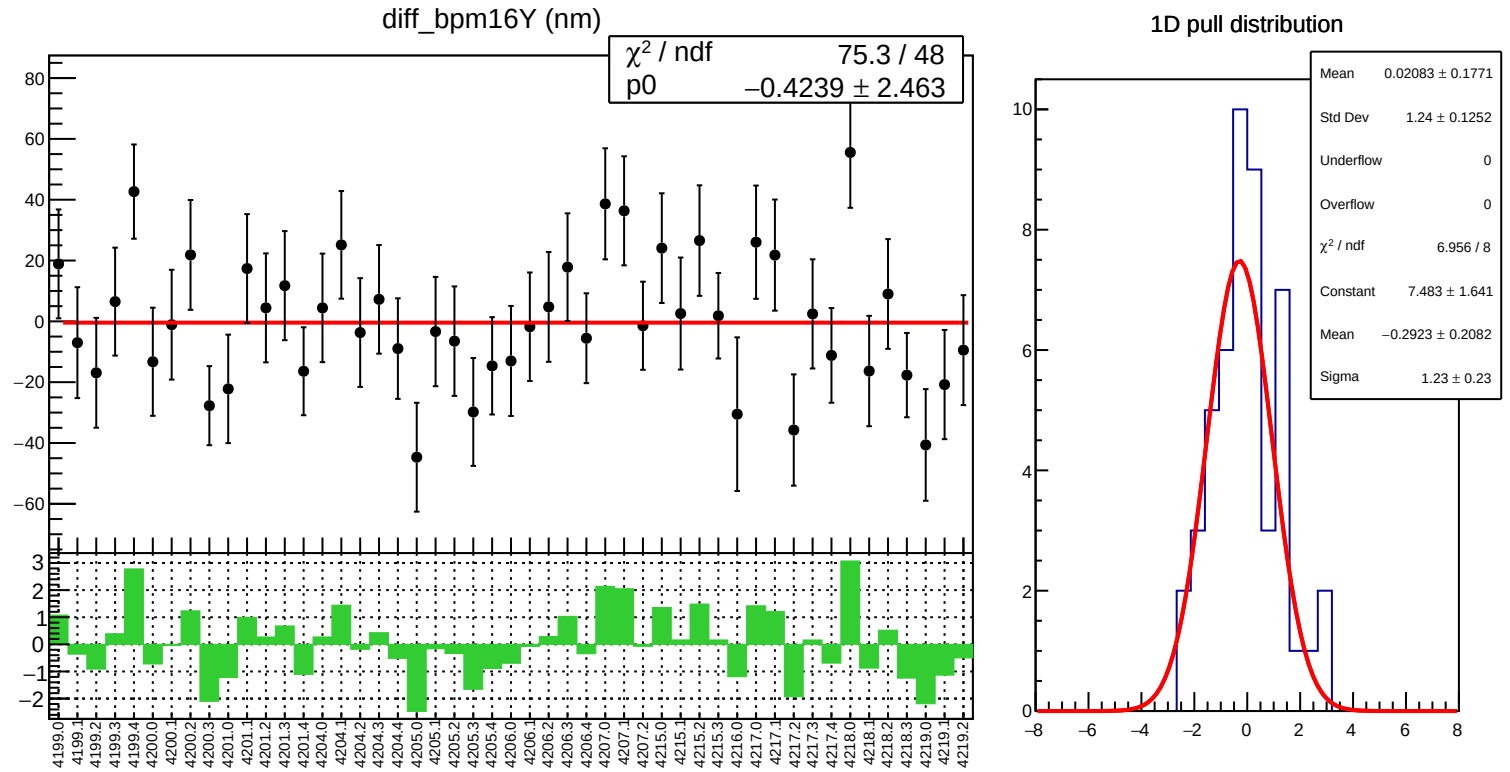

1D pull distribution
Mean −0.009859 ± 0.1707
Std Dev 1.195 ± 0.1207
Underflow 0
Overflow 0
χ² / ndf 4.105 / 7
Constant 7.719 ± 1.628
Mean −0.07776 ± 0.26053
Sigma 1.312 ± 0.258
8
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

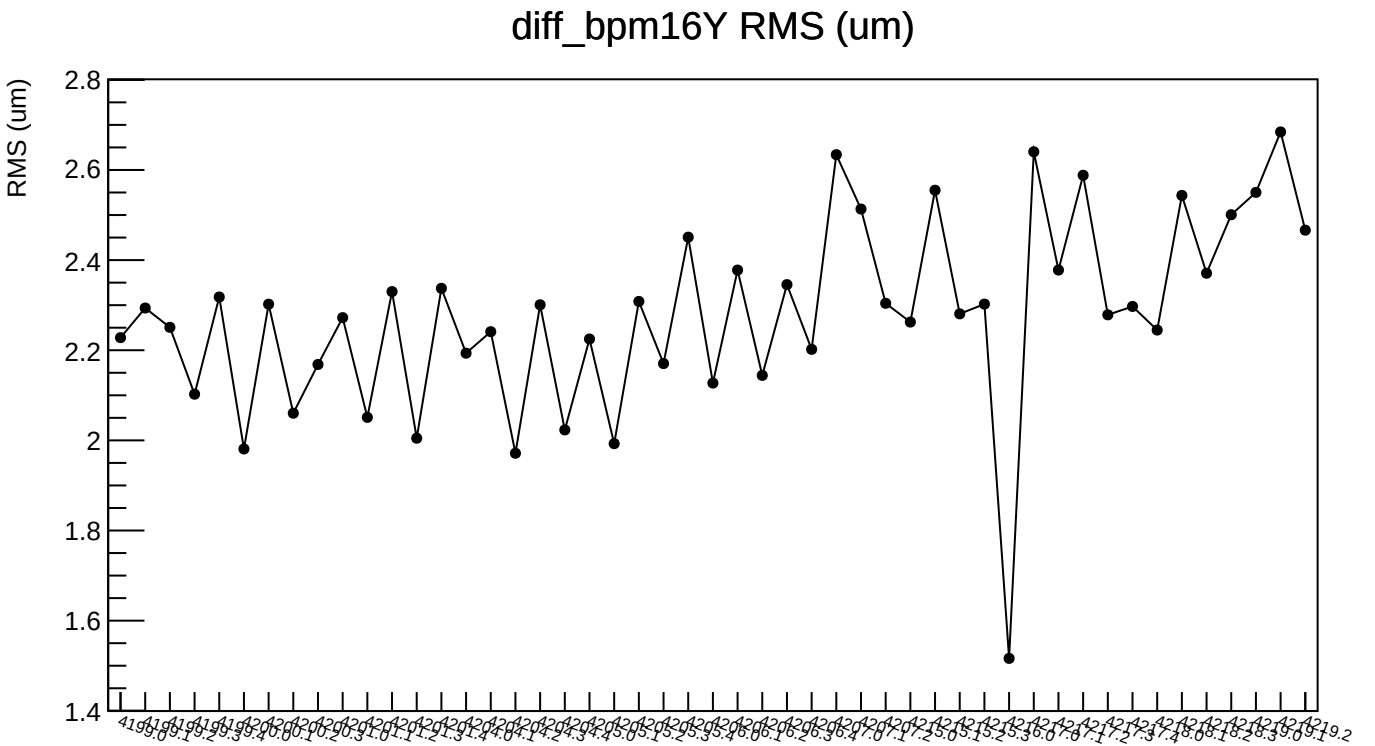

diff_bpm1Y RMS (um)
RMS (um)
9
8
7
6
5
4

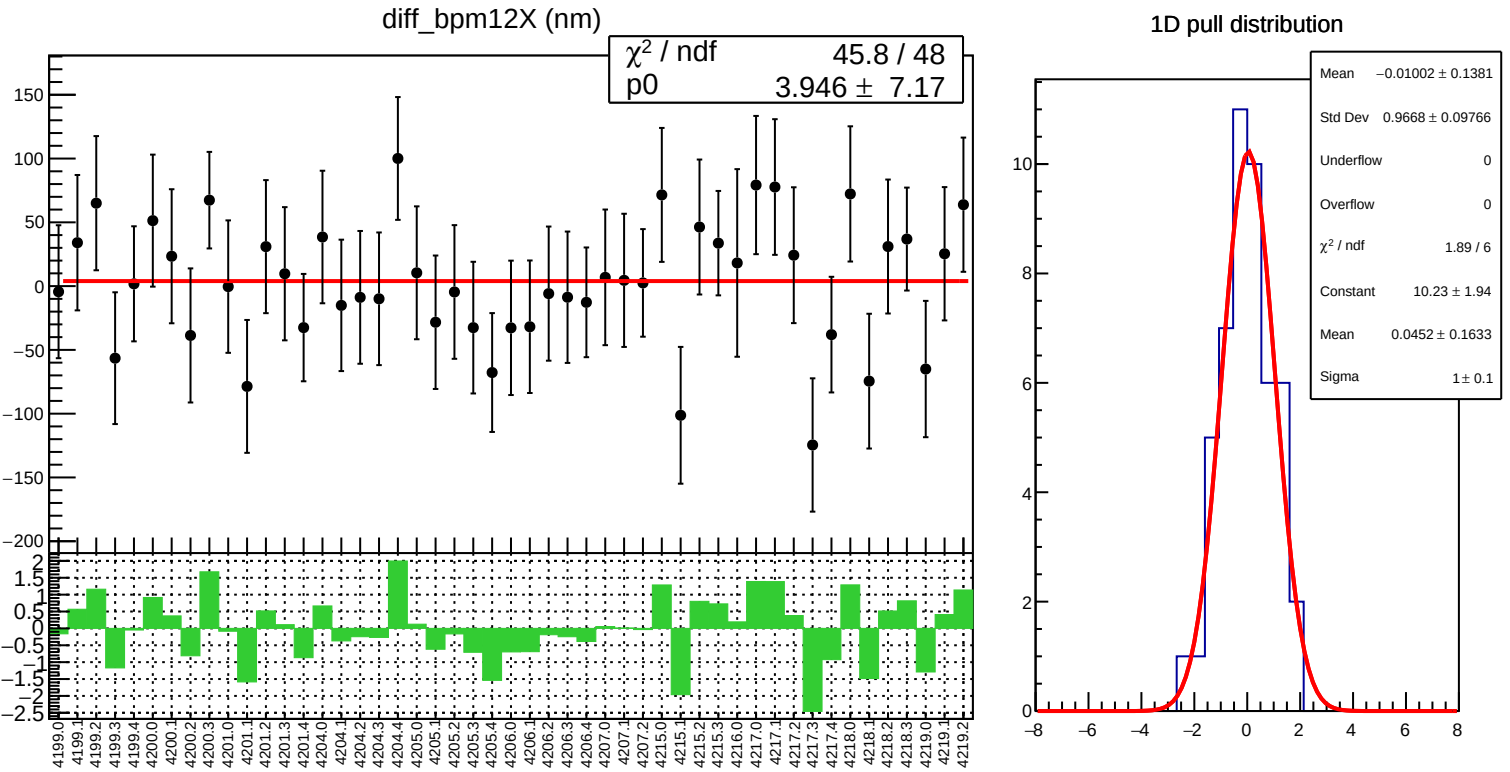

diff_bpm16X (nm)
χ² / ndf 44.56 / 48
p0 9.047 ± 6.124

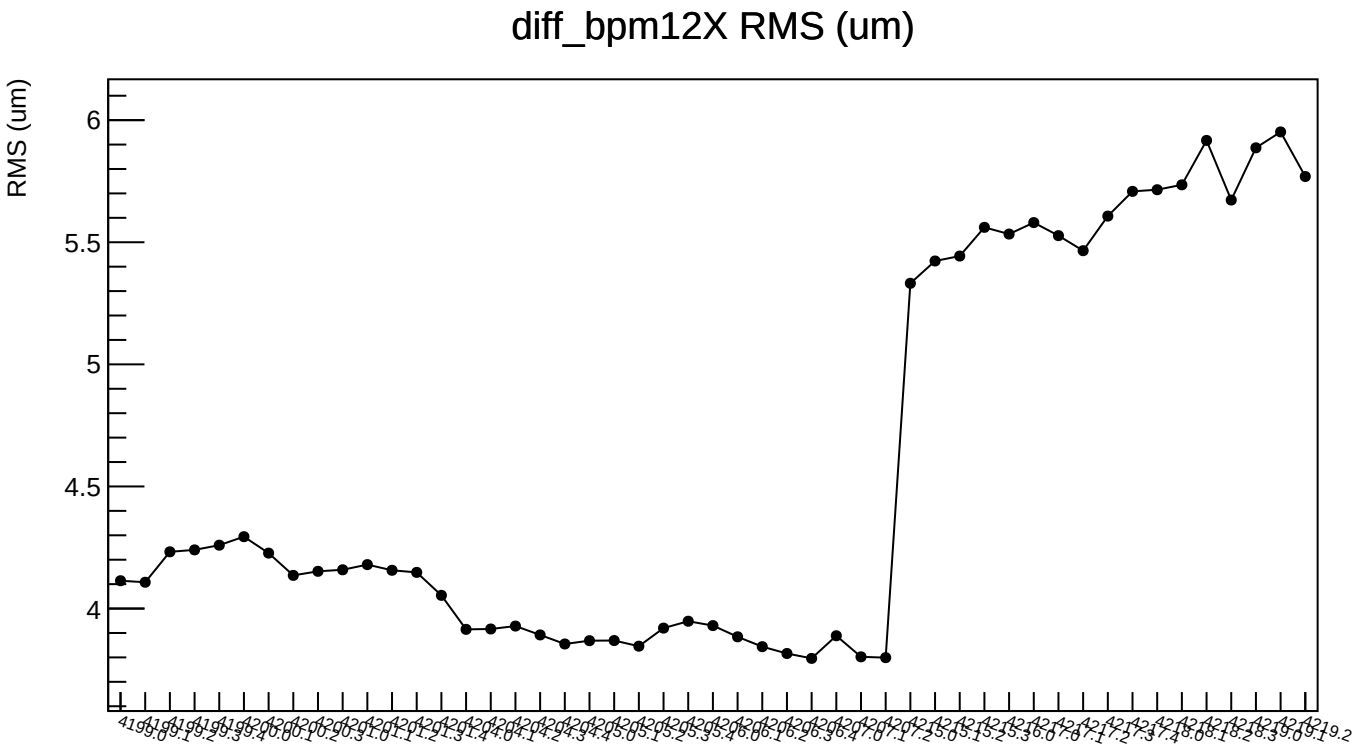

1D pull distribution
Mean 0.003624 ± 0.1362
Std Dev 0.9536 ± 0.09633
Underflow 0
Overflow 0
χ² / ndf 5.362 / 5
Constant 9.482 ± 1.992
Mean 0.1106 ± 0.2288
Sigma 1.057 ± 0.216

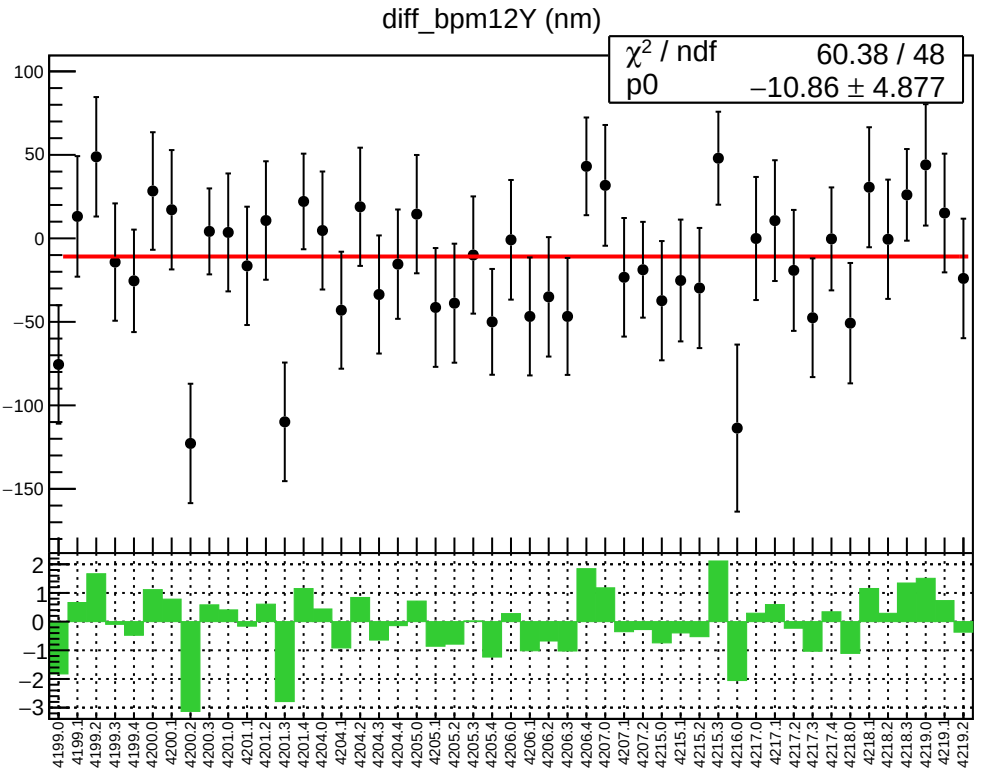

diff_bpm16X RMS (um)
RMS (um)
4.2
4
3.8
3.6
3.4
3.2

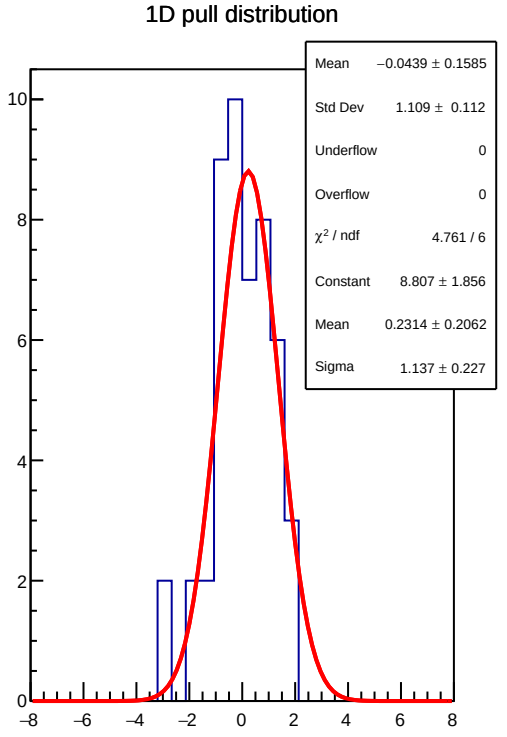

diff_bpm16Y (nm)
χ² / ndf 75.3 / 48
p0 −0.4239 ± 2.463
1D pull distribution
Mean 0.02083 ± 0.1771
Std Dev 1.24 ± 0.1252
Underflow 0
Overflow 0
χ² / ndf 6.956 / 8
Constant 7.483 ± 1.641
Mean −0.2923 ± 0.2082
Sigma 1.23 ± 0.23

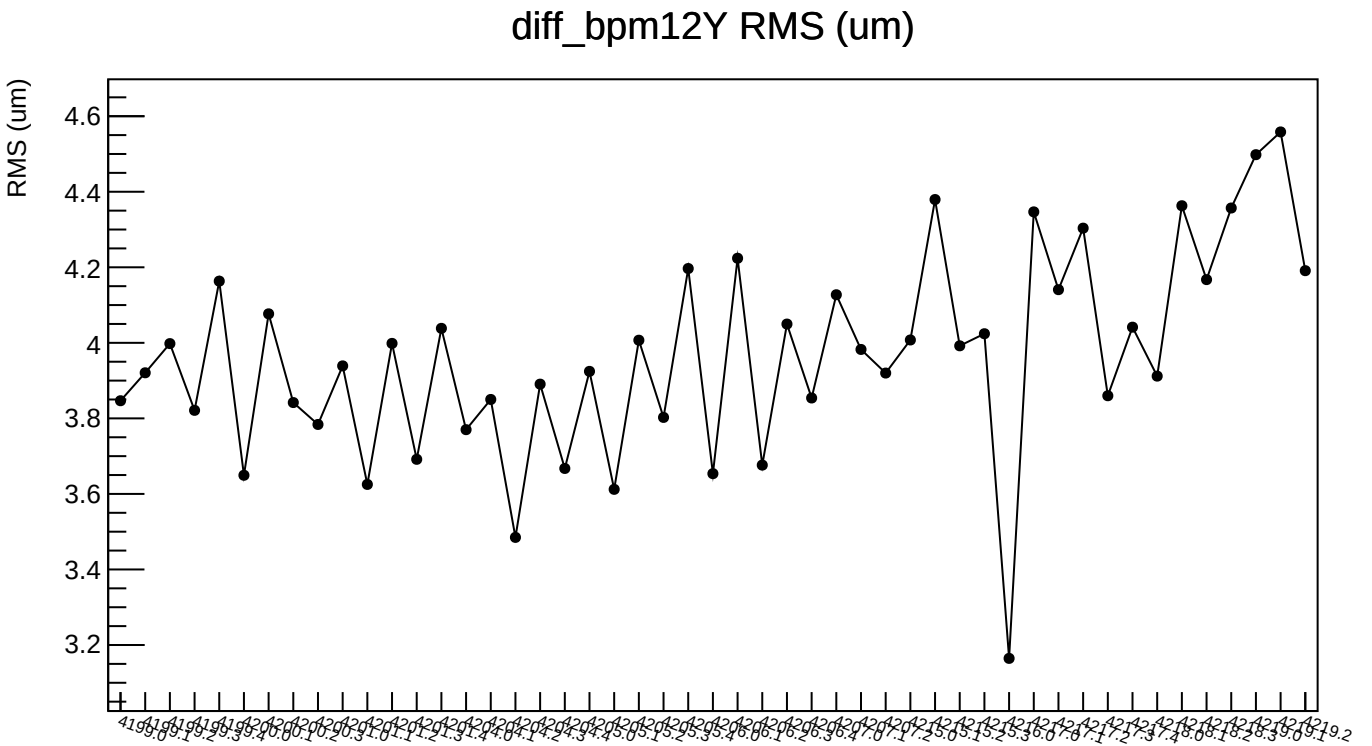

diff_bpm16Y RMS (um)
RMS (um)
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4

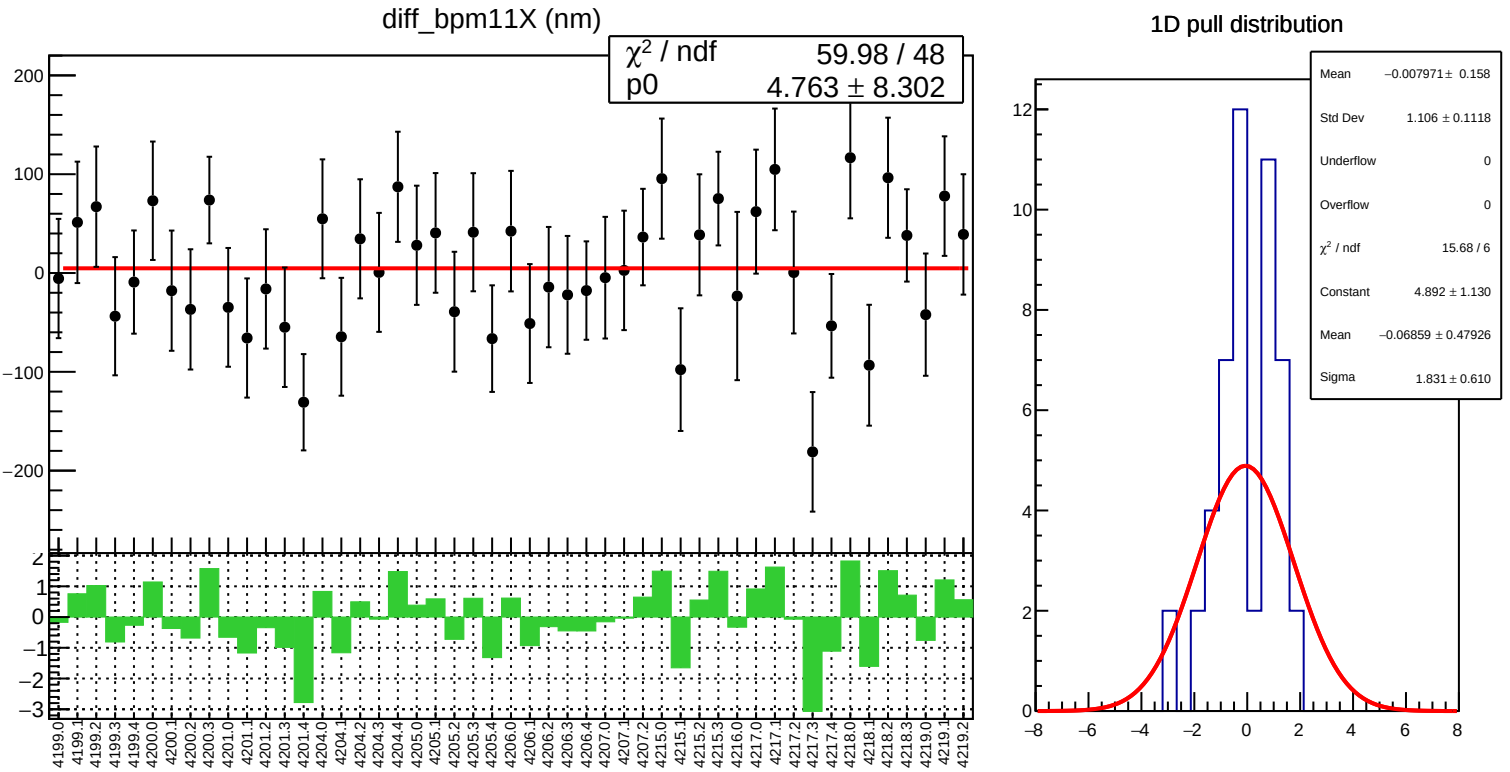

diff_bpm12X (nm)
χ² / ndf 45.8 / 48
p0 3.946 ± 7.17
1D pull distribution
Mean −0.01002 ± 0.1381
Std Dev 0.9668 ± 0.09766
Underflow 0
Overflow 0
χ² / ndf 1.89 / 6
Constant 10.23 ± 1.94
Mean 0.0452 ± 0.1633
Sigma 1 ± 0.1

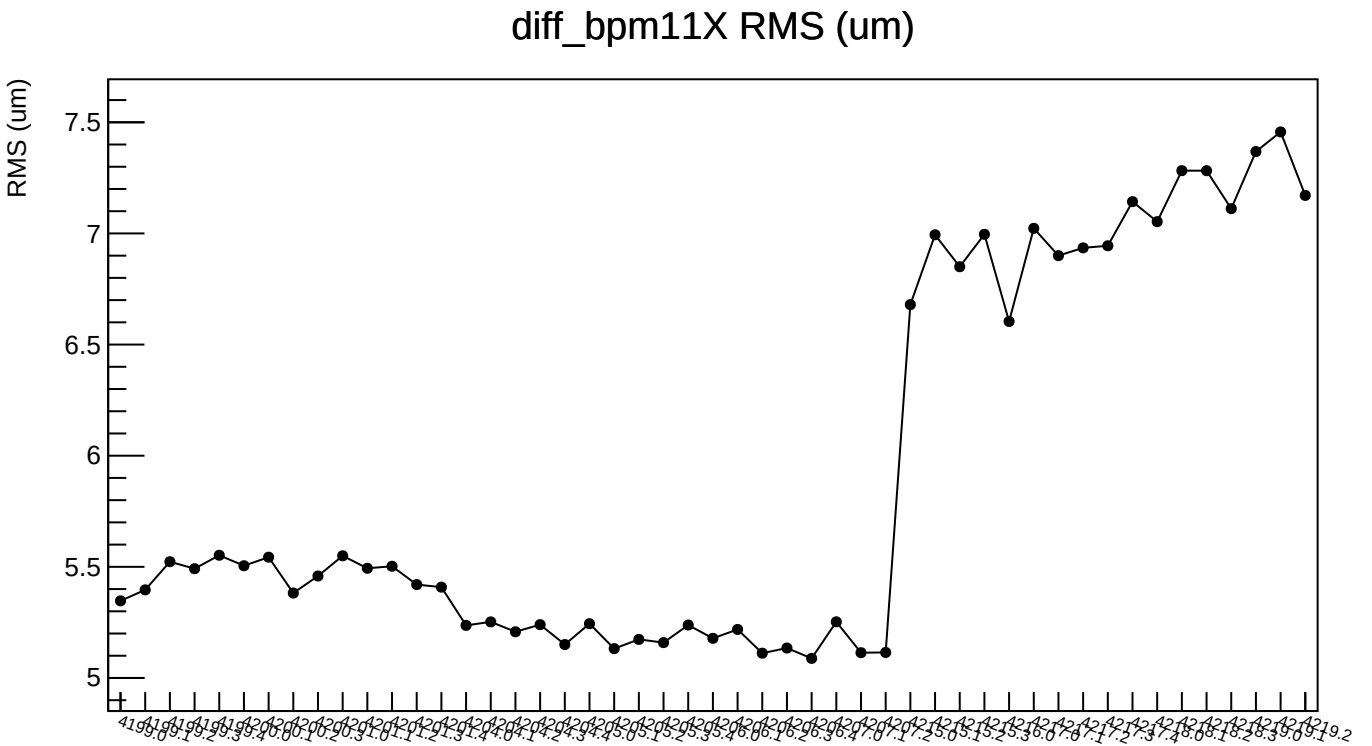

diff_bpm12X RMS (um)
RMS (um)
6
5.5
5
4.5
4

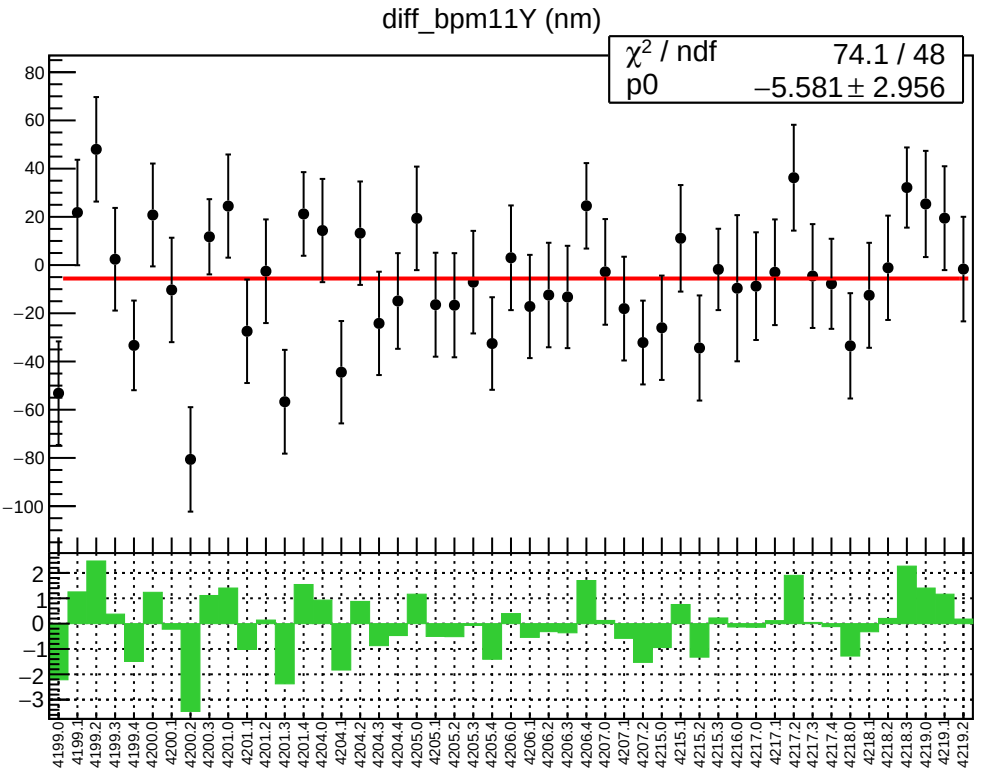

diff_bpm12Y (nm)
χ² / ndf 60.38 / 48
p0 −10.86 ± 4.877
100
50
0
−50
−100
−150
2
1
0
−1
−2
−3
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

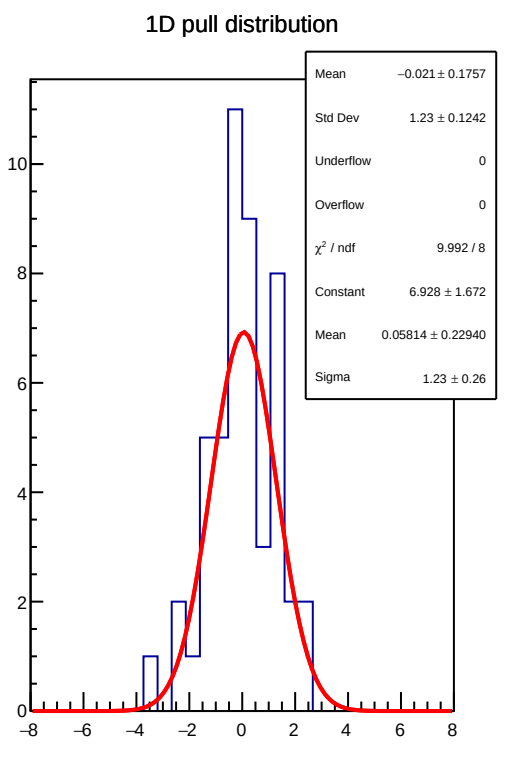

1D pull distribution
Mean −0.0439 ± 0.1585
Std Dev 1.109 ± 0.112
Underflow 0
Overflow 0
χ² / ndf 4.761 / 6
Constant 8.807 ± 1.856
Mean 0.2314 ± 0.2062
Sigma 1.137 ± 0.227
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

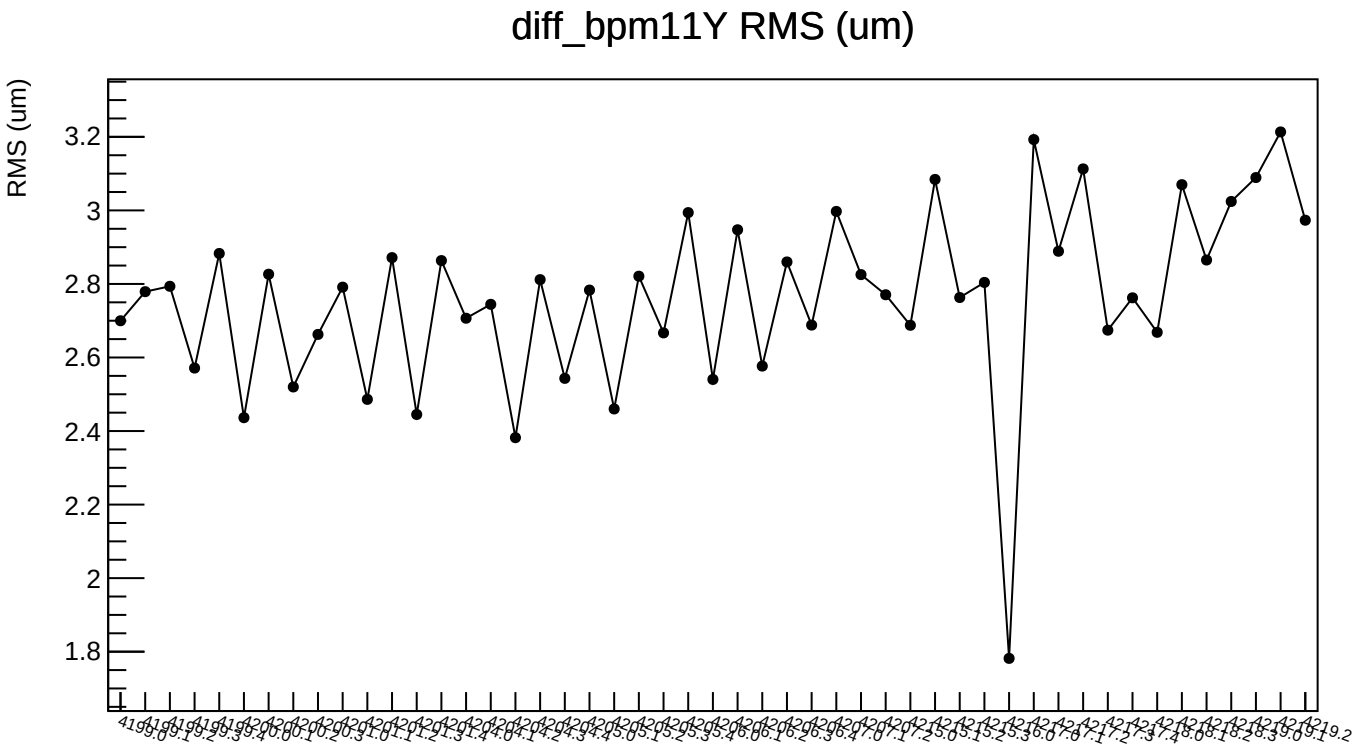

diff_bpm12Y RMS (um)
RMS (um)
4.6
4.4
4.2
4
3.8
3.6
3.4
3.2

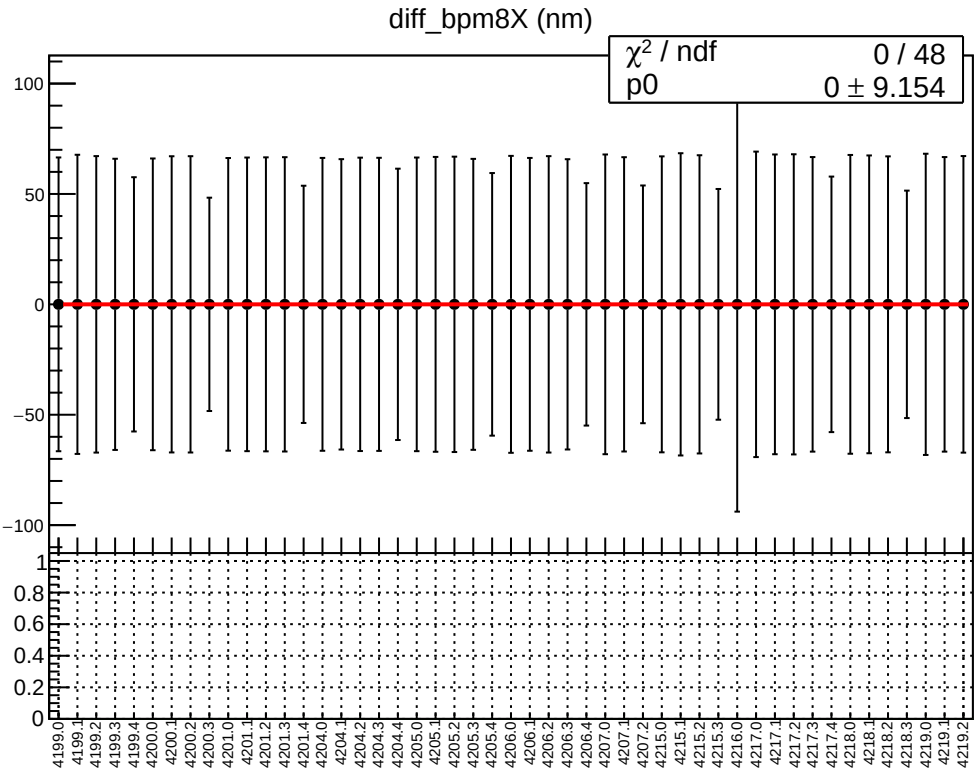

diff_bpm11X (nm)
χ² / ndf 59.98 / 48
p0 4.763 ± 8.302
1D pull distribution
Mean −0.007971 ± 0.158
Std Dev 1.106 ± 0.1118
Underflow 0
Overflow 0
χ² / ndf 15.68 / 6
Constant 4.892 ± 1.130
Mean −0.06859 ± 0.47926
Sigma 1.831 ± 0.610

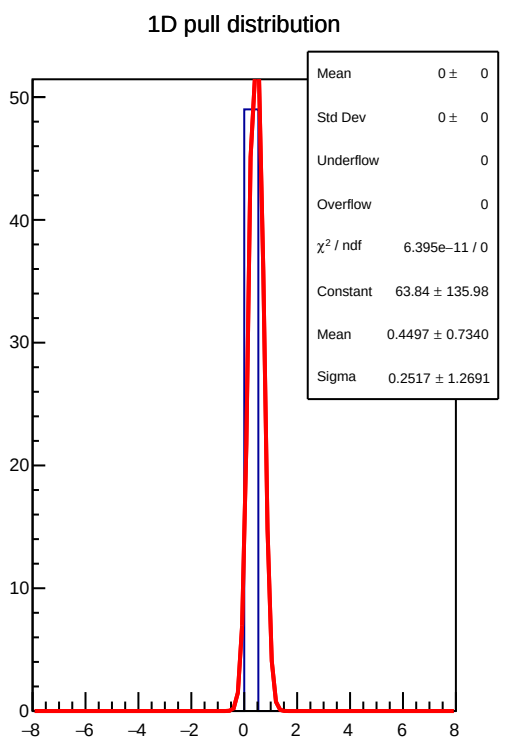

diff_bpm11X RMS (um)
RMS (um)
7.5
7
6.5
6
5.5
5

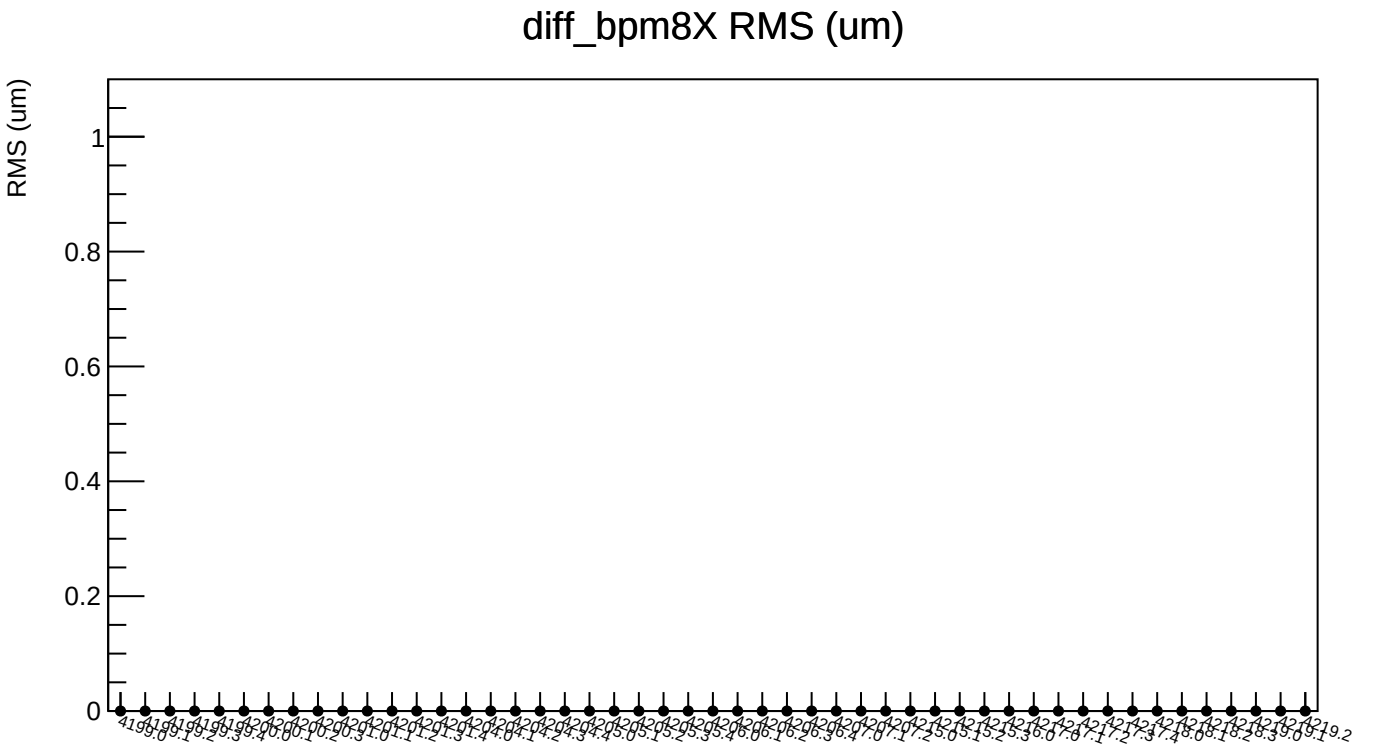

diff_bpm11Y (nm)
χ² / ndf 74.1 / 48
p0 −5.581 ± 2.956
80
60
40
20
0
−20
−40
−60
−80
−100
2
1
0
−1
−2
−3
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

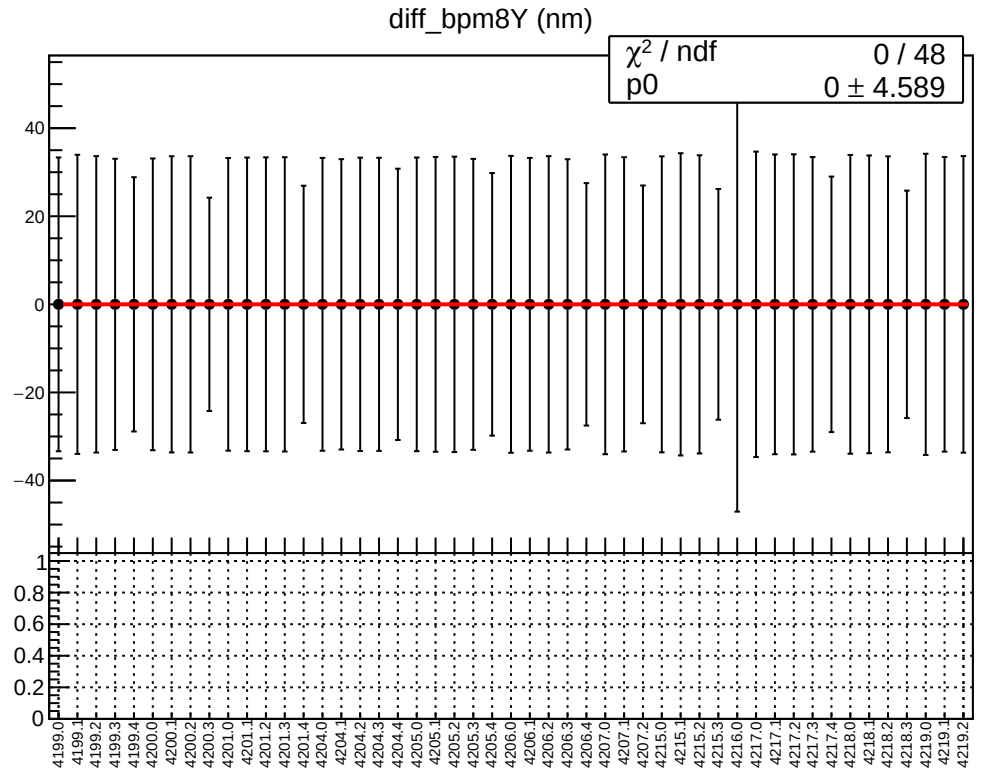

1D pull distribution
Mean −0.021 ± 0.1757
Std Dev 1.23 ± 0.1242
Underflow 0
Overflow 0
χ² / ndf 9.992 / 8
Constant 6.928 ± 1.672
Mean 0.05814 ± 0.22940
Sigma 1.23 ± 0.26
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

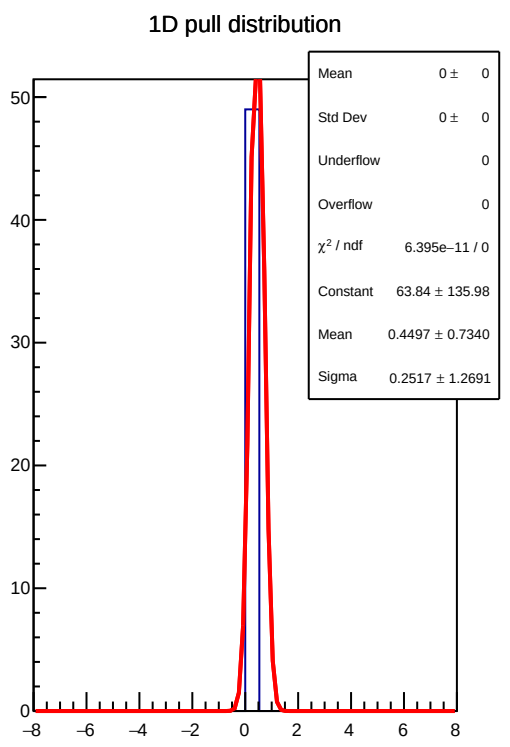

diff_bpm11Y RMS (um)
RMS (um)
3.2
3
2.8
2.6
2.4
2.2
2
1.8

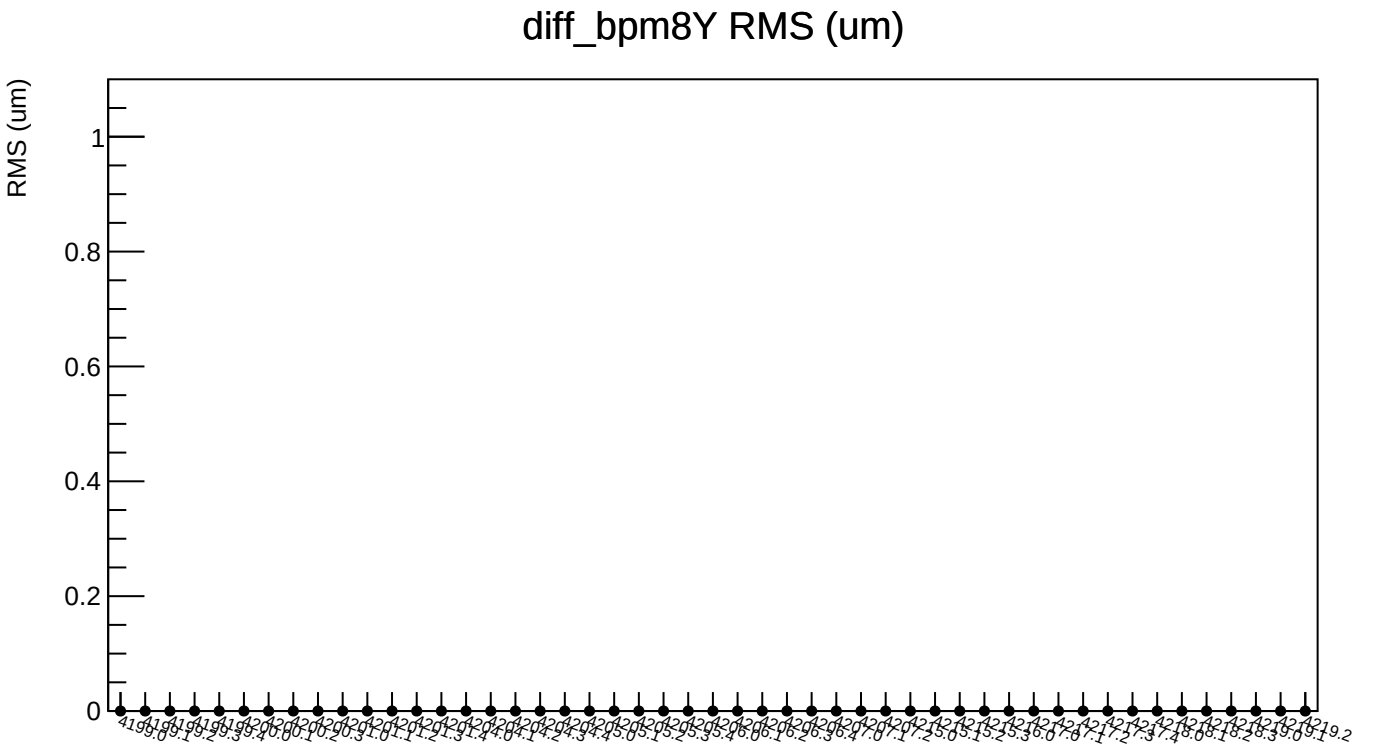

diff_bpm8X (nm)
χ² / ndf 0 / 48
p0 0 ± 9.154
100
50
0
−50
−100
1
0.8
0.6
0.4
0.2
0
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

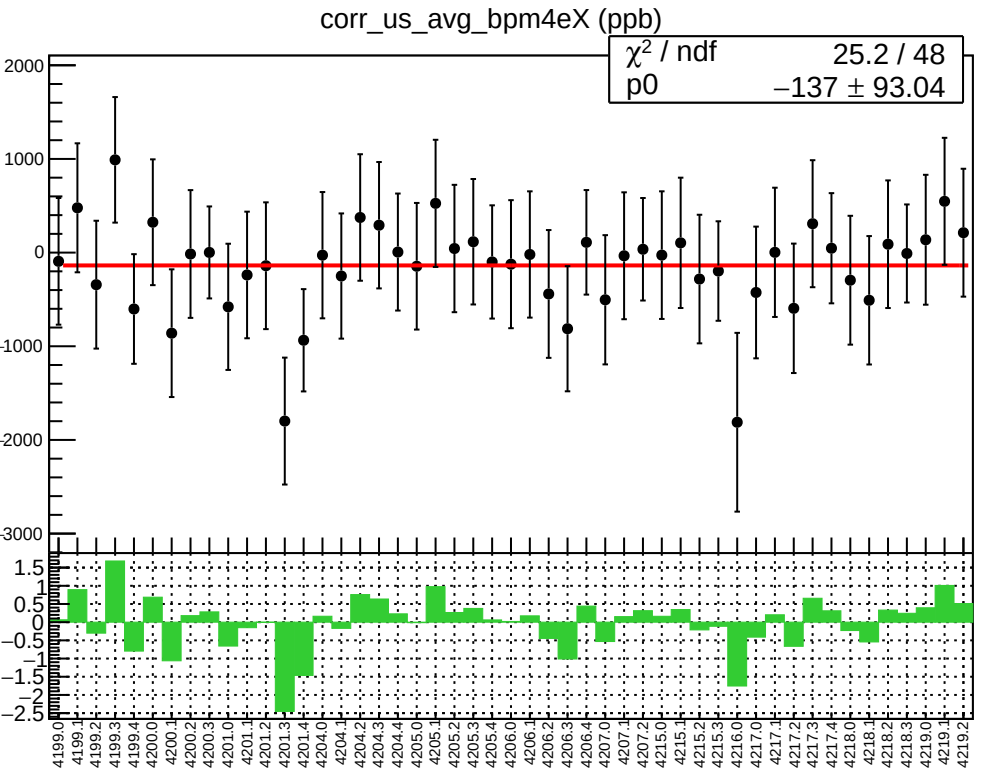

1D pull distribution
Mean 0 ± 0
Std Dev 0 ± 0
Underflow 0
Overflow 0
χ² / ndf 6.395e−11 / 0
Constant 63.84 ± 135.98
Mean 0.4497 ± 0.7340
Sigma 0.2517 ± 1.2691
50
40
30
20
10
0
−8
−6
−4
−2
0
2
4
6
8

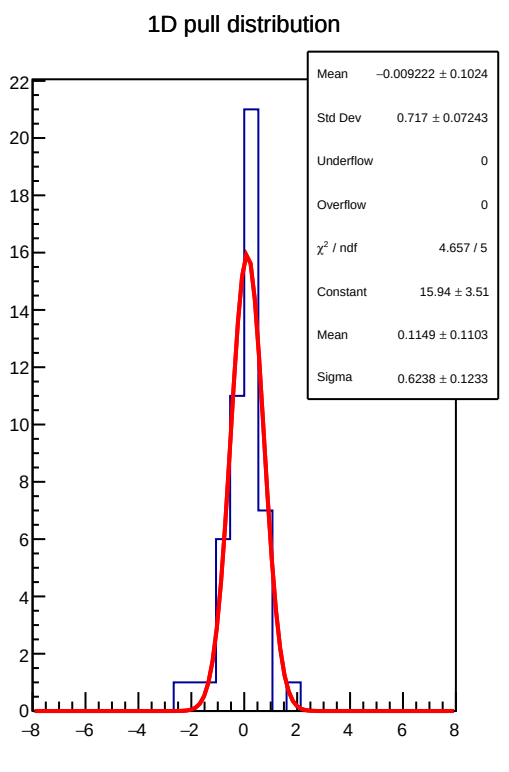

diff_bpm8X RMS (um)
RMS (um)
1
0.8
0.6
0.4
0.2
0

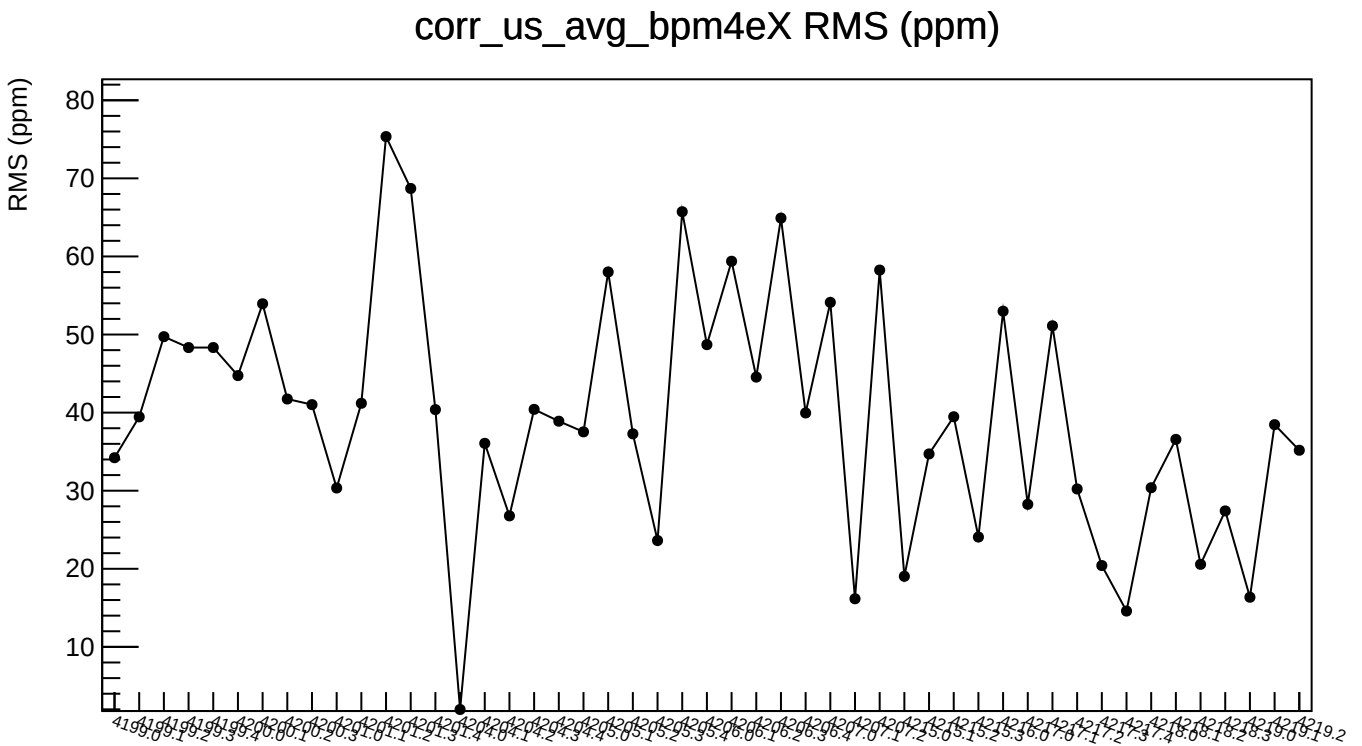

diff_bpm8Y (nm)
χ² / ndf 0 / 48
p0 0 ± 4.589
40
20
0
−20
−40
1
0.8
0.6
0.4
0.2
0
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

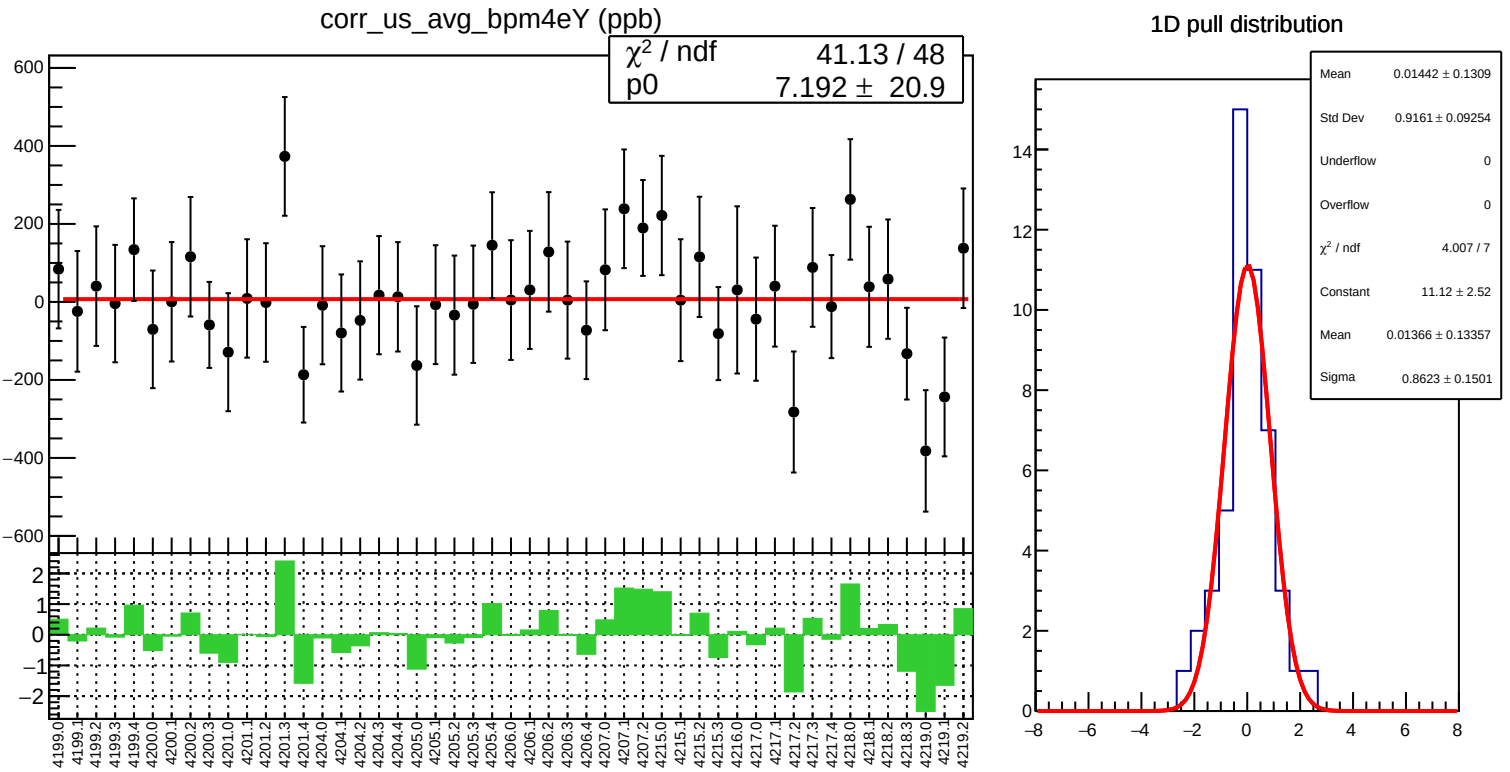

1D pull distribution
Mean 0 ± 0
Std Dev 0 ± 0
Underflow 0
Overflow 0
χ² / ndf 6.395e−11 / 0
Constant 63.84 ± 135.98
Mean 0.4497 ± 0.7340
Sigma 0.2517 ± 1.2691
50
40
30
20
10
0
−8
−6
−4
−2
0
2
4
6
8

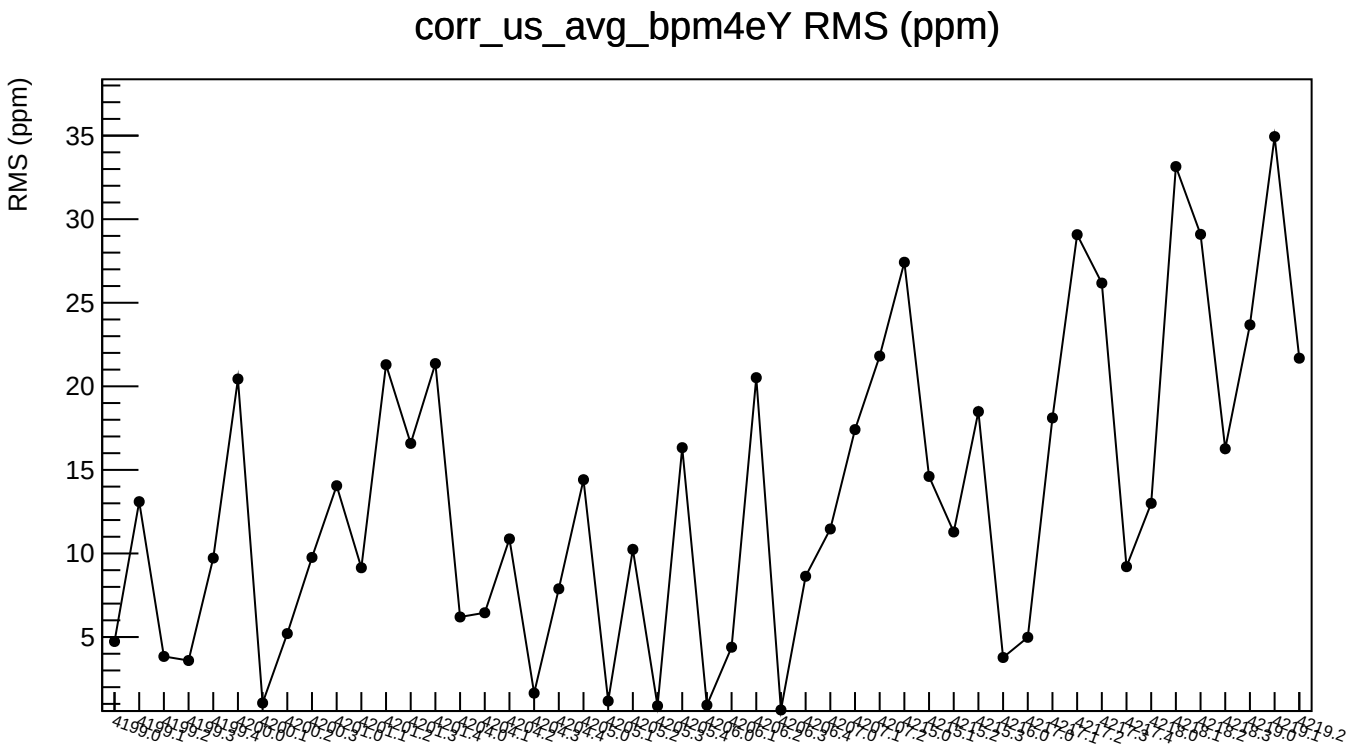

diff_bpm8Y RMS (um)
RMS (um)
1
0.8
0.6
0.4
0.2
0

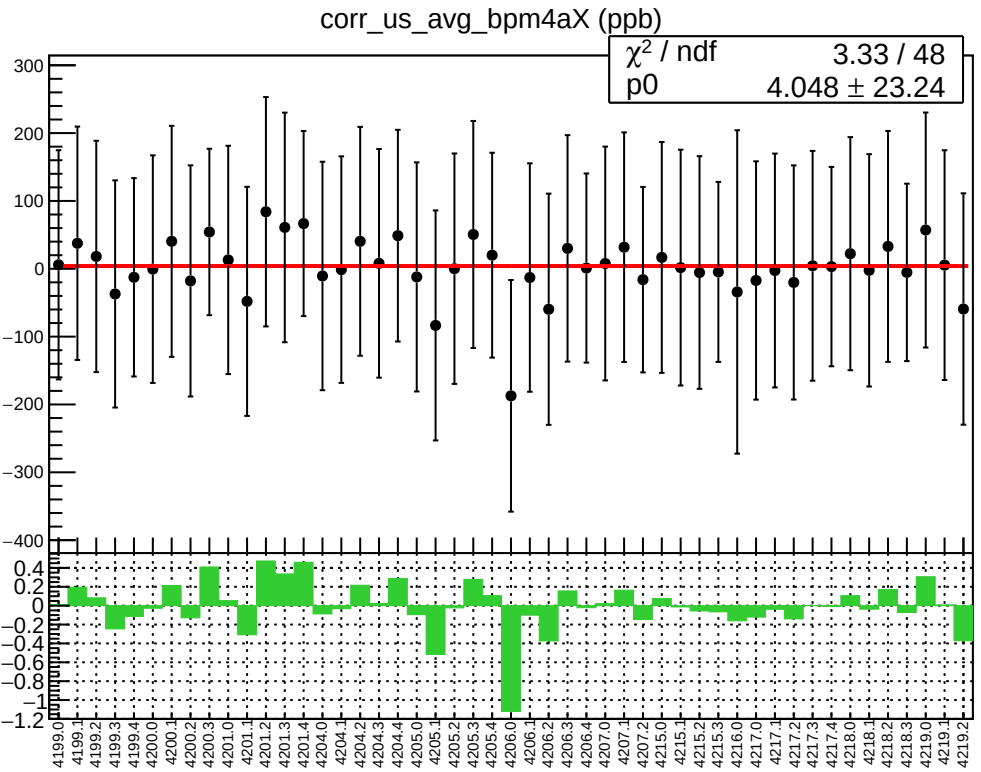

corr_us_avg_bpm4eX (ppb)
χ² / ndf 25.2 / 48
p0 −137 ± 93.04
2000
1000
0
-1000
-2000
-3000
1.5
1
0.5
0
−0.5
−1
−1.5
−2
−2.5
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

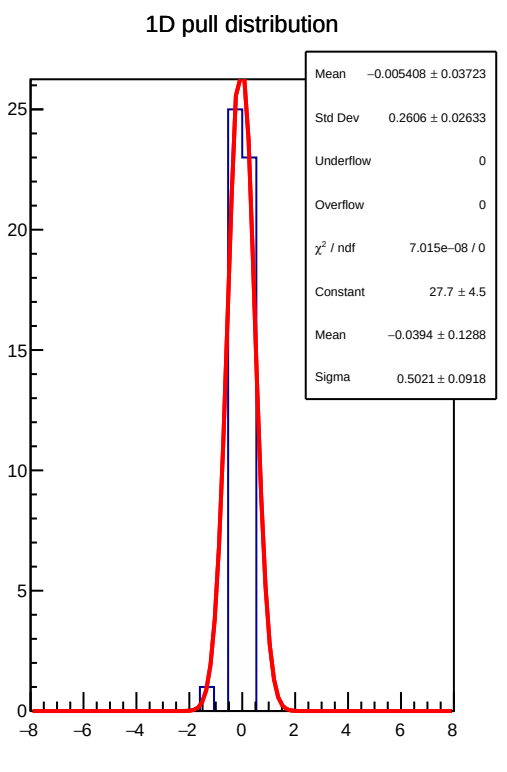

1D pull distribution
Mean −0.009222 ± 0.1024
Std Dev 0.717 ± 0.07243
Underflow 0
Overflow 0
χ² / ndf 4.657 / 5
Constant 15.94 ± 3.51
Mean 0.1149 ± 0.1103
Sigma 0.6238 ± 0.1233
22
20
18
16
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

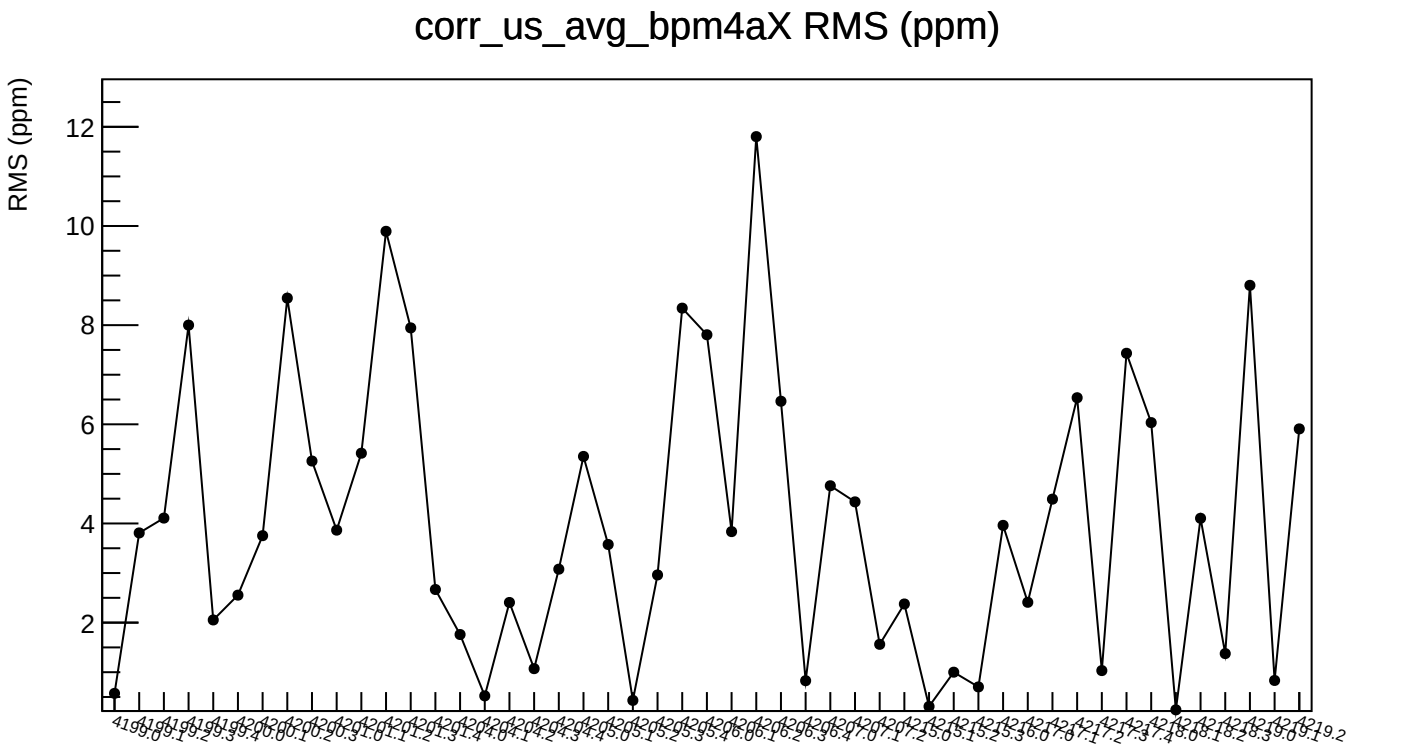

corr_us_avg_bpm4eX RMS (ppm)
RMS (ppm)
80
70
60
50
40
30
20
10

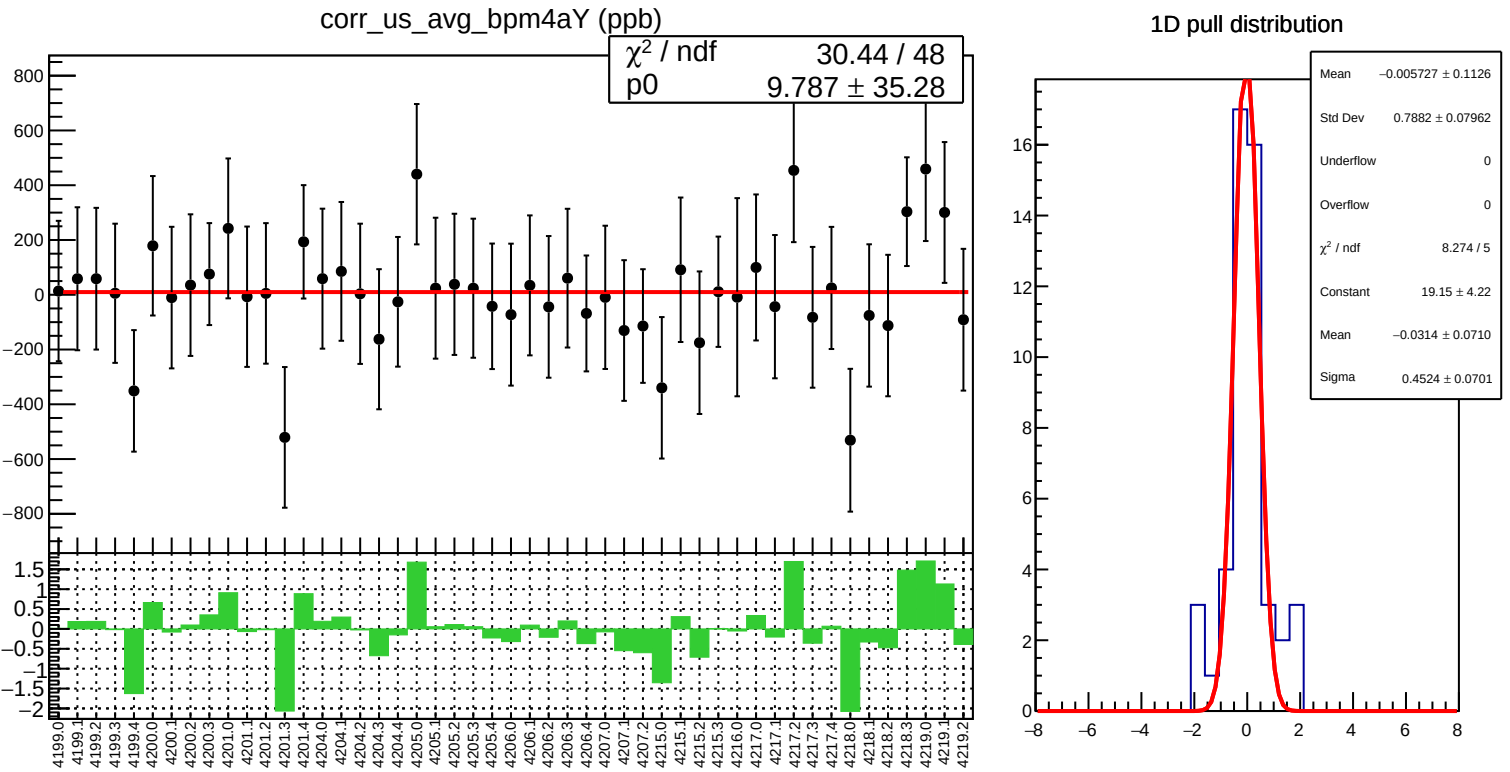

corr_us_avg_bpm4eY (ppb)
χ² / ndf 41.13 / 48
p0 7.192 ± 20.9
1D pull distribution
Mean 0.01442 ± 0.1309
Std Dev 0.9161 ± 0.09254
Underflow 0
Overflow 0
χ² / ndf 4.007 / 7
Constant 11.12 ± 2.52
Mean 0.01366 ± 0.13357
Sigma 0.8623 ± 0.1501

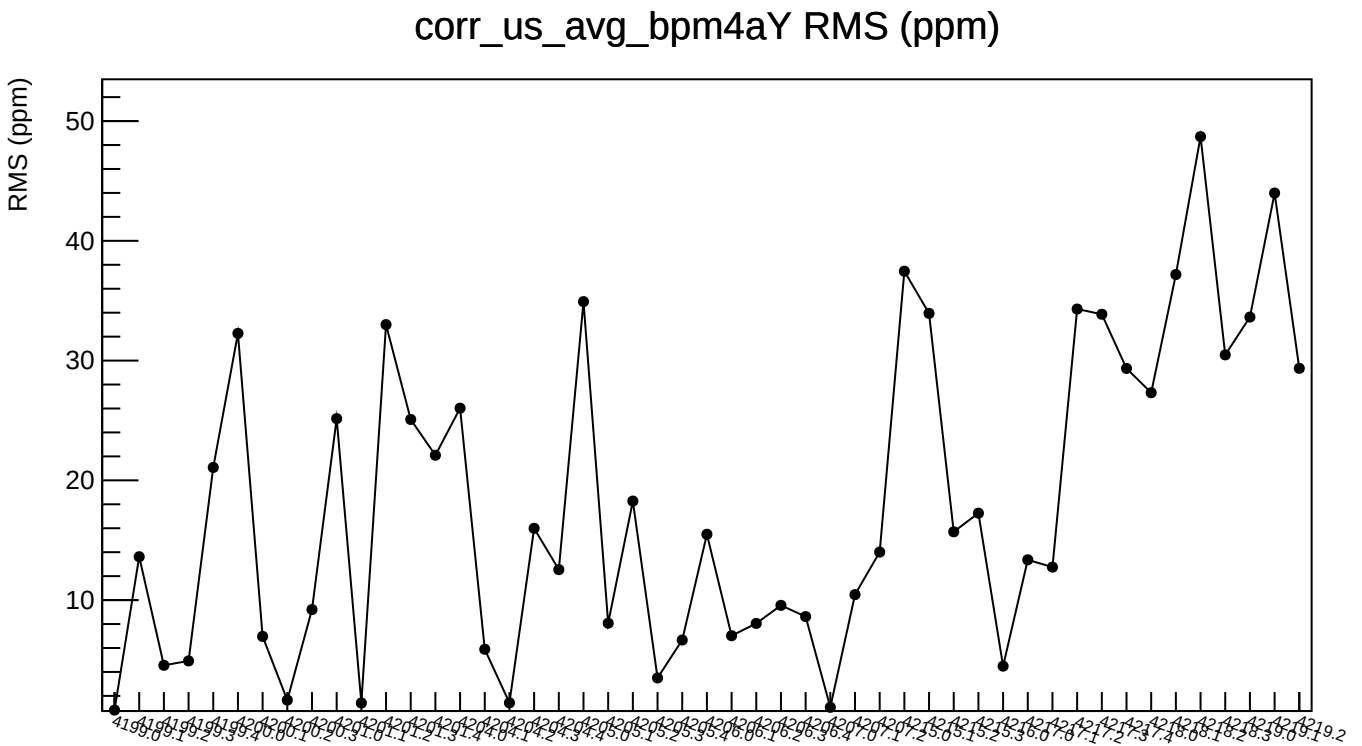

corr_us_avg_bpm4eY RMS (ppm)
RMS (ppm)
35
30
25
20
15
10
5

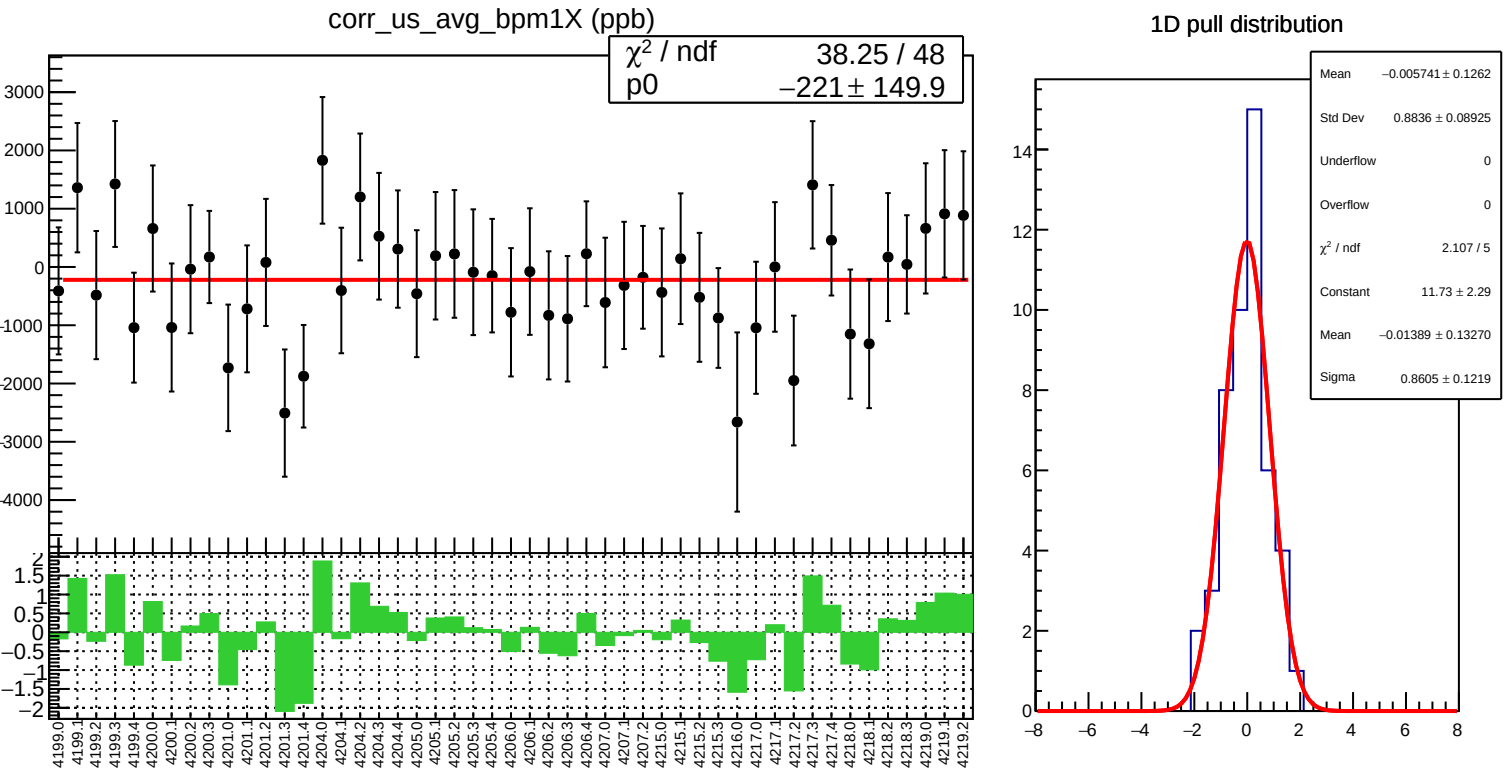

corr_us_avg_bpm4aX (ppb)
χ² / ndf 3.33 / 48
p0 4.048 ± 23.24

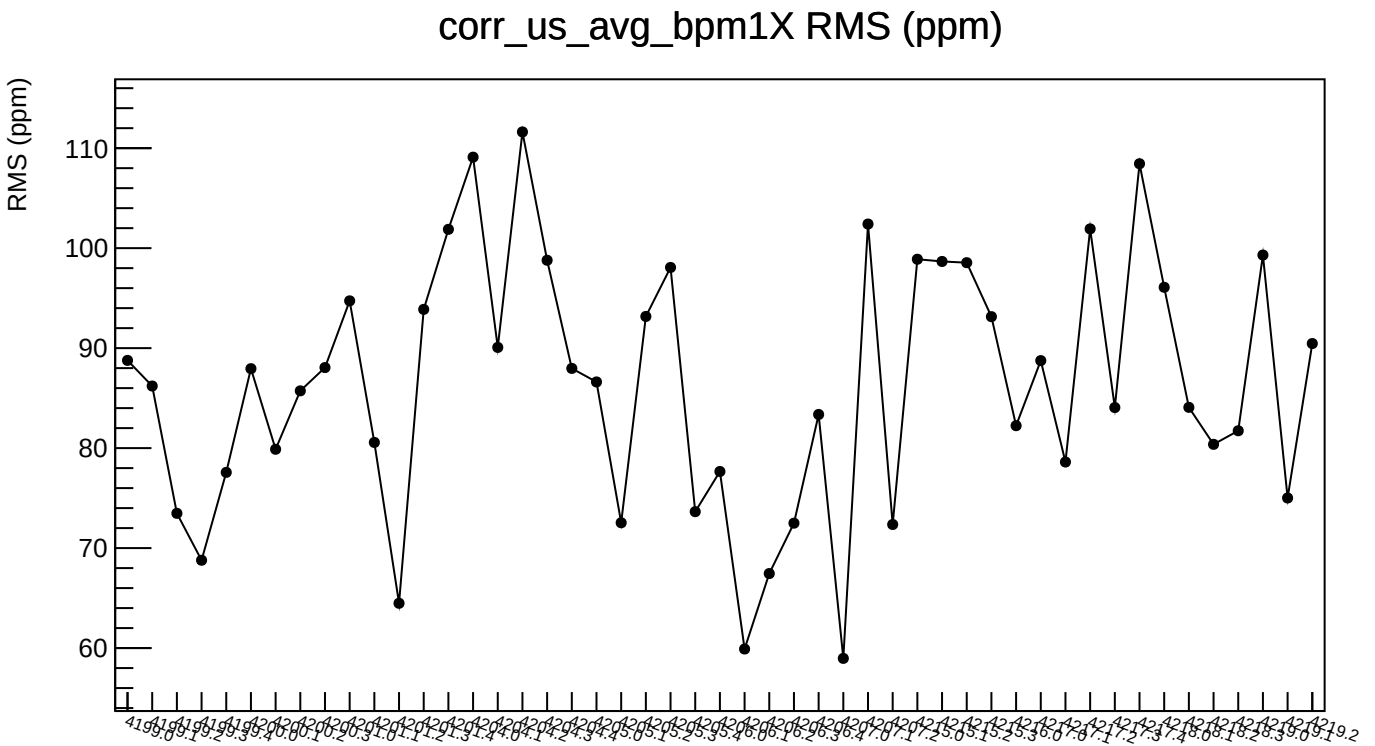

1D pull distribution
Mean −0.005408 ± 0.03723
Std Dev 0.2606 ± 0.02633
Underflow 0
Overflow 0
χ² / ndf 7.015e−08 / 0
Constant 27.7 ± 4.5
Mean −0.0394 ± 0.1288
Sigma 0.5021 ± 0.0918

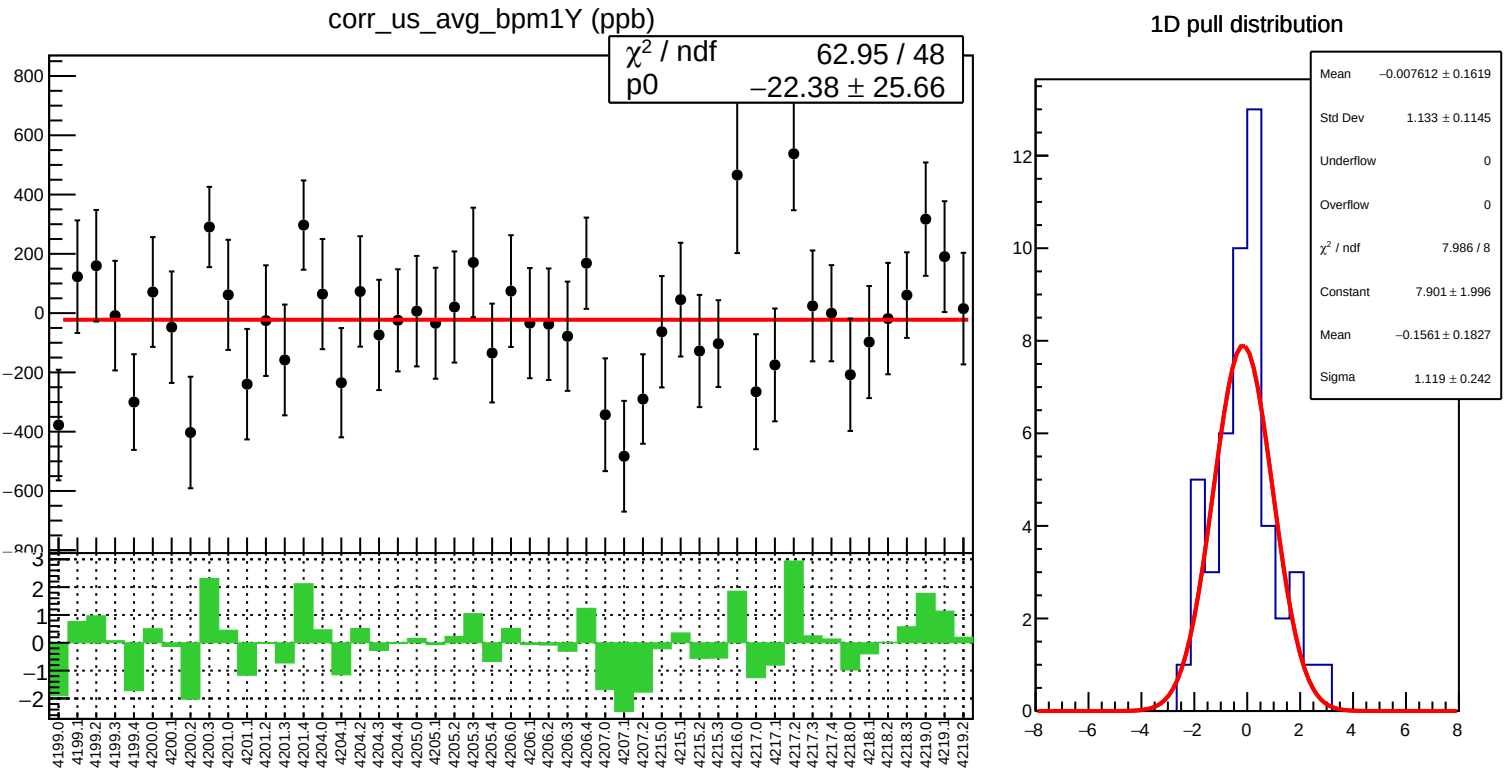

corr_us_avg_bpm4aX RMS (ppm)
RMS (ppm)
12
10
8
6
4
2

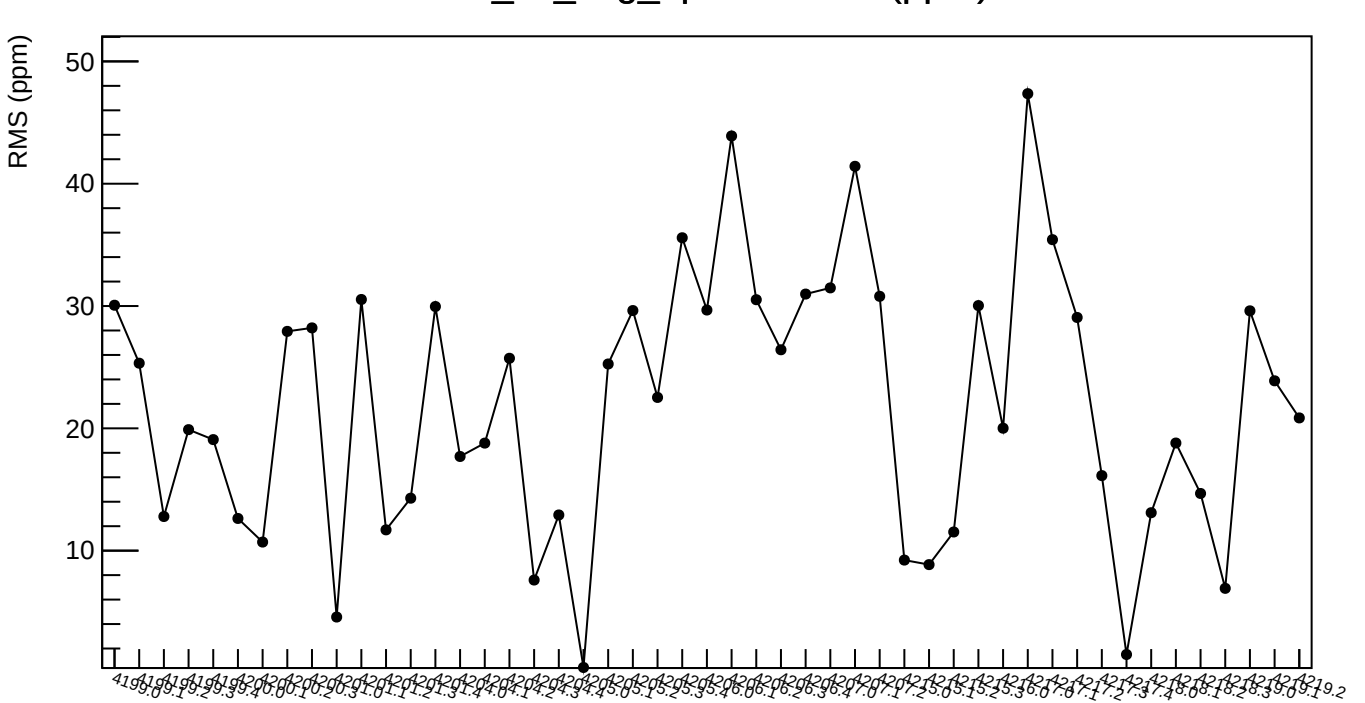

corr_us_avg_bpm4aY (ppb)
χ² / ndf 30.44 / 48
p0 9.787 ± 35.28
1D pull distribution
Mean −0.005727 ± 0.1126
Std Dev 0.7882 ± 0.07962
Underflow 0
Overflow 0
χ² / ndf 8.274 / 5
Constant 19.15 ± 4.22
Mean −0.0314 ± 0.0710
Sigma 0.4524 ± 0.0701

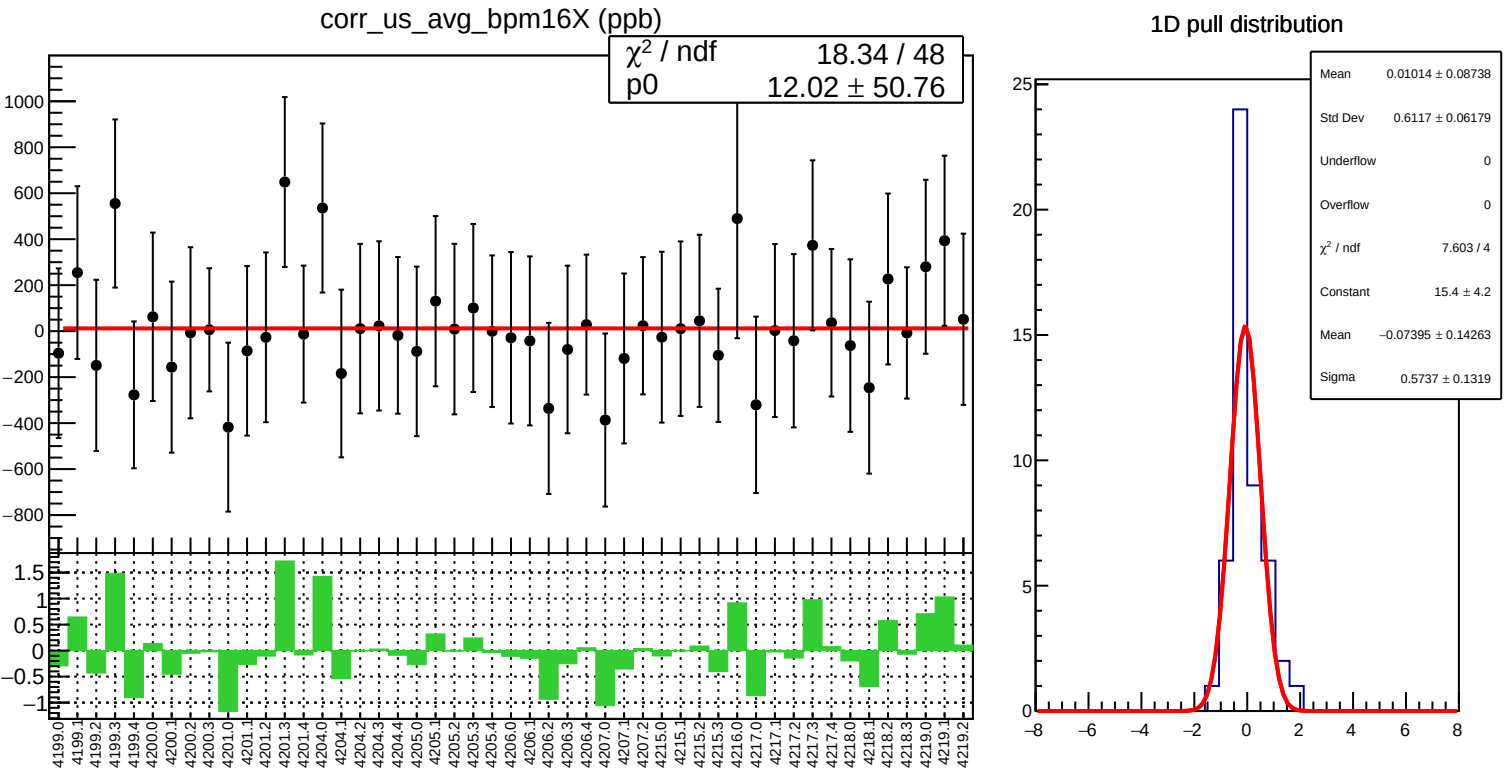

corr_us_avg_bpm4aY RMS (ppm)
RMS (ppm)
50
40
30
20
10

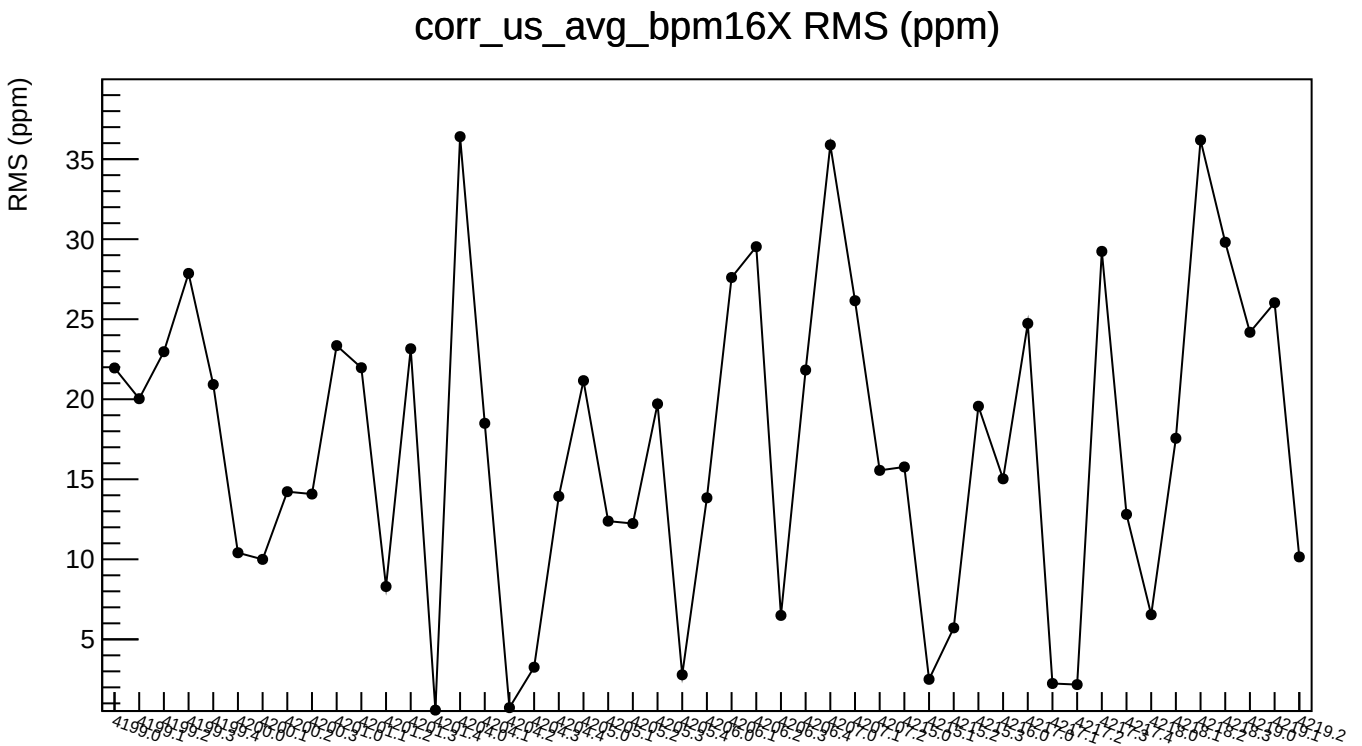

corr_us_avg_bpm1X (ppb)
χ² / ndf 38.25 / 48
p0 −221 ± 149.9
1D pull distribution
Mean −0.005741 ± 0.1262
Std Dev 0.8836 ± 0.08925
Underflow 0
Overflow 0
χ² / ndf 2.107 / 5
Constant 11.73 ± 2.29
Mean −0.01389 ± 0.13270
Sigma 0.8605 ± 0.1219

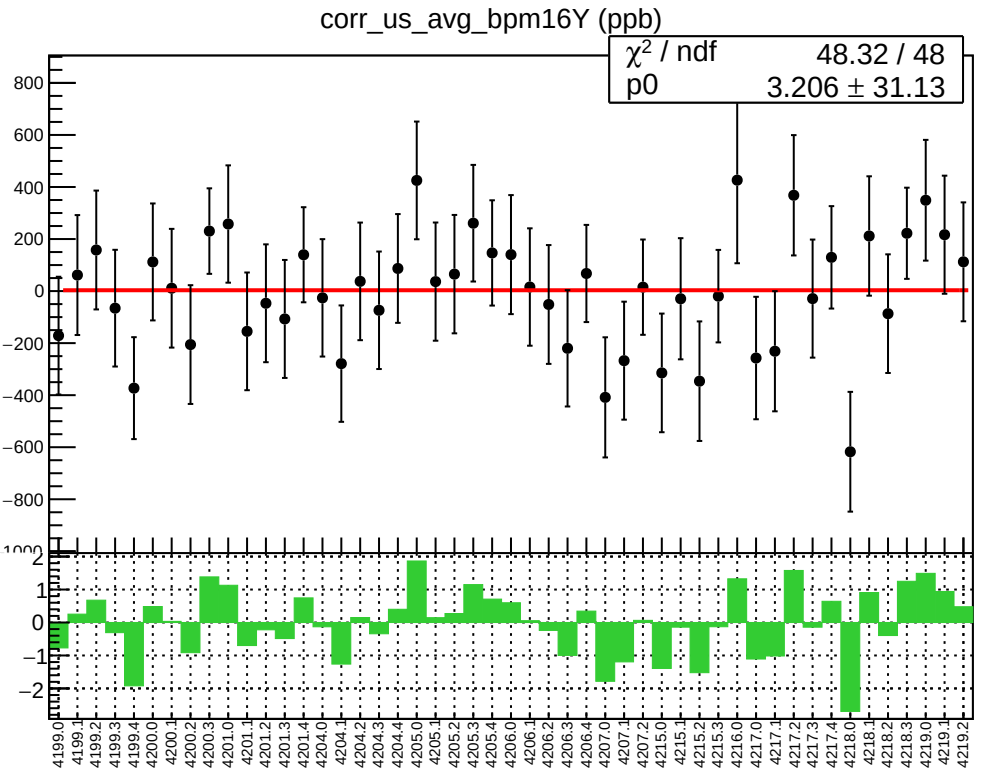

corr_us_avg_bpm1X RMS (ppm)
RMS (ppm)
110
100
90
80
70
60

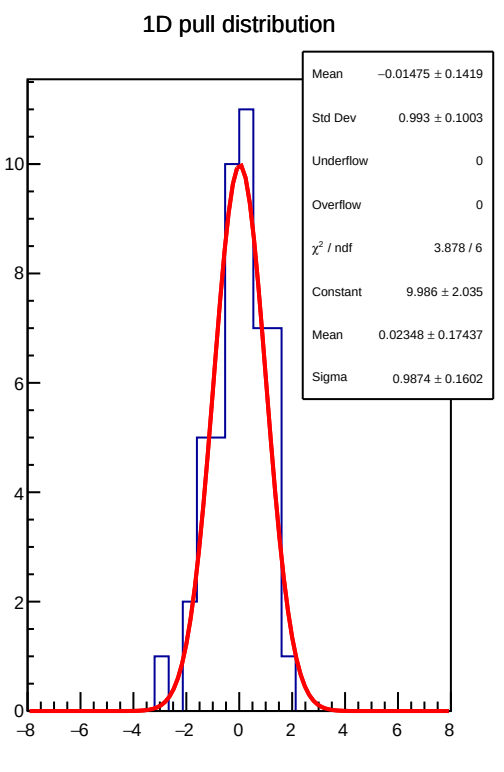

corr_us_avg_bpm1Y (ppb)
χ² / ndf 62.95 / 48
p0 −22.38 ± 25.66
1D pull distribution
Mean −0.007612 ± 0.1619
Std Dev 1.133 ± 0.1145
Underflow 0
Overflow 0
χ² / ndf 7.986 / 8
Constant 7.901 ± 1.996
Mean −0.1561 ± 0.1827
Sigma 1.119 ± 0.242

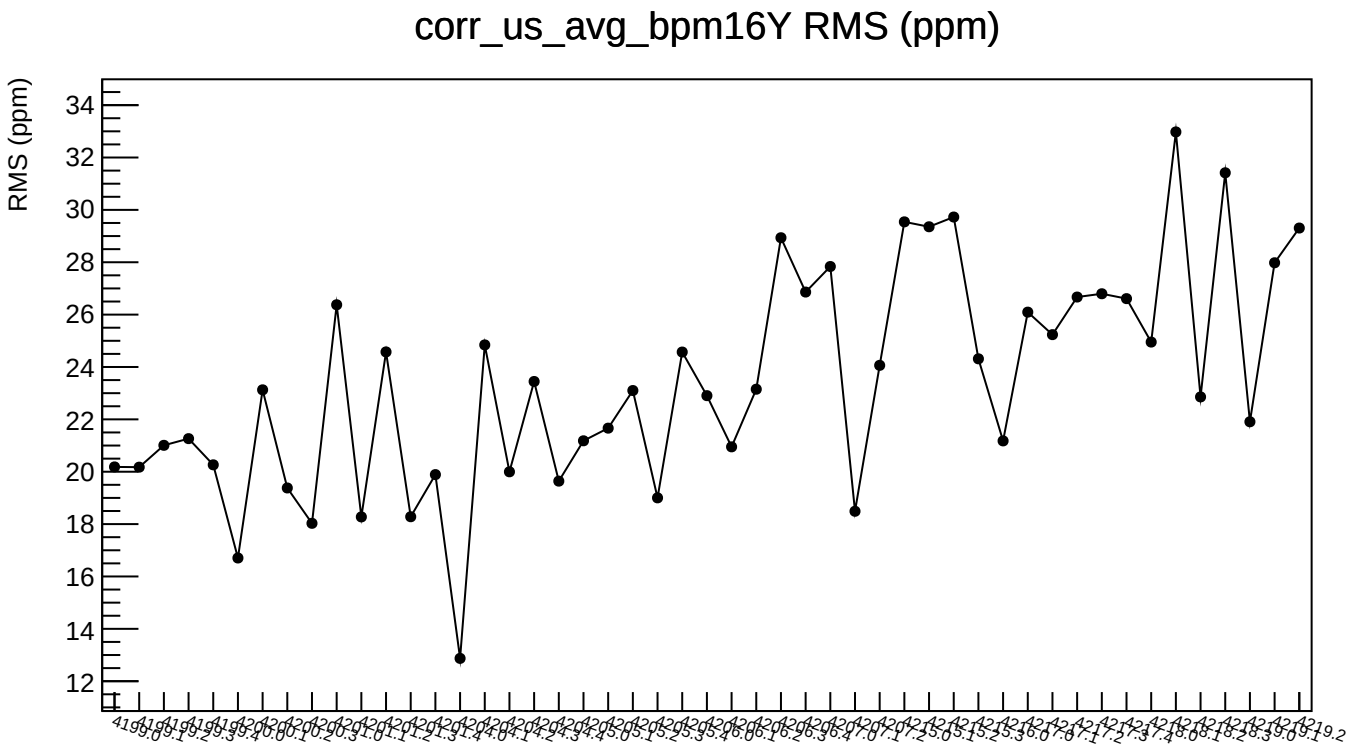

corr_us_avg_bpm1Y RMS (ppm)
RMS (ppm)
50
40
30
20
10

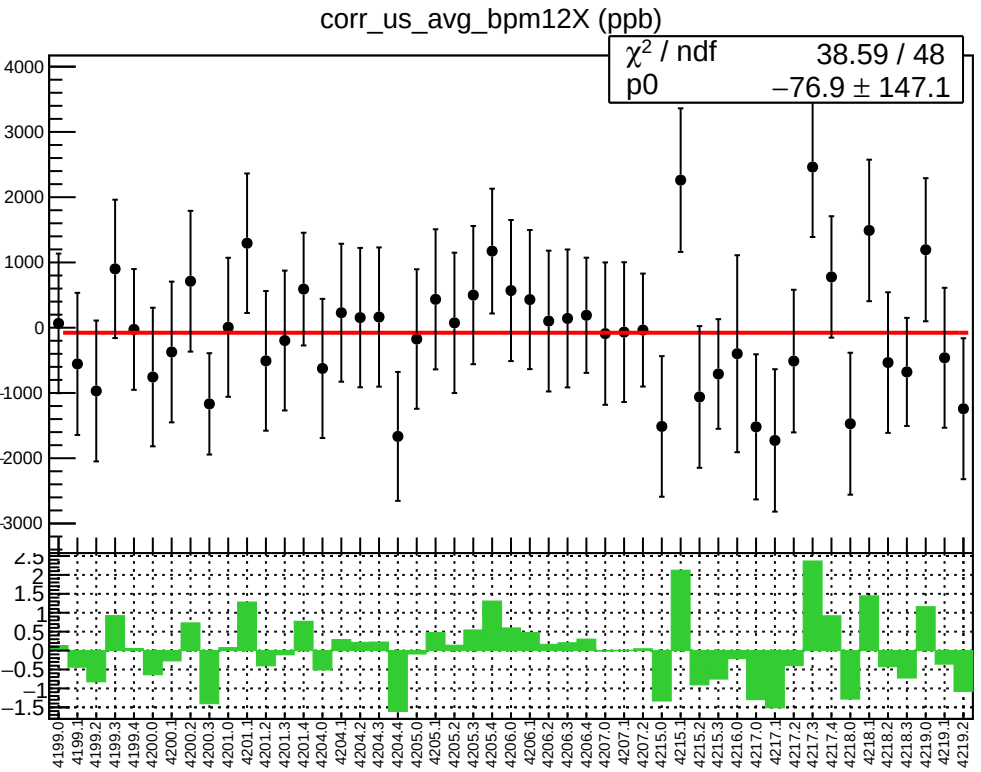

corr_us_avg_bpm16X (ppb)
χ² / ndf 18.34 / 48
p0 12.02 ± 50.76
1000
800
600
400
200
0
−200
−400
−600
−800
1.5
1
0.5
0
−0.5
−1
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2
1D pull distribution
Mean 0.01014 ± 0.08738
Std Dev 0.6117 ± 0.06179
Underflow 0
Overflow 0
χ² / ndf 7.603 / 4
Constant 15.4 ± 4.2
Mean −0.07395 ± 0.14263
Sigma 0.5737 ± 0.1319
25
20
15
10
5
0
−8
−6
−4
−2
0
2
4
6
8

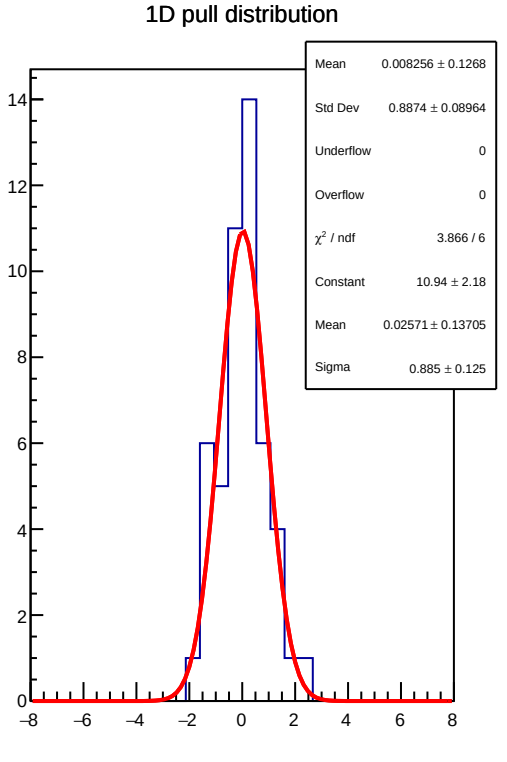

corr_us_avg_bpm16X RMS (ppm)
RMS (ppm)
35
30
25
20
15
10
5

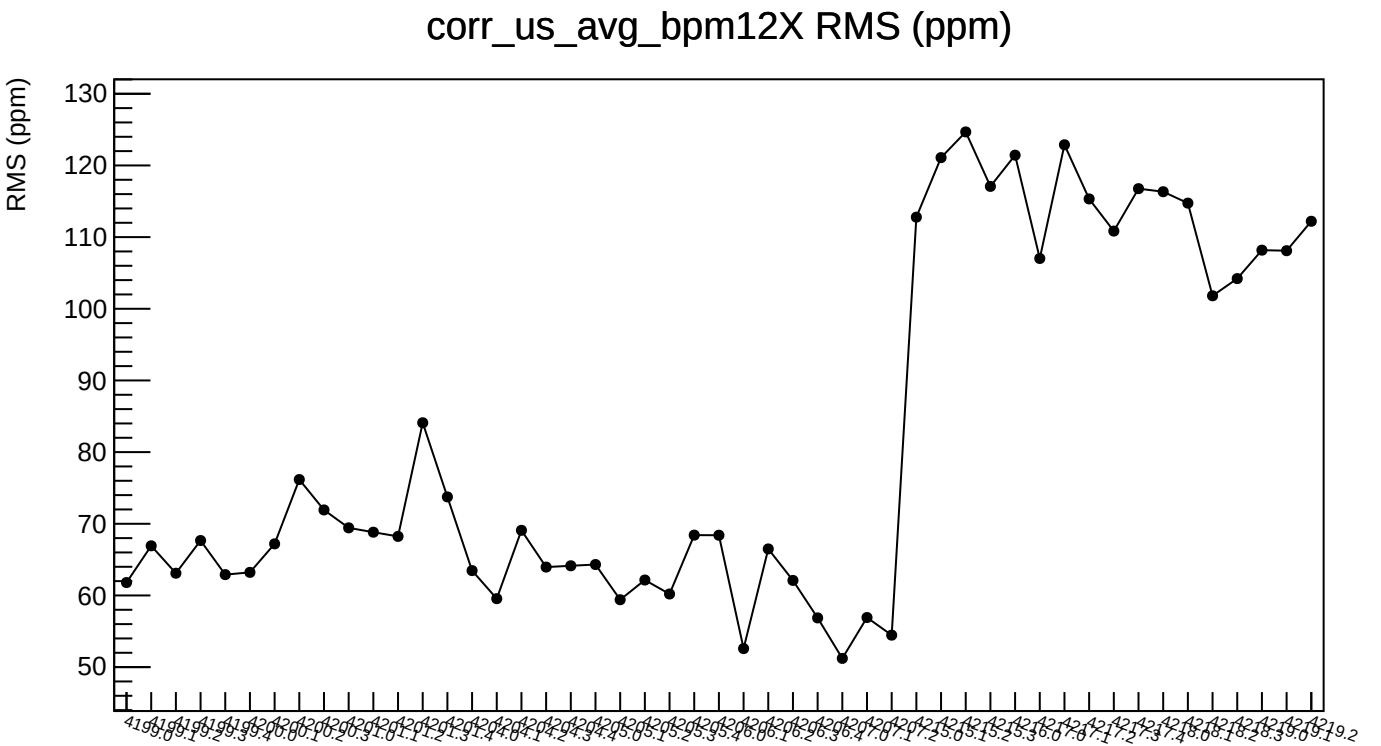

corr_us_avg_bpm16Y (ppb)
χ² / ndf 48.32 / 48
p0 3.206 ± 31.13
800
600
400
200
0
−200
−400
−600
−800
2
1
0
−1
−2
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

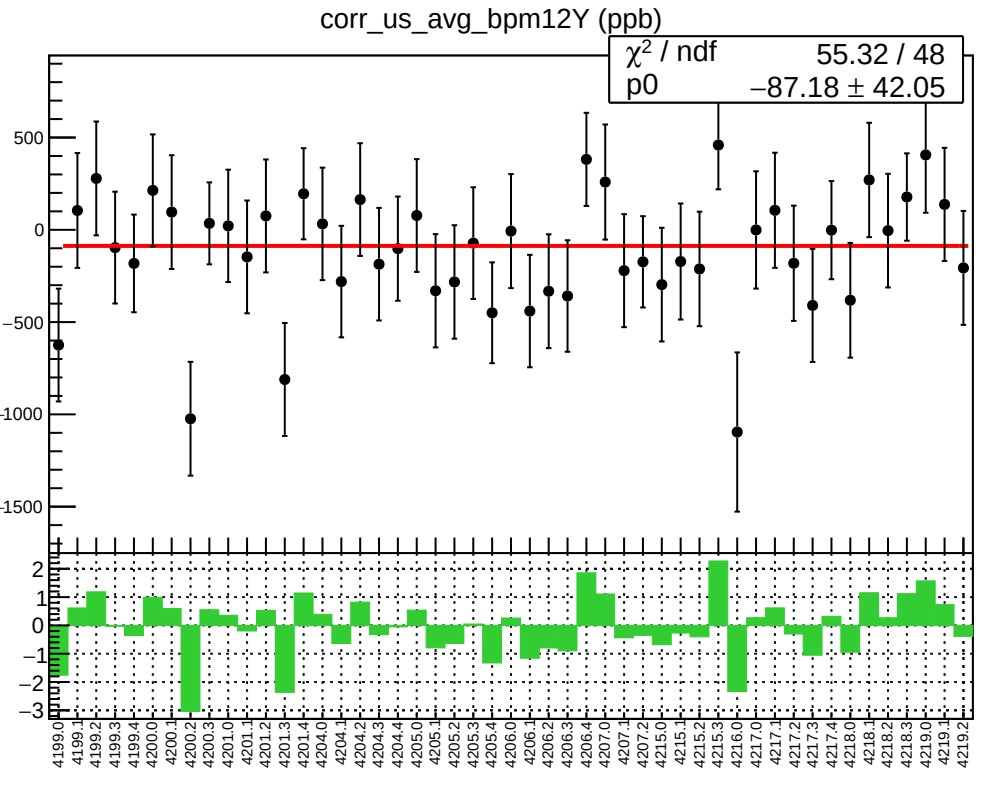

1D pull distribution
Mean −0.01475 ± 0.1419
Std Dev 0.993 ± 0.1003
Underflow 0
Overflow 0
χ² / ndf 3.878 / 6
Constant 9.986 ± 2.035
Mean 0.02348 ± 0.17437
Sigma 0.9874 ± 0.1602
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

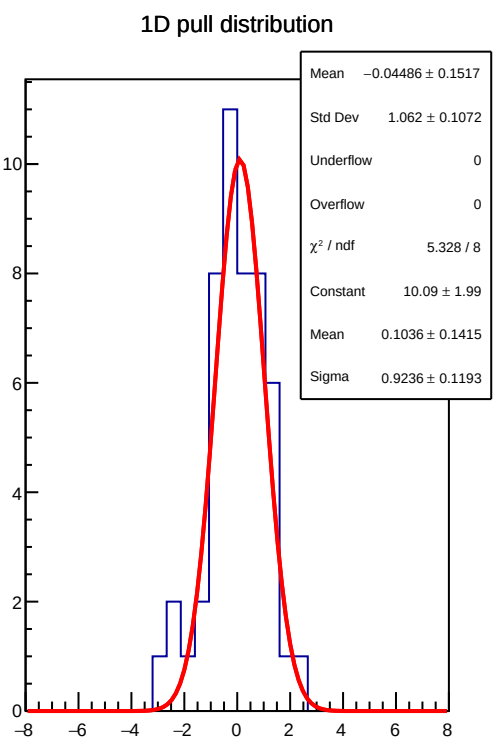

corr_us_avg_bpm16Y RMS (ppm)
RMS (ppm)
34
32
30
28
26
24
22
20
18
16
14
12

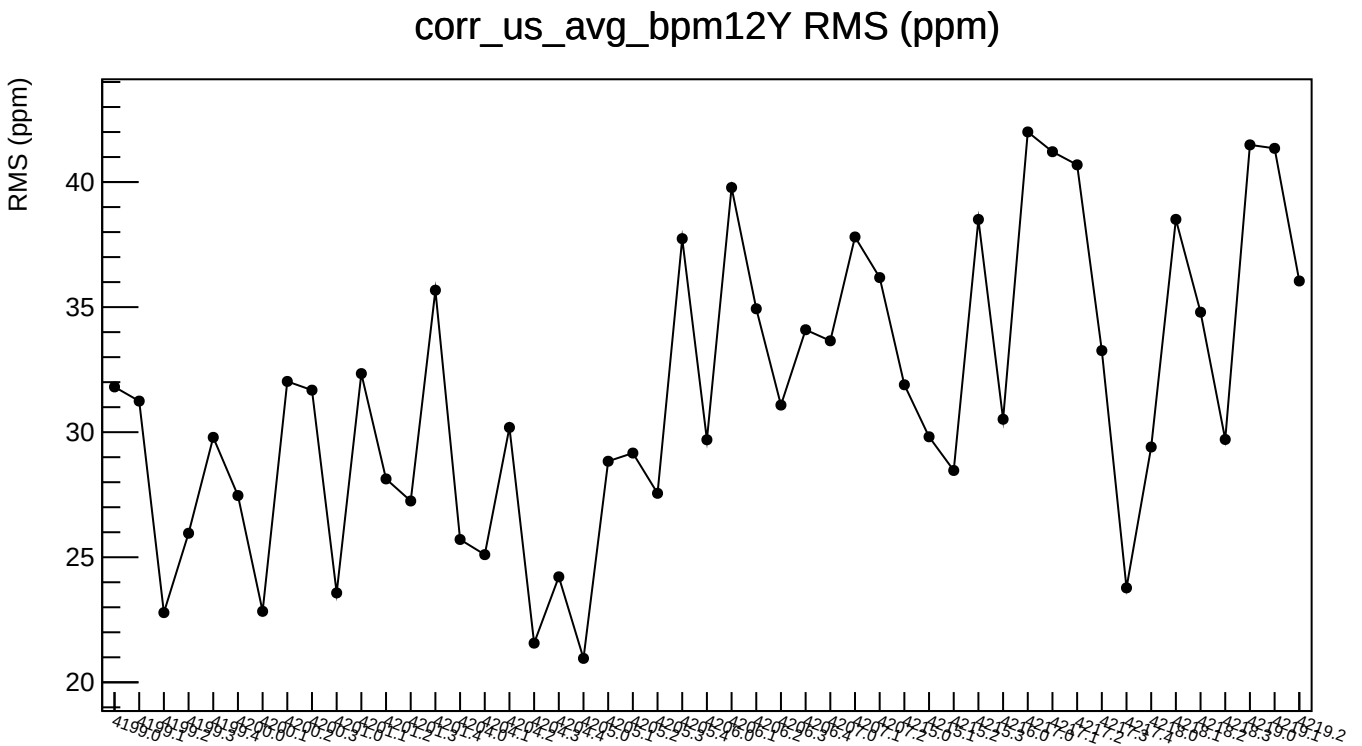

corr_us_avg_bpm12X (ppb)
χ² / ndf 38.59 / 48
p0 −76.9 ± 147.1
4000
3000
2000
1000
0
-1000
-2000
-3000
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

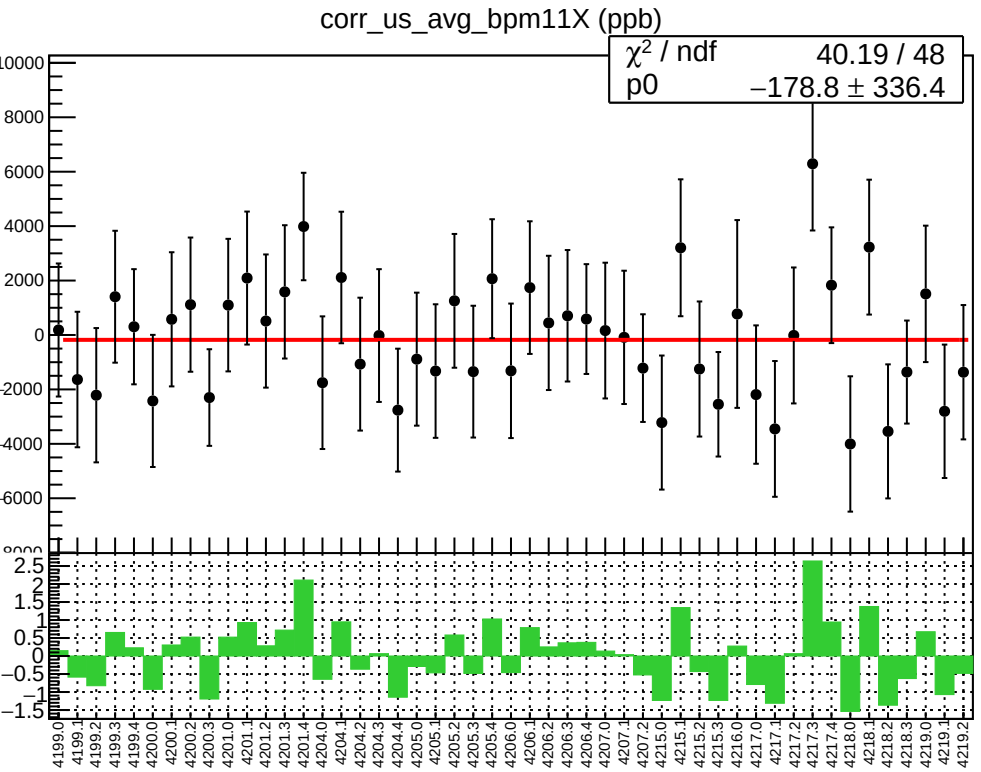

1D pull distribution
Mean 0.008256 ± 0.1268
Std Dev 0.8874 ± 0.08964
Underflow 0
Overflow 0
χ² / ndf 3.866 / 6
Constant 10.94 ± 2.18
Mean 0.02571 ± 0.13705
Sigma 0.885 ± 0.125
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

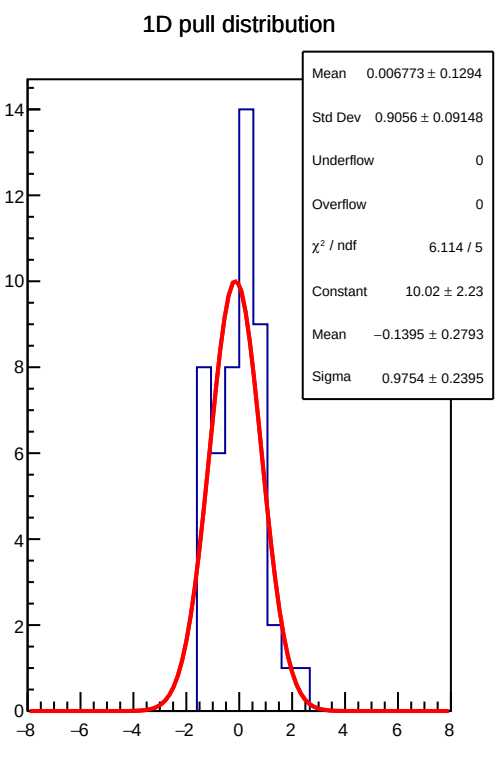

corr_us_avg_bpm12X RMS (ppm)
RMS (ppm)
130
120
110
100
90
80
70
60
50

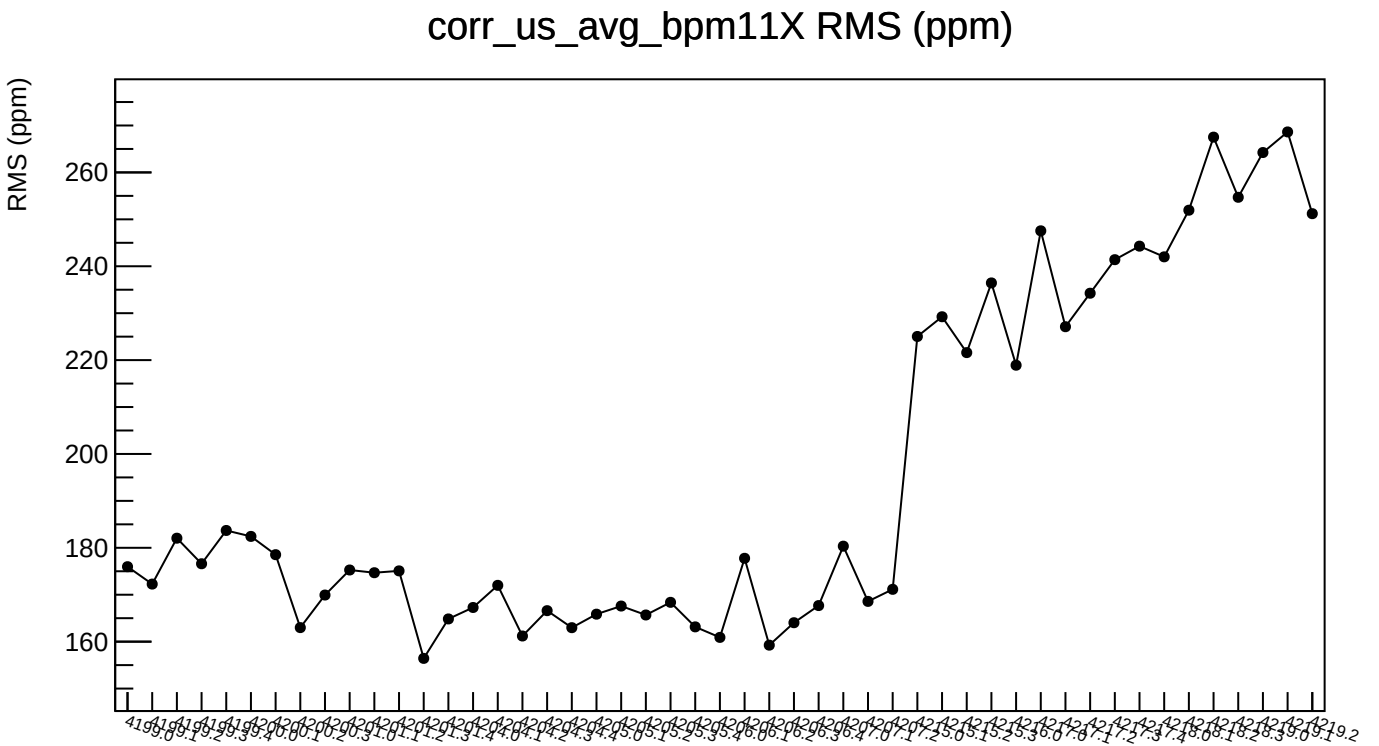

corr_us_avg_bpm12Y (ppb)
χ² / ndf 55.32 / 48
p0 −87.18 ± 42.05
500
0
−500
−1000
−1500
Pull
2
1
0
−1
−2
−3
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

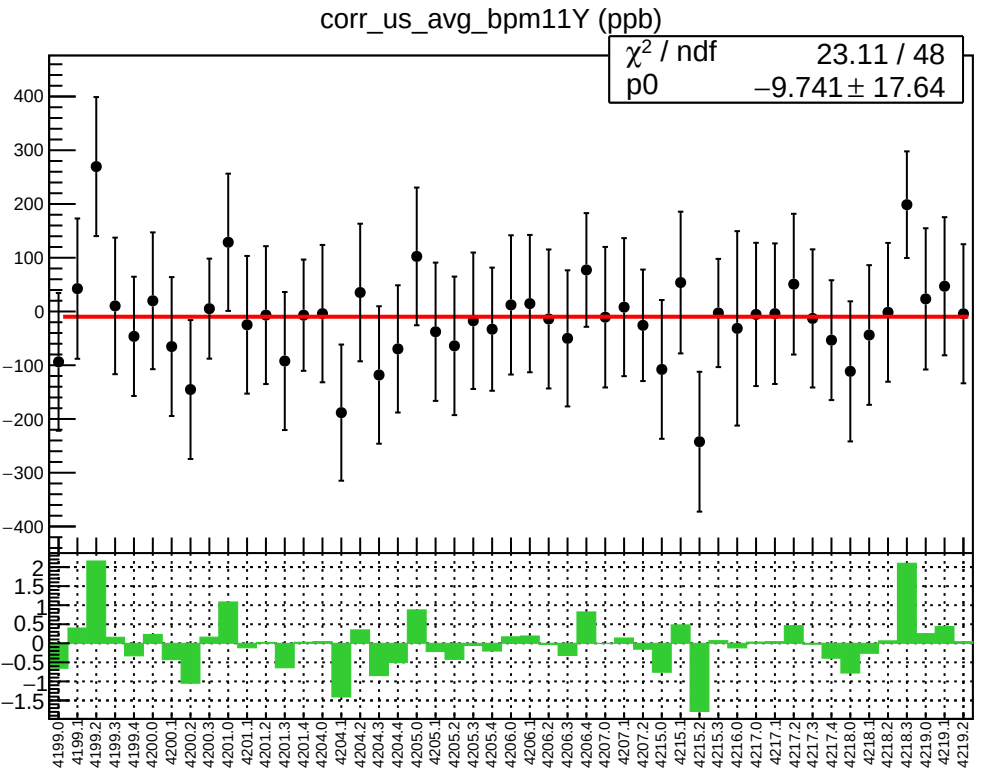

1D pull distribution
Mean −0.04486 ± 0.1517
Std Dev 1.062 ± 0.1072
Underflow 0
Overflow 0
χ² / ndf 5.328 / 8
Constant 10.09 ± 1.99
Mean 0.1036 ± 0.1415
Sigma 0.9236 ± 0.1193
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

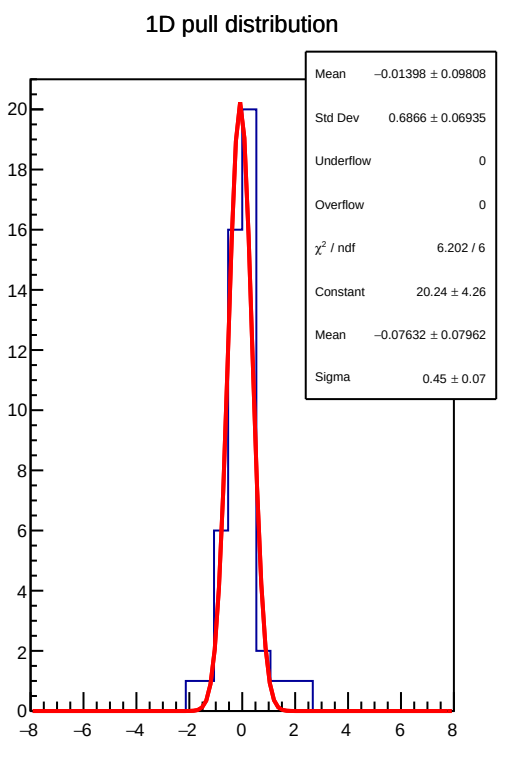

corr_us_avg_bpm12Y RMS (ppm)
RMS (ppm)
40
35
30
25
20

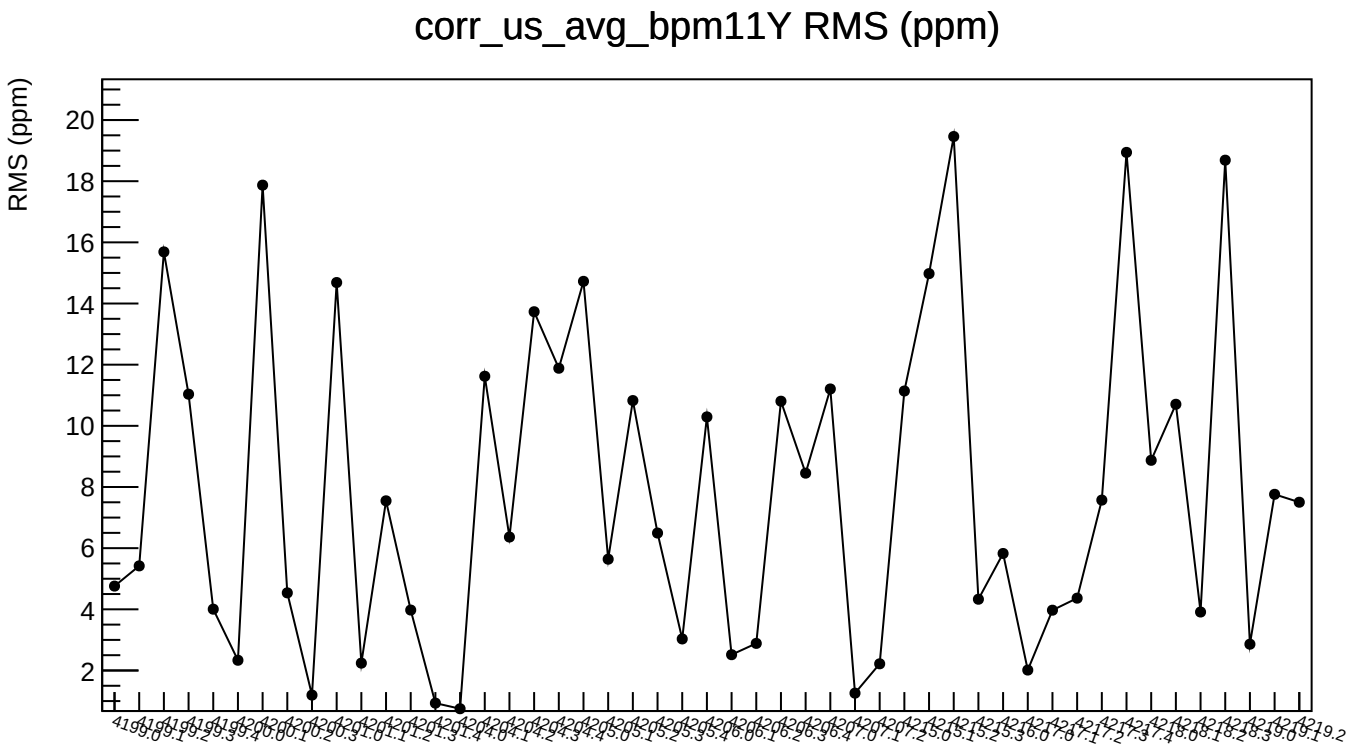

corr_us_avg_bpm11X (ppb)
χ² / ndf 40.19 / 48
p0 −178.8 ± 336.4
10000
8000
6000
4000
2000
0
-2000
-4000
-6000
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

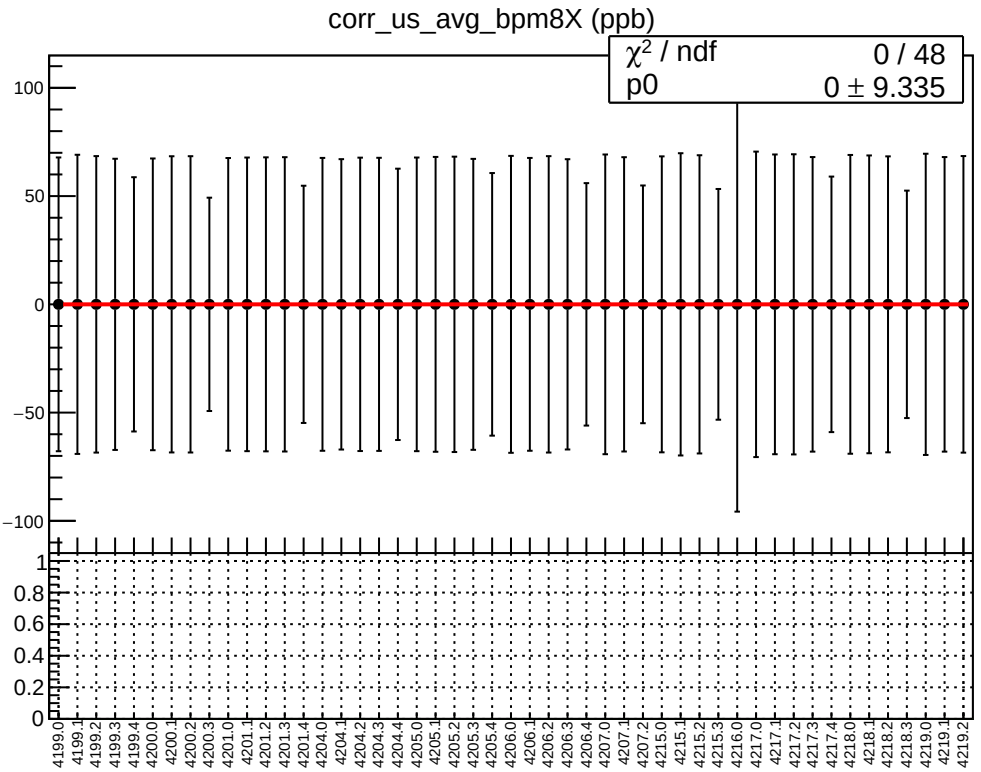

1D pull distribution
Mean 0.006773 ± 0.1294
Std Dev 0.9056 ± 0.09148
Underflow 0
Overflow 0
χ² / ndf 6.114 / 5
Constant 10.02 ± 2.23
Mean −0.1395 ± 0.2793
Sigma 0.9754 ± 0.2395
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

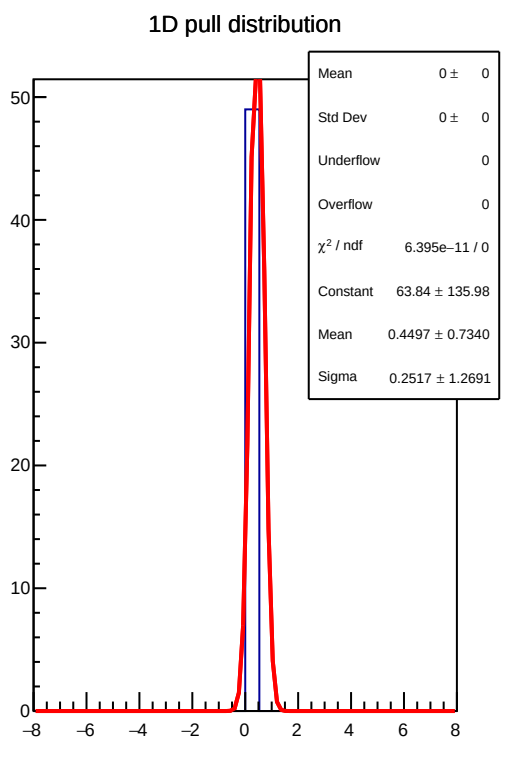

corr_us_avg_bpm11X RMS (ppm)
RMS (ppm)
260
240
220
200
180
160

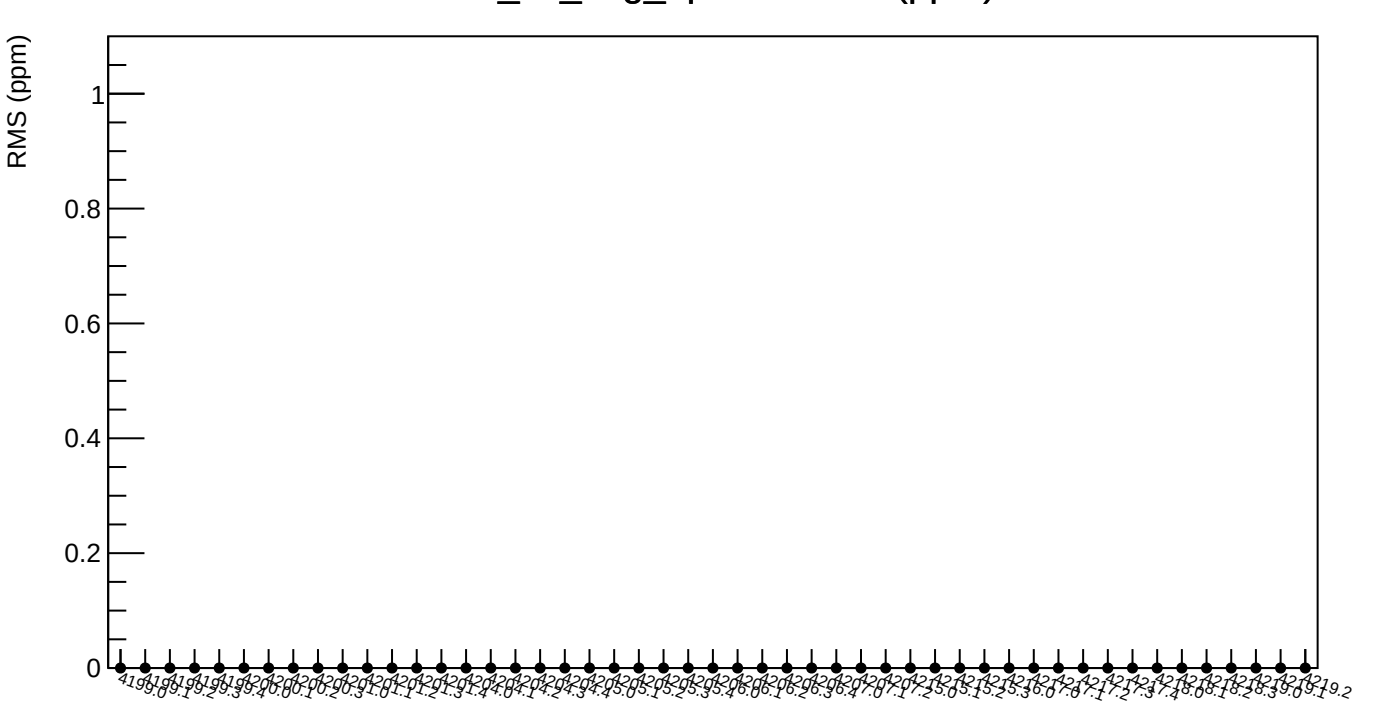

corr_us_avg_bpm11Y (ppb)
χ² / ndf 23.11 / 48
p0 −9.741 ± 17.64
400
300
200
100
0
−100
−200
−300
−400
2
1.5
1
0.5
0
−0.5
−1
−1.5
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

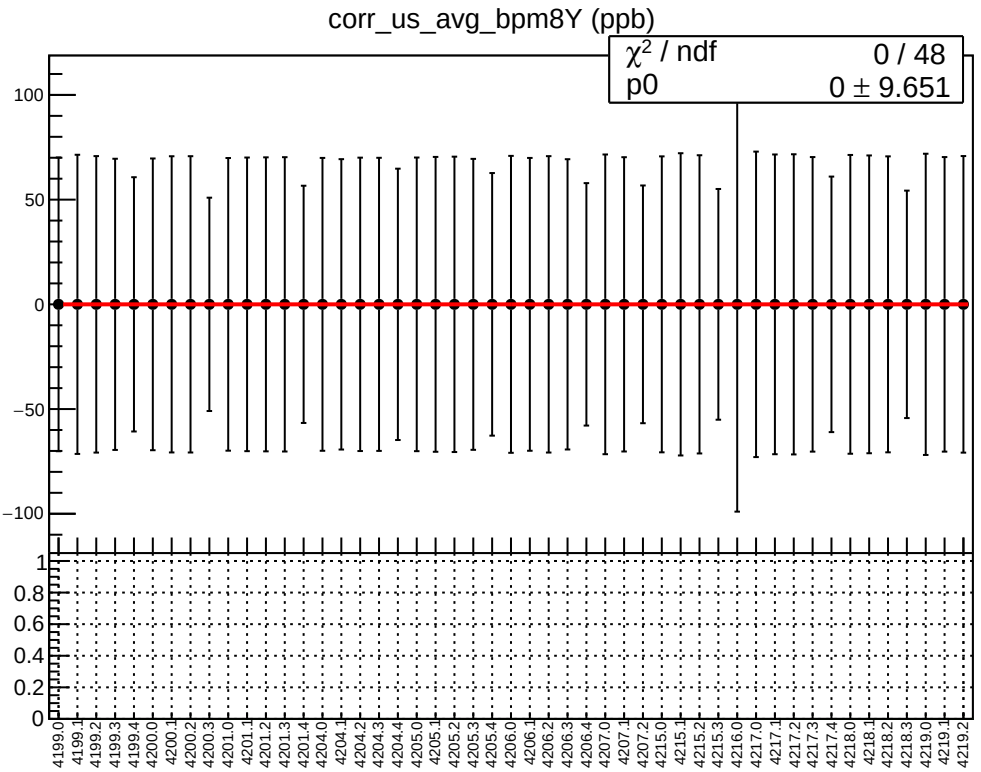

1D pull distribution
Mean −0.01398 ± 0.09808
Std Dev 0.6866 ± 0.06935
Underflow 0
Overflow 0
χ² / ndf 6.202 / 6
Constant 20.24 ± 4.26
Mean −0.07632 ± 0.07962
Sigma 0.45 ± 0.07
20
18
16
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

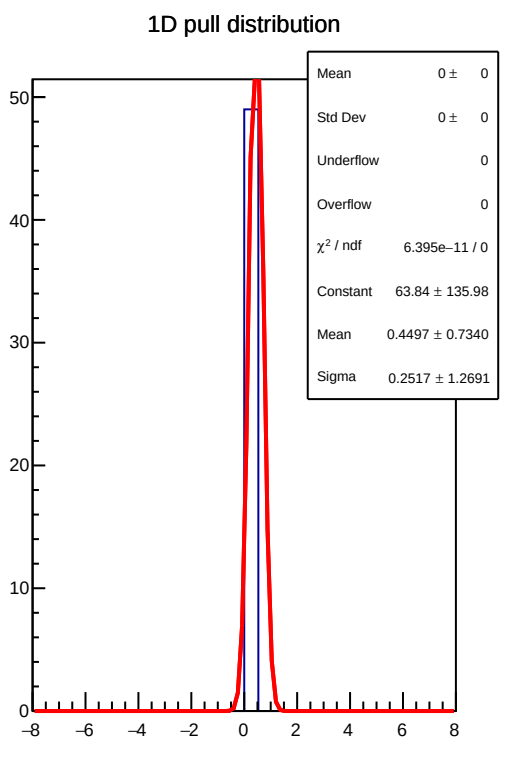

corr_us_avg_bpm11Y RMS (ppm)
RMS (ppm)
20
18
16
14
12
10
8
6
4
2

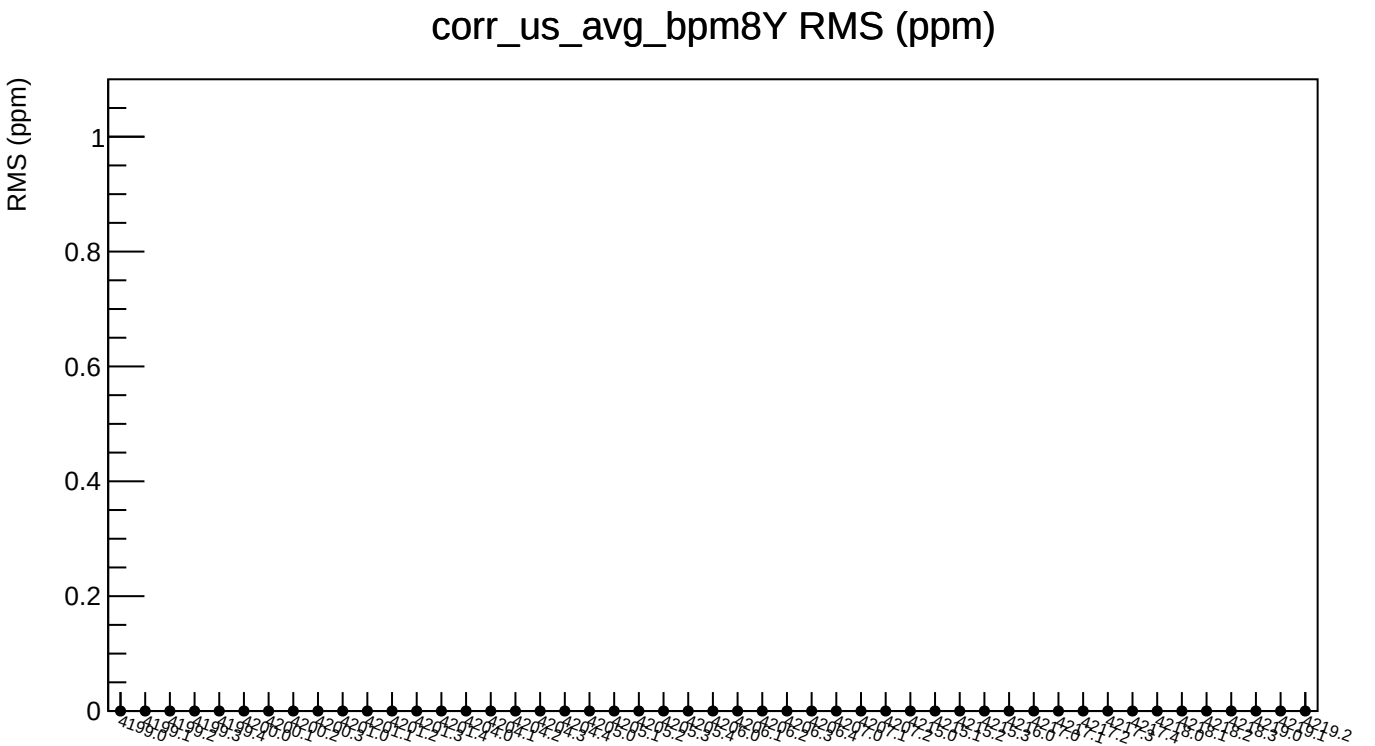

corr_us_avg_bpm8X (ppb)
χ² / ndf 0 / 48
p0 0 ± 9.335
100
50
0
−50
−100
1
0.8
0.6
0.4
0.2
0
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

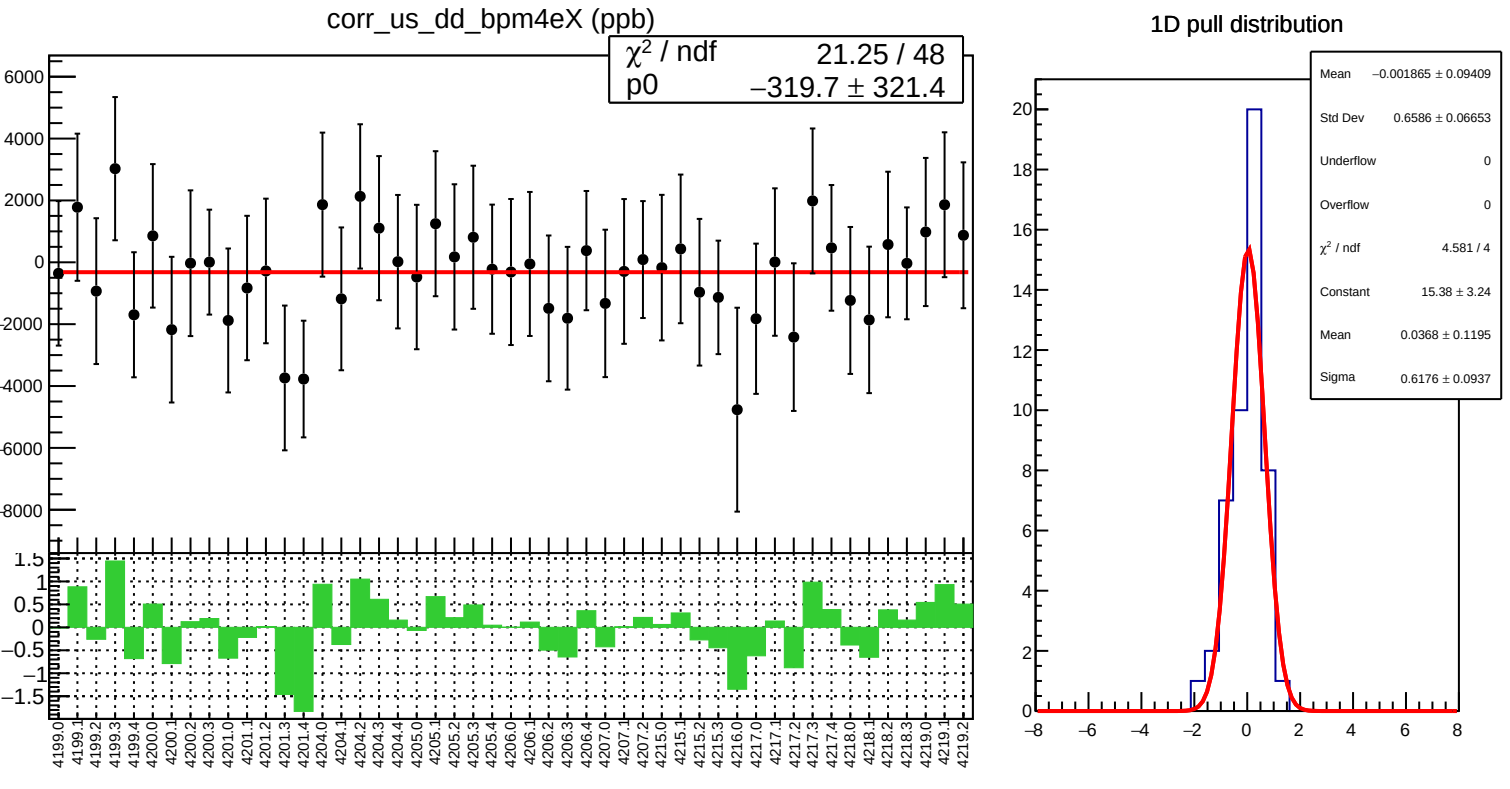

1D pull distribution
Mean 0 ± 0
Std Dev 0 ± 0
Underflow 0
Overflow 0
χ² / ndf 6.395e−11 / 0
Constant 63.84 ± 135.98
Mean 0.4497 ± 0.7340
Sigma 0.2517 ± 1.2691
50
40
30
20
10
0
−8
−6
−4
−2
0
2
4
6
8

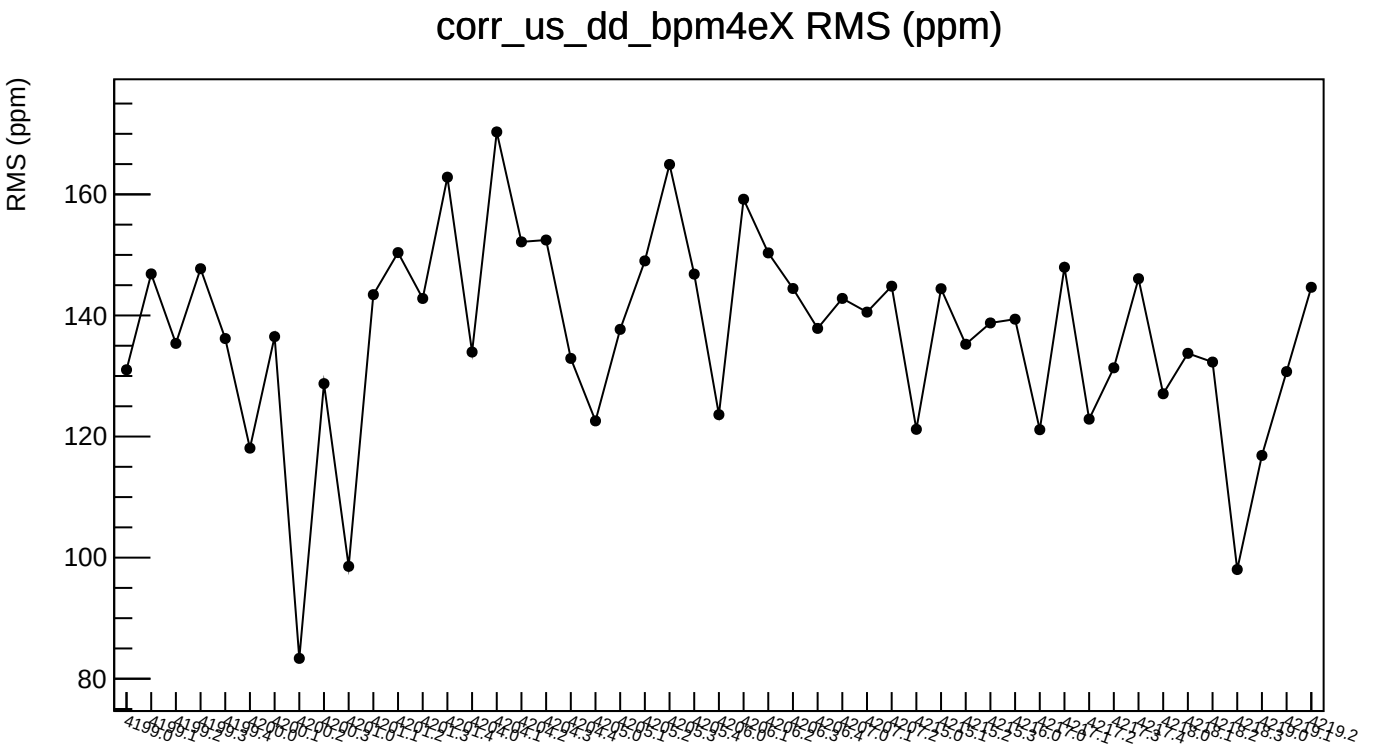

corr_us_avg_bpm8X RMS (ppm)
RMS (ppm)
1
0.8
0.6
0.4
0.2
0

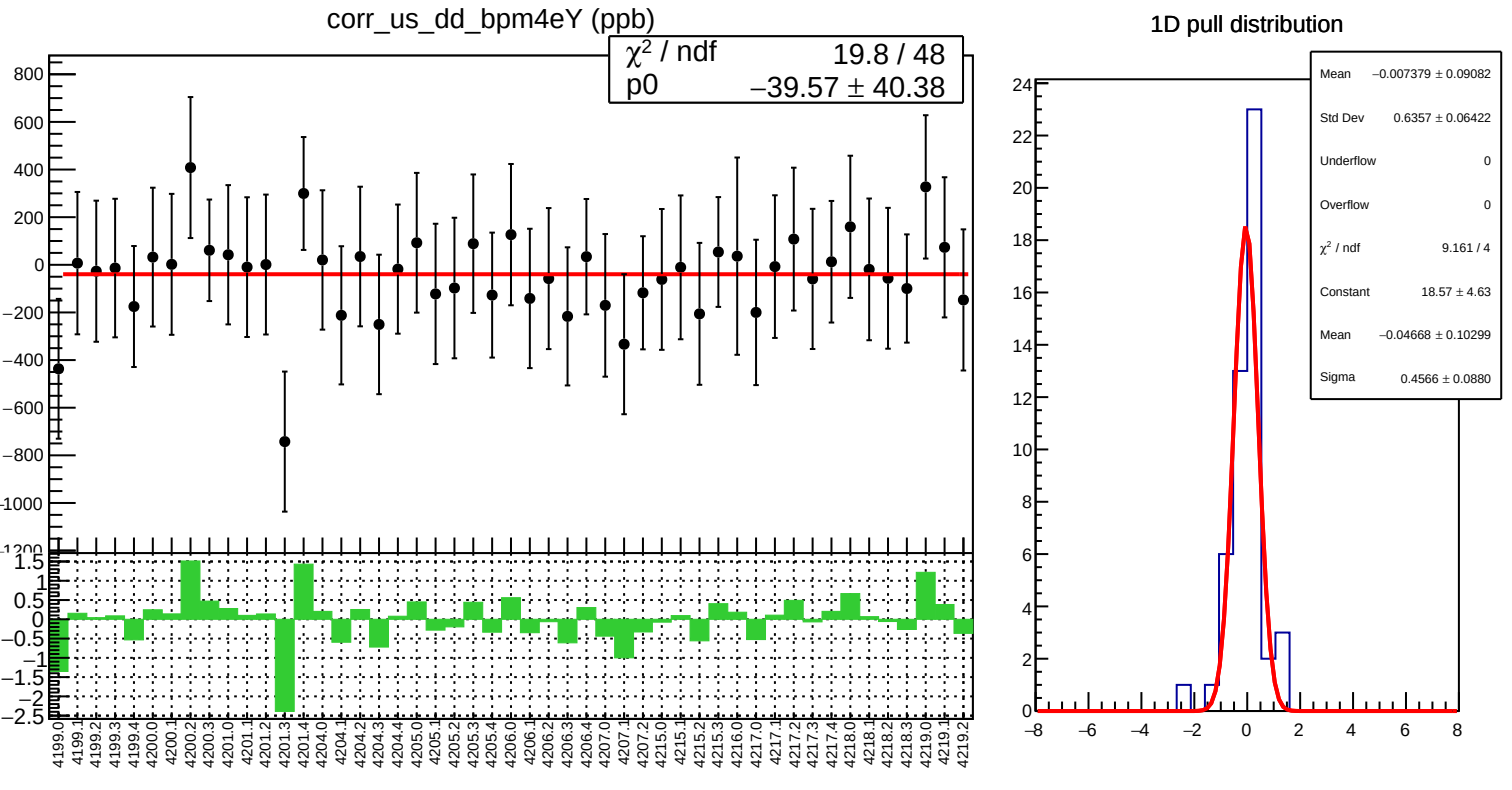

corr_us_avg_bpm8Y (ppb)
χ² / ndf 0 / 48
p0 0 ± 9.651
100
50
0
−50
−100
1
0.8
0.6
0.4
0.2
0
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

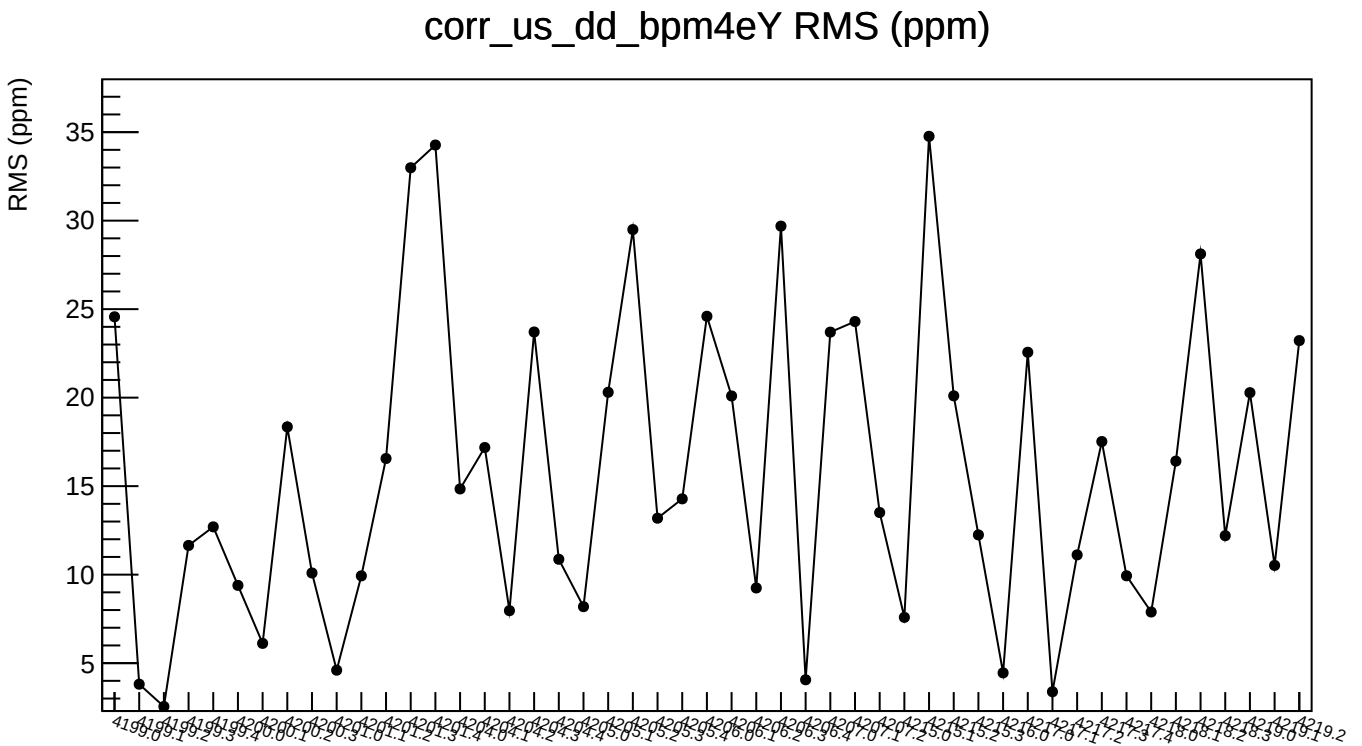

1D pull distribution
Mean 0 ± 0
Std Dev 0 ± 0
Underflow 0
Overflow 0
χ² / ndf 6.395e−11 / 0
Constant 63.84 ± 135.98
Mean 0.4497 ± 0.7340
Sigma 0.2517 ± 1.2691
50
40
30
20
10
0
−8
−6
−4
−2
0
2
4
6
8

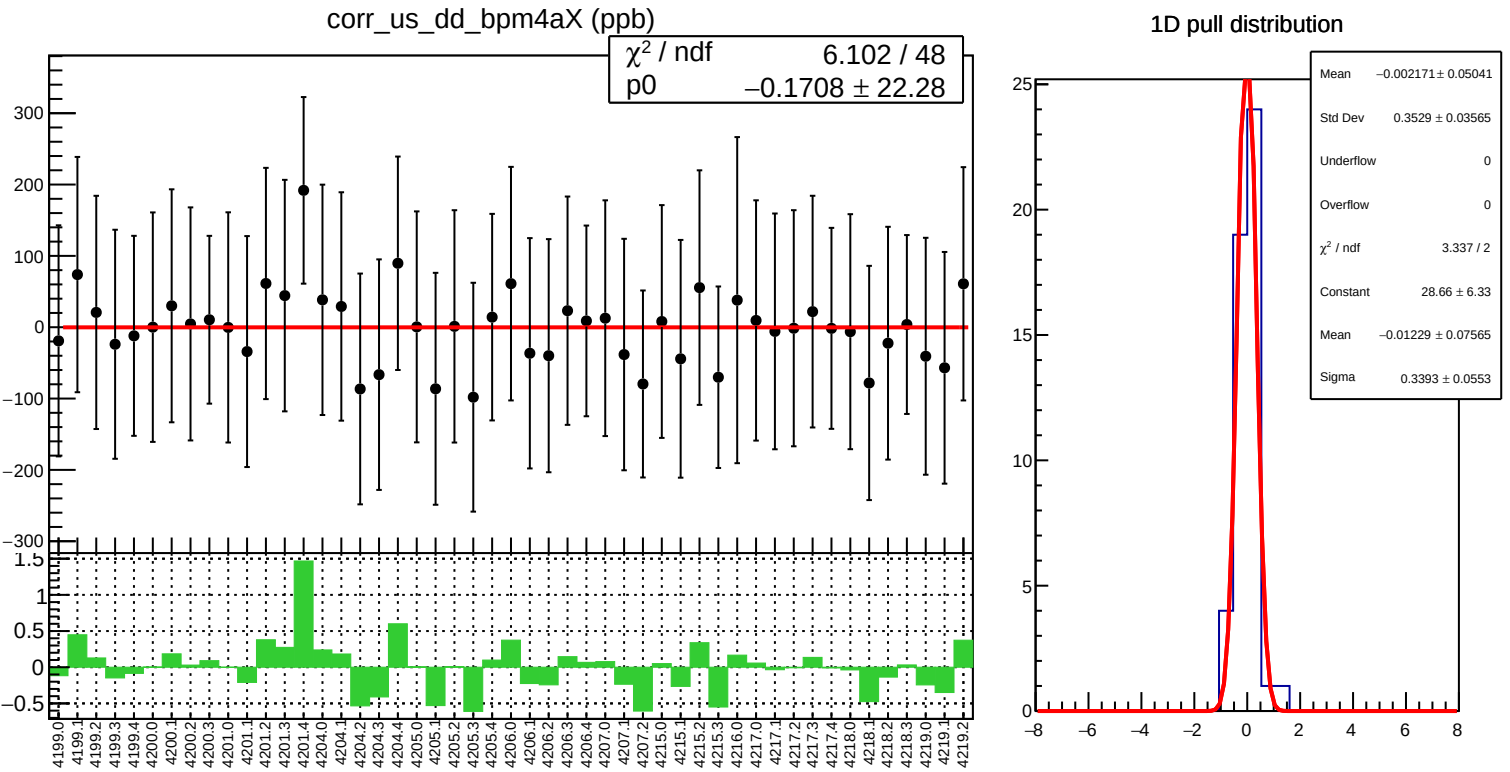

corr_us_avg_bpm8Y RMS (ppm)
RMS (ppm)
1
0.8
0.6
0.4
0.2
0

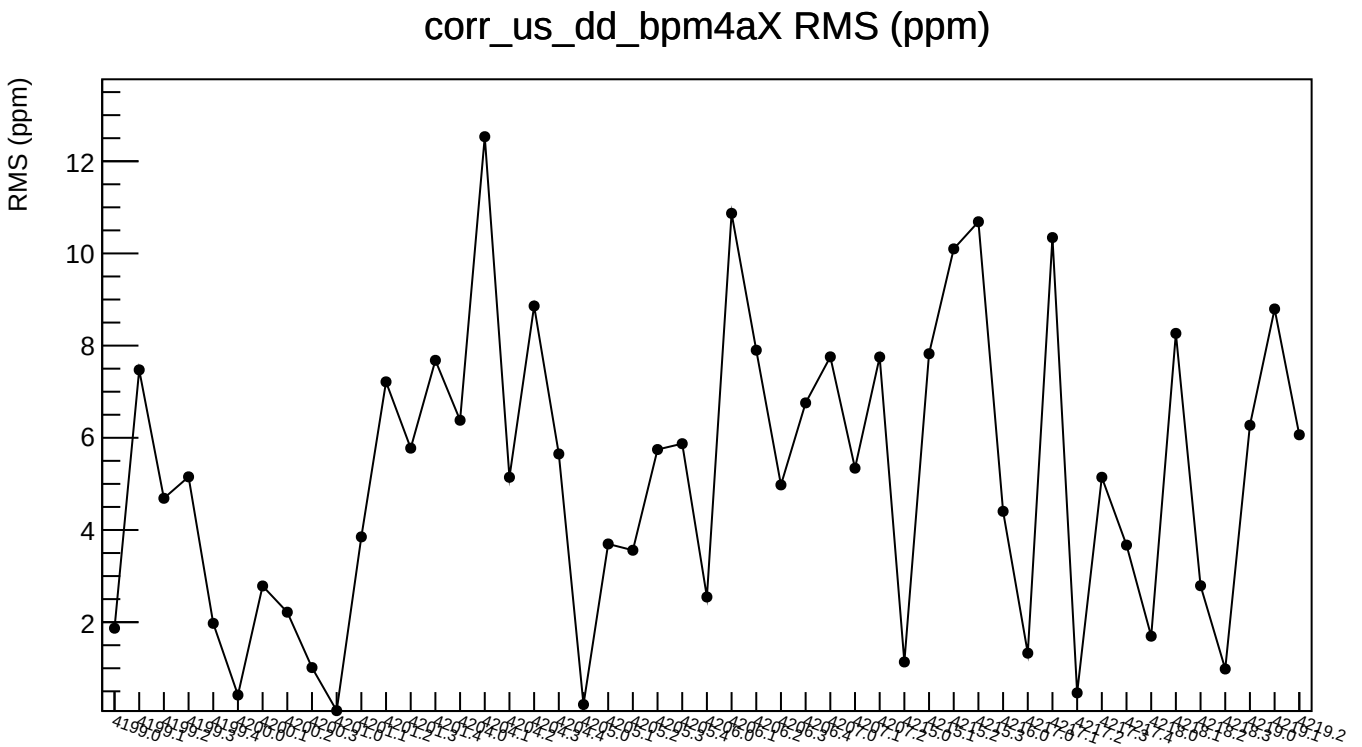

corr_us_dd_bpm4eX (ppb)
χ² / ndf 21.25 / 48
p0 −319.7 ± 321.4
1D pull distribution
Mean −0.001865 ± 0.09409
Std Dev 0.6586 ± 0.06653
Underflow 0
Overflow 0
χ² / ndf 4.581 / 4
Constant 15.38 ± 3.24
Mean 0.0368 ± 0.1195
Sigma 0.6176 ± 0.0937

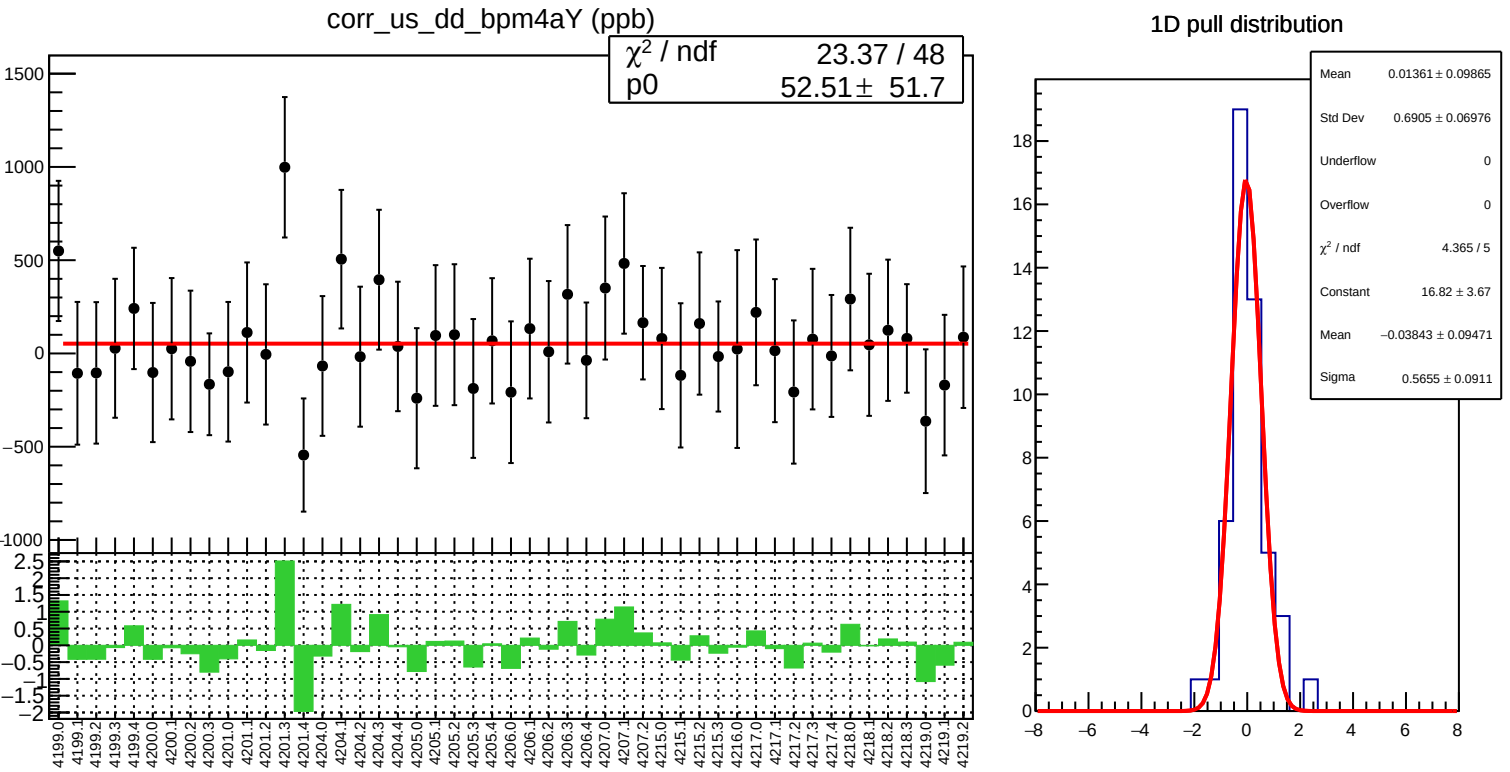

corr_us_dd_bpm4eX RMS (ppm)
RMS (ppm)
160
140
120
100
80

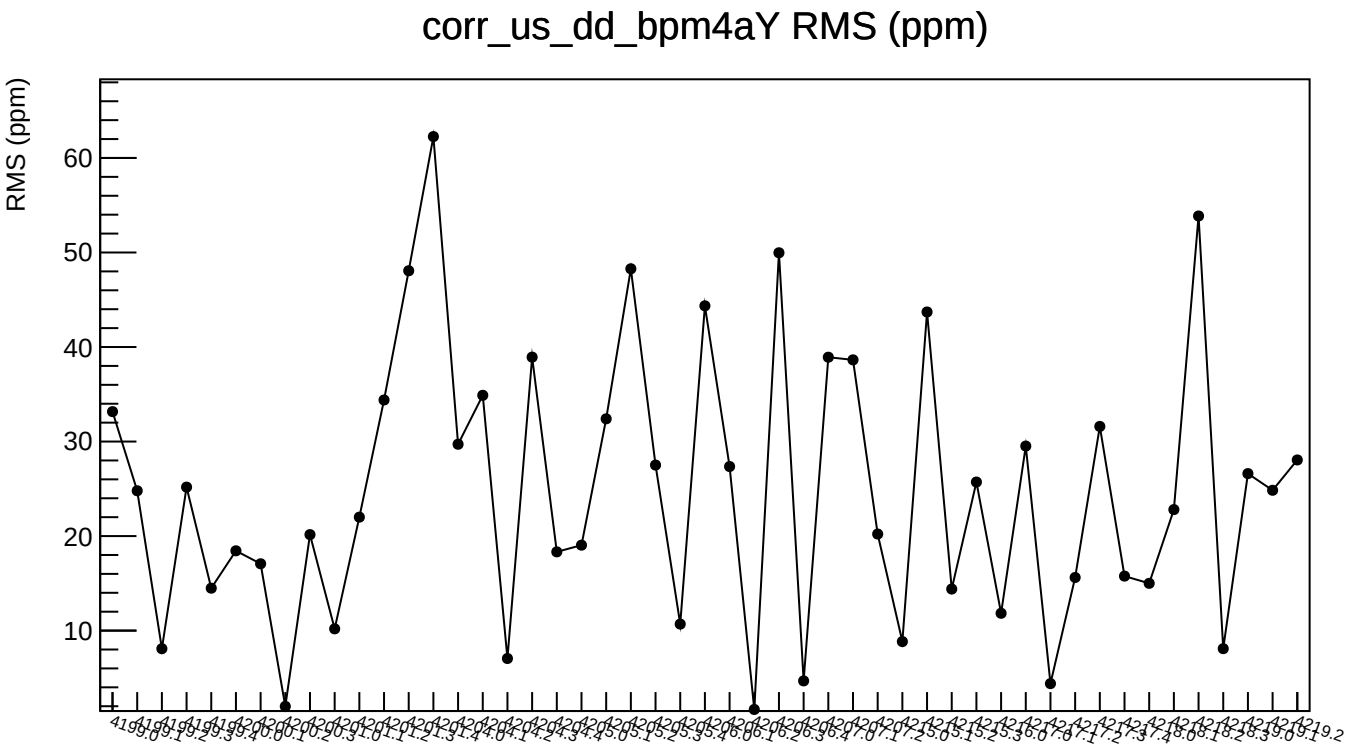

corr_us_dd_bpm4eY (ppb)
χ² / ndf 19.8 / 48
p0 −39.57 ± 40.38
1D pull distribution
Mean −0.007379 ± 0.09082
Std Dev 0.6357 ± 0.06422
Underflow 0
Overflow 0
χ² / ndf 9.161 / 4
Constant 18.57 ± 4.63
Mean −0.04668 ± 0.10299
Sigma 0.4566 ± 0.0880

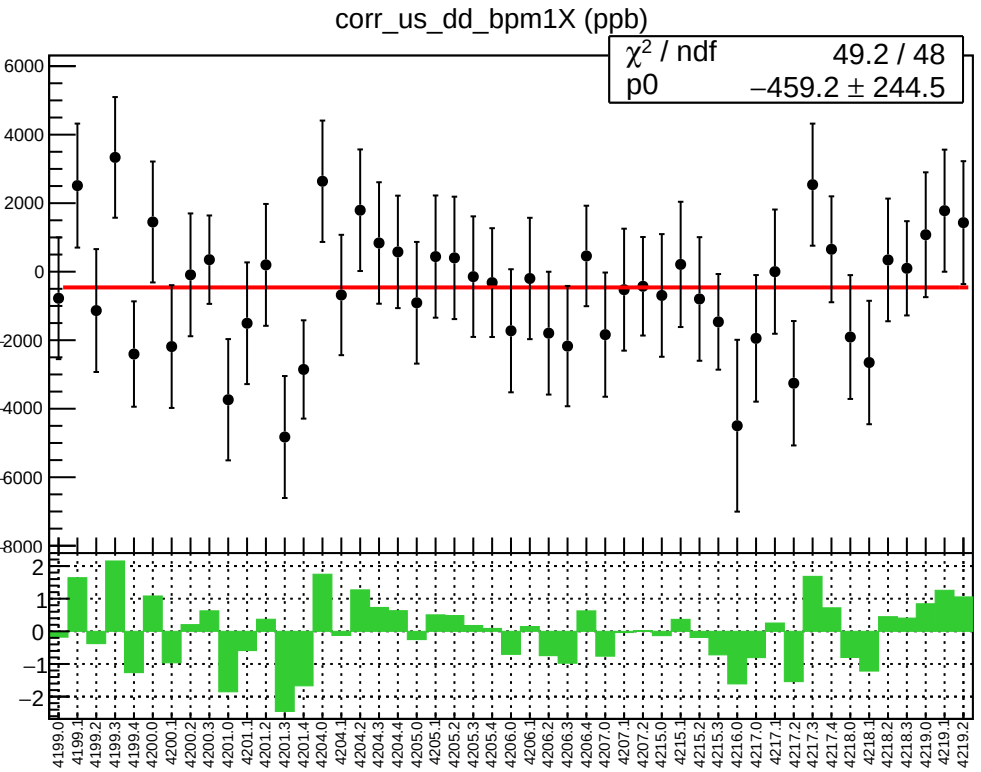

corr_us_dd_bpm4eY RMS (ppm)
RMS (ppm)
35
30
25
20
15
10
5

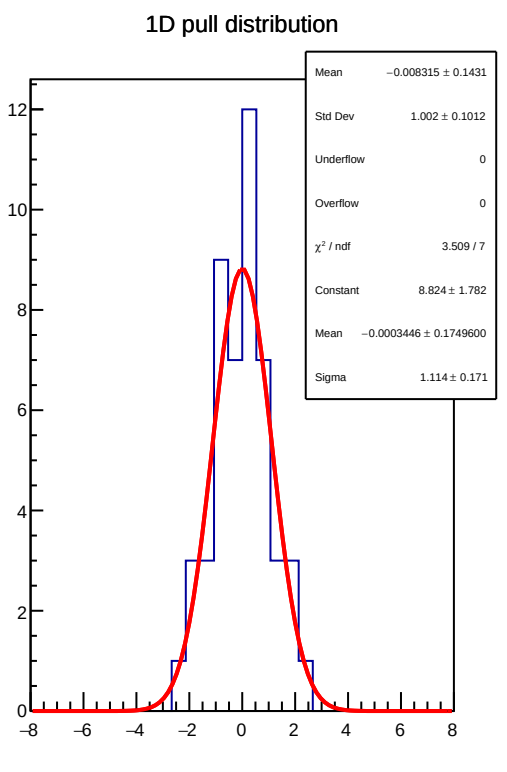

corr_us_dd_bpm4aX (ppb)
χ² / ndf 6.102 / 48
p0 −0.1708 ± 22.28
1D pull distribution
Mean −0.002171 ± 0.05041
Std Dev 0.3529 ± 0.03565
Underflow 0
Overflow 0
χ² / ndf 3.337 / 2
Constant 28.66 ± 6.33
Mean −0.01229 ± 0.07565
Sigma 0.3393 ± 0.0553

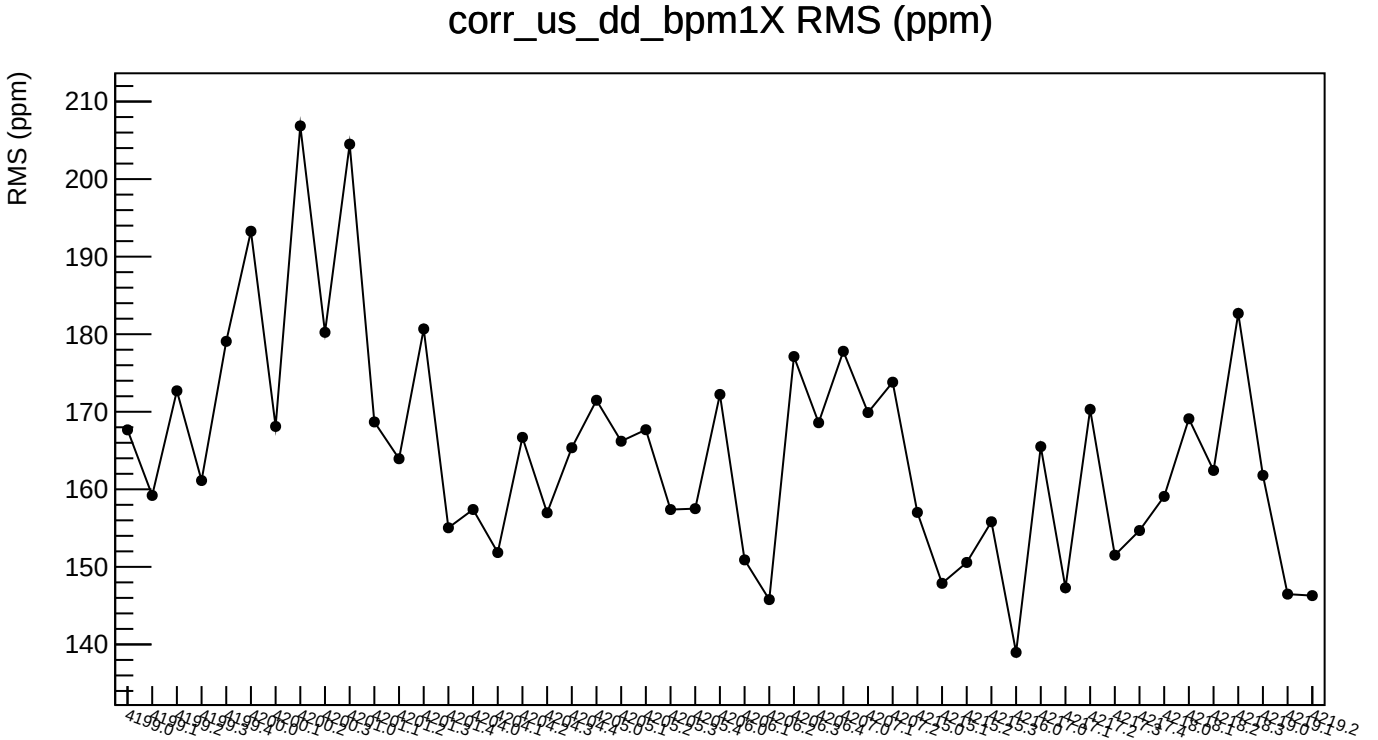

corr_us_dd_bpm4aX RMS (ppm)
RMS (ppm)
12
10
8
6
4
2

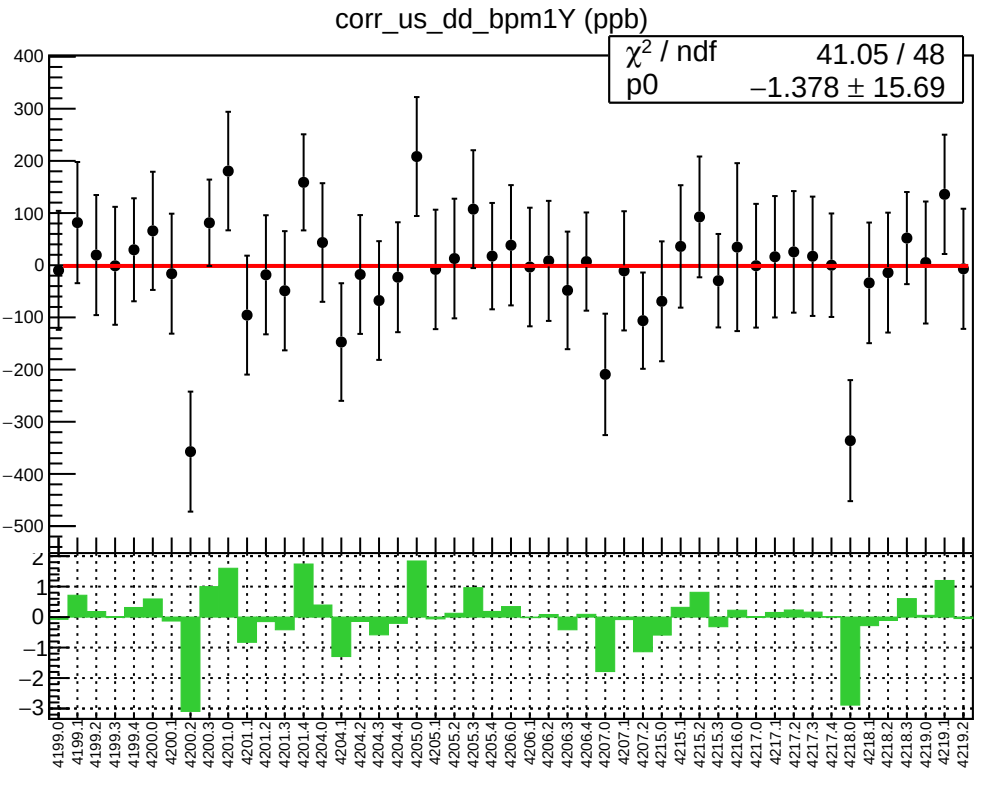

corr_us_dd_bpm4aY (ppb)
χ² / ndf 23.37 / 48
p0 52.51± 51.7
1500
1000
500
0
−500
−1000
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2
1D pull distribution
Mean 0.01361 ± 0.09865
Std Dev 0.6905 ± 0.06976
Underflow 0
Overflow 0
χ² / ndf 4.365 / 5
Constant 16.82 ± 3.67
Mean −0.03843 ± 0.09471
Sigma 0.5655 ± 0.0911
18
16
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

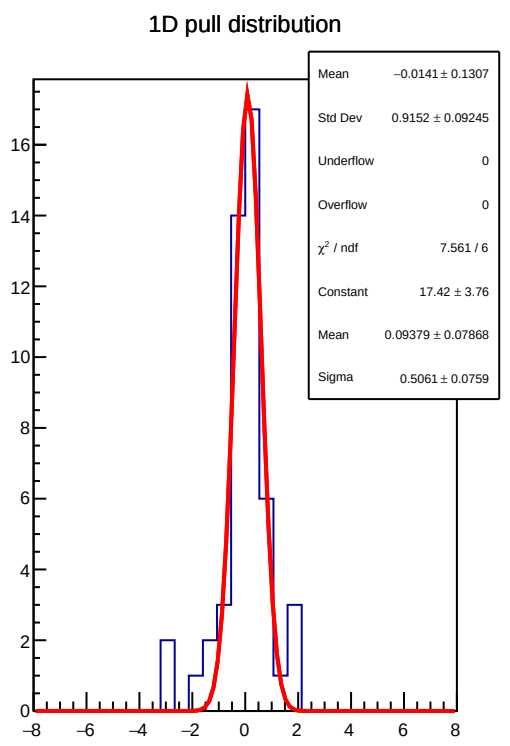

corr_us_dd_bpm4aY RMS (ppm)
RMS (ppm)
10
20
30
40
50
60

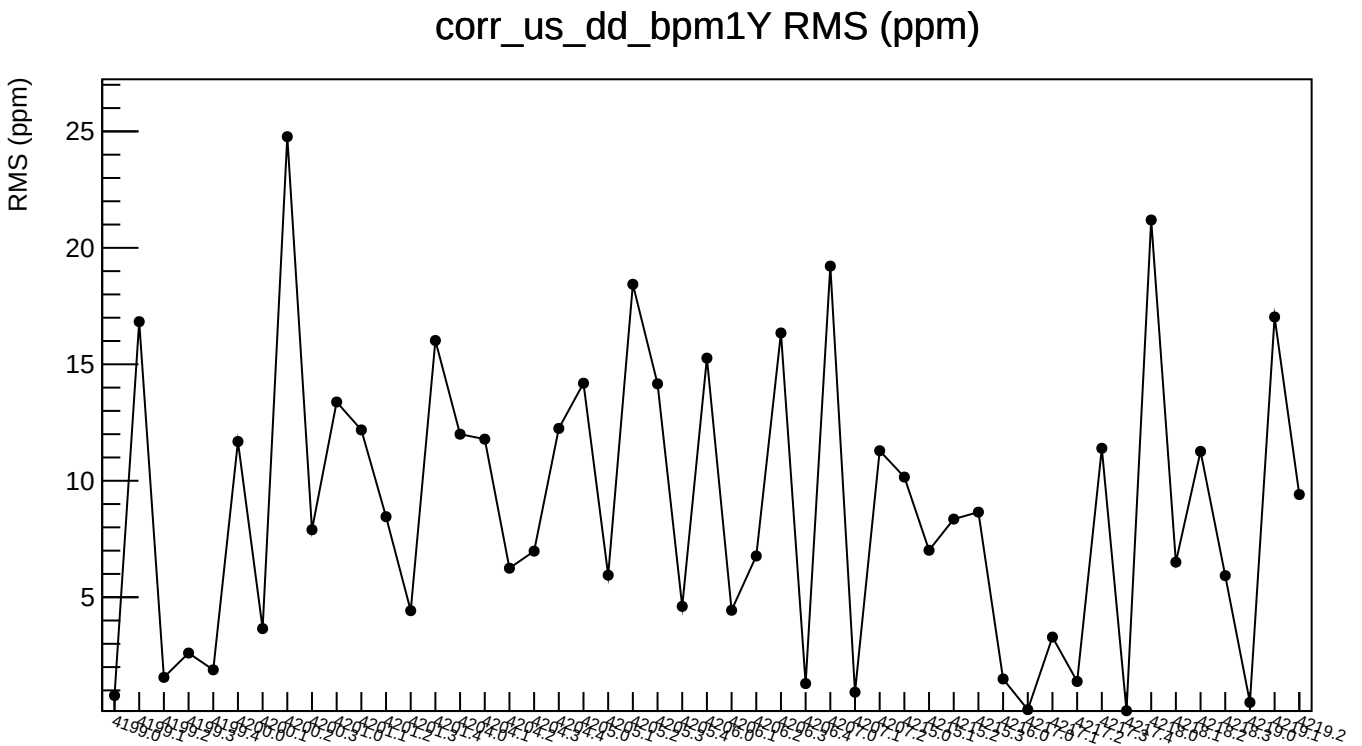

corr_us_dd_bpm1X (ppb)
χ² / ndf 49.2 / 48
p0 −459.2 ± 244.5
6000
4000
2000
0
-2000
-4000
-6000
-8000
2
1
0
−1
−2
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

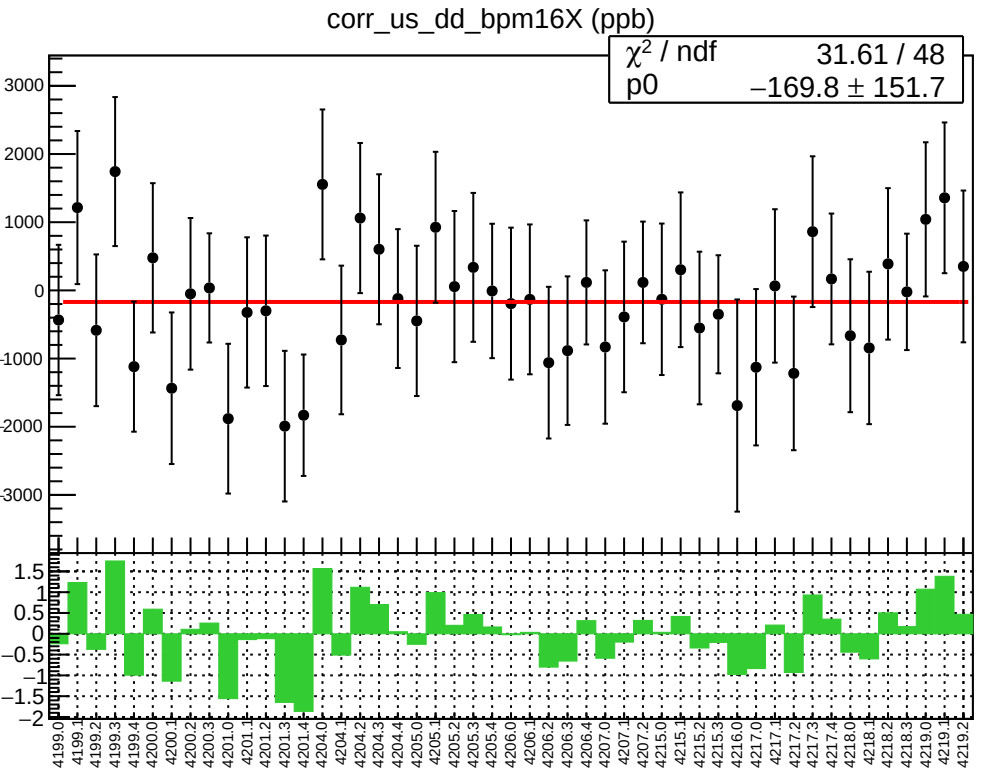

1D pull distribution
Mean −0.008315 ± 0.1431
Std Dev 1.002 ± 0.1012
Underflow 0
Overflow 0
χ² / ndf 3.509 / 7
Constant 8.824 ± 1.782
Mean −0.0003446 ± 0.1749600
Sigma 1.114 ± 0.171
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8


corr_us_dd_bpm1X RMS (ppm)
RMS (ppm)
210
200
190
180
170
160
150
140


corr_us_dd_bpm1Y (ppb)
χ² / ndf 41.05 / 48
p0 −1.378 ± 15.69


1D pull distribution
Mean −0.0141 ± 0.1307
Std Dev 0.9152 ± 0.09245
Underflow 0
Overflow 0
χ² / ndf 7.561 / 6
Constant 17.42 ± 3.76
Mean 0.09379 ± 0.07868
Sigma 0.5061 ± 0.0759


corr_us_dd_bpm1Y RMS (ppm)
RMS (ppm)
25
20
15
10
5


corr_us_dd_bpm16X (ppb)
χ² / ndf 31.61 / 48
p0 −169.8 ± 151.7
3000
2000
1000
0
-1000
-2000
-3000
1.5
1
0.5
0
−0.5
−1
−1.5
−2
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
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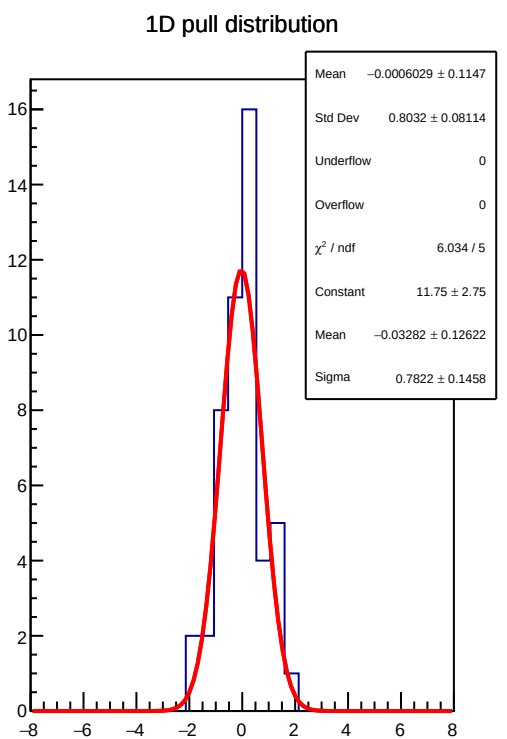
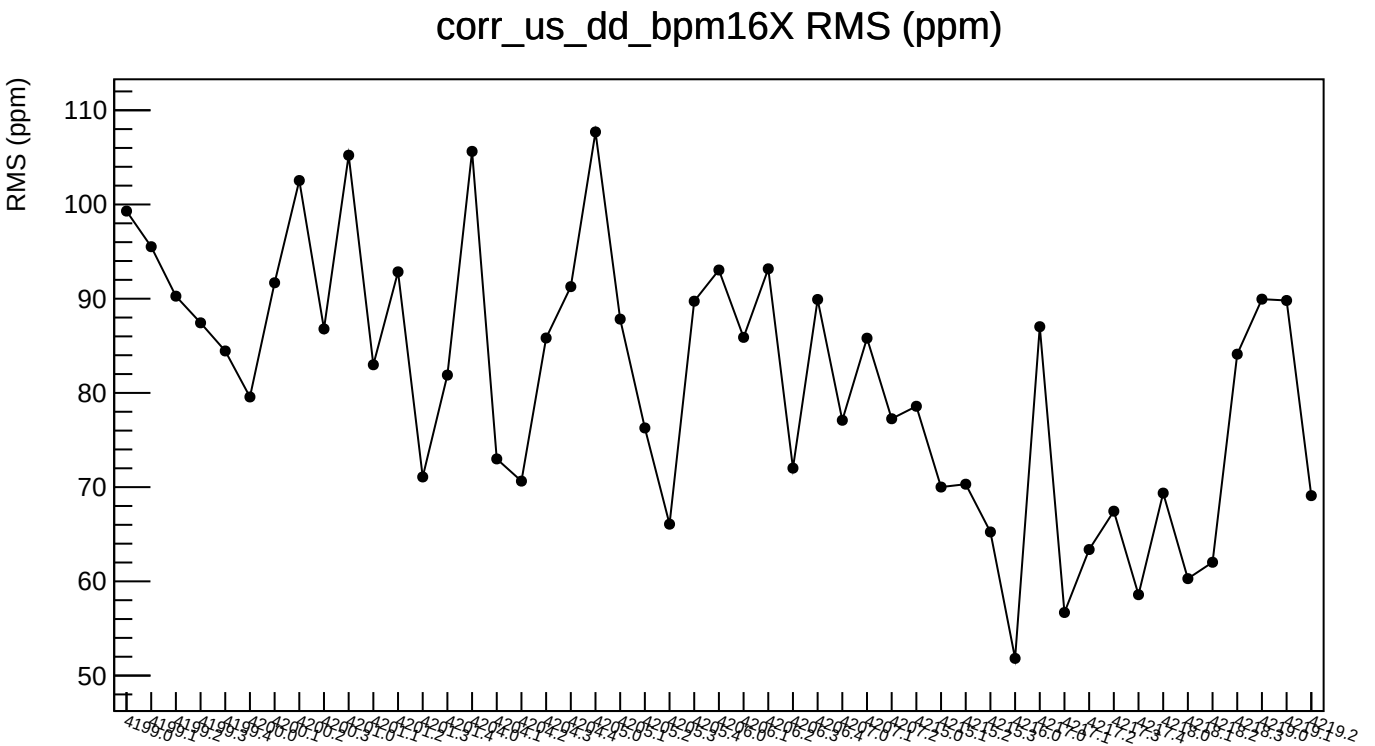
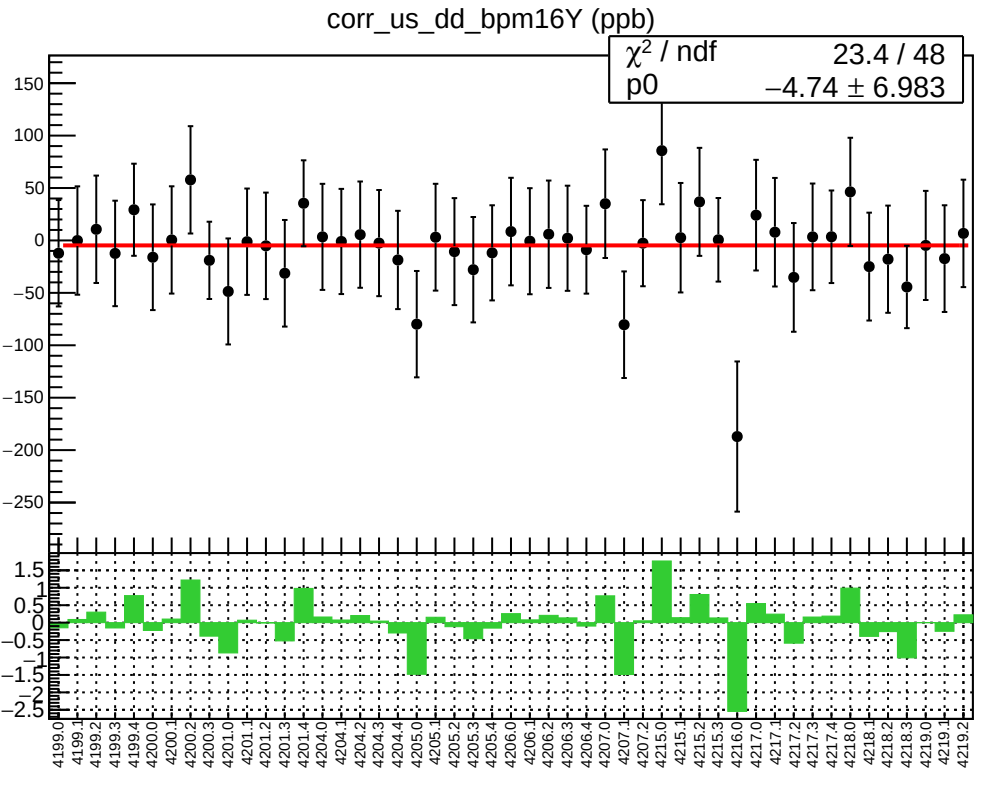
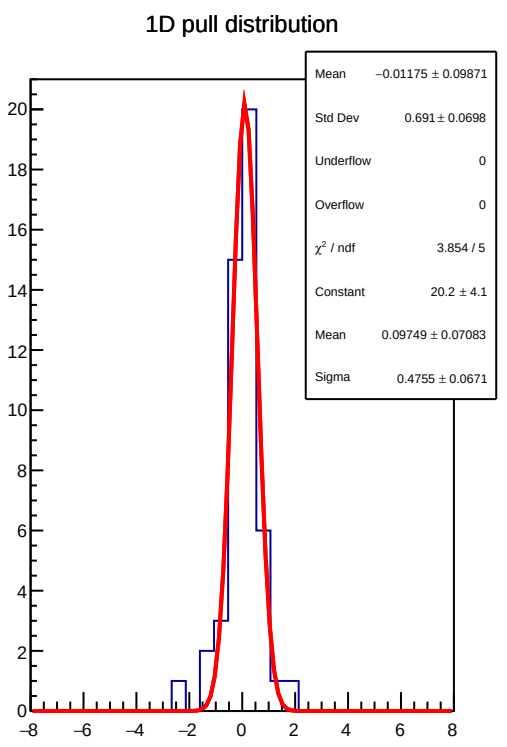
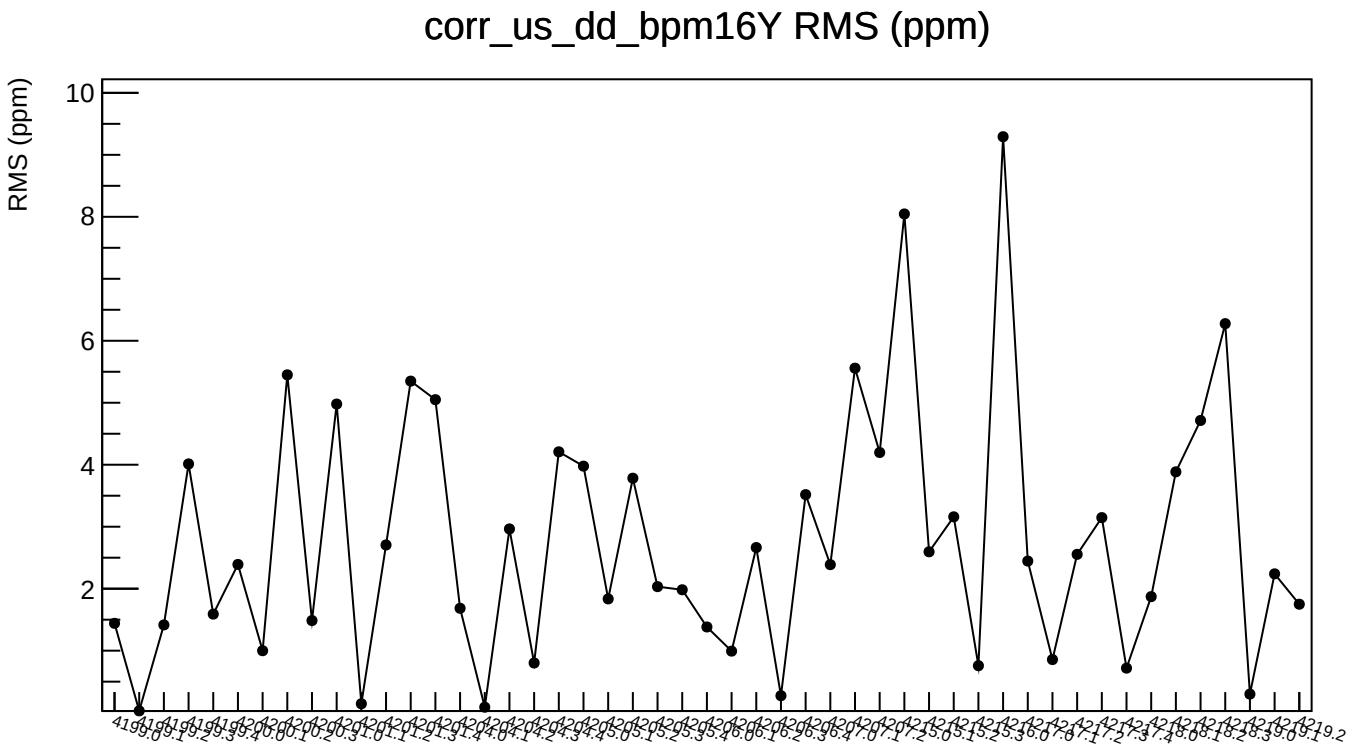
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

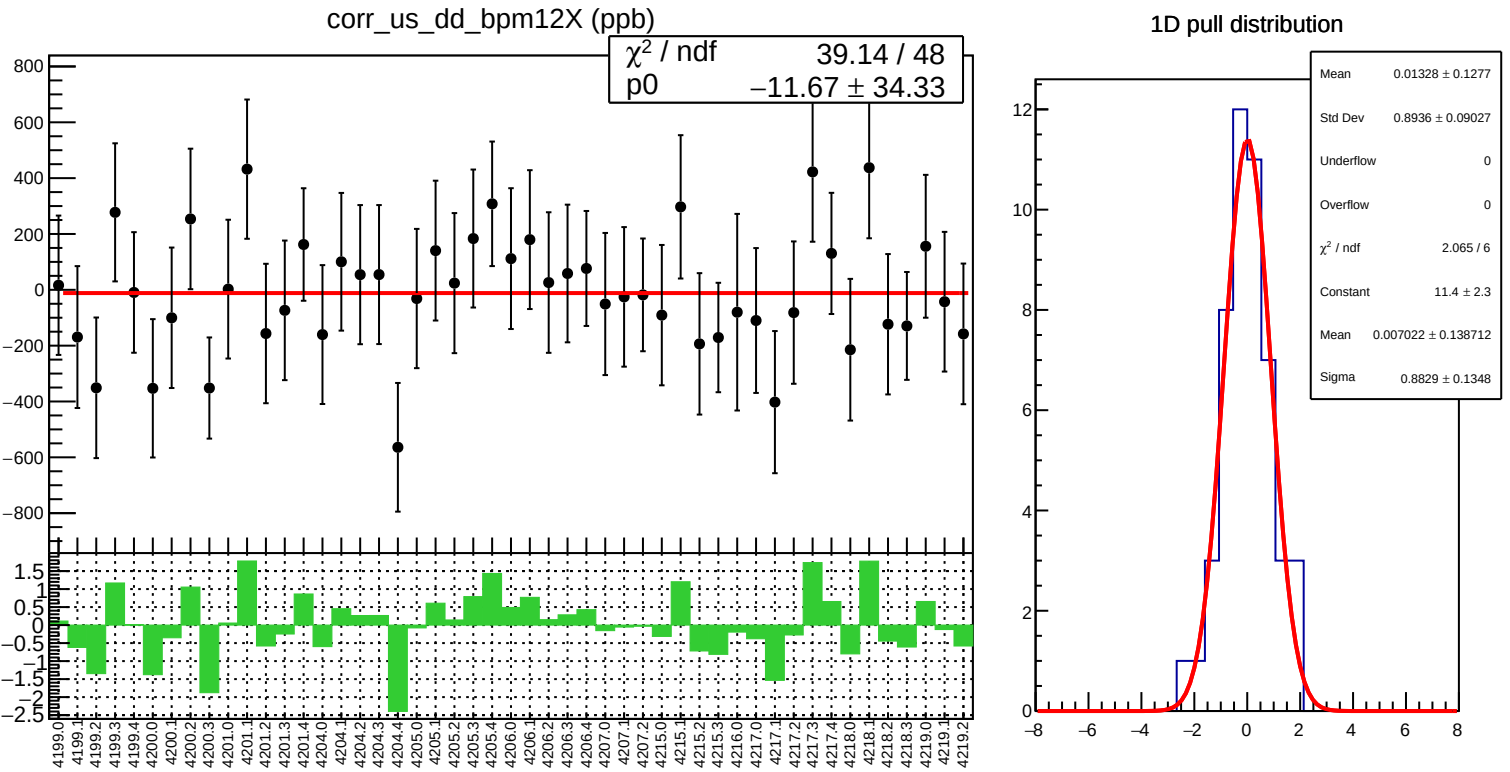

1D pull distribution
Mean −0.0006029 ± 0.1147
Std Dev 0.8032 ± 0.08114
Underflow 0
Overflow 0
χ² / ndf 6.034 / 5
Constant 11.75 ± 2.75
Mean −0.03282 ± 0.12622
Sigma 0.7822 ± 0.1458
16
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

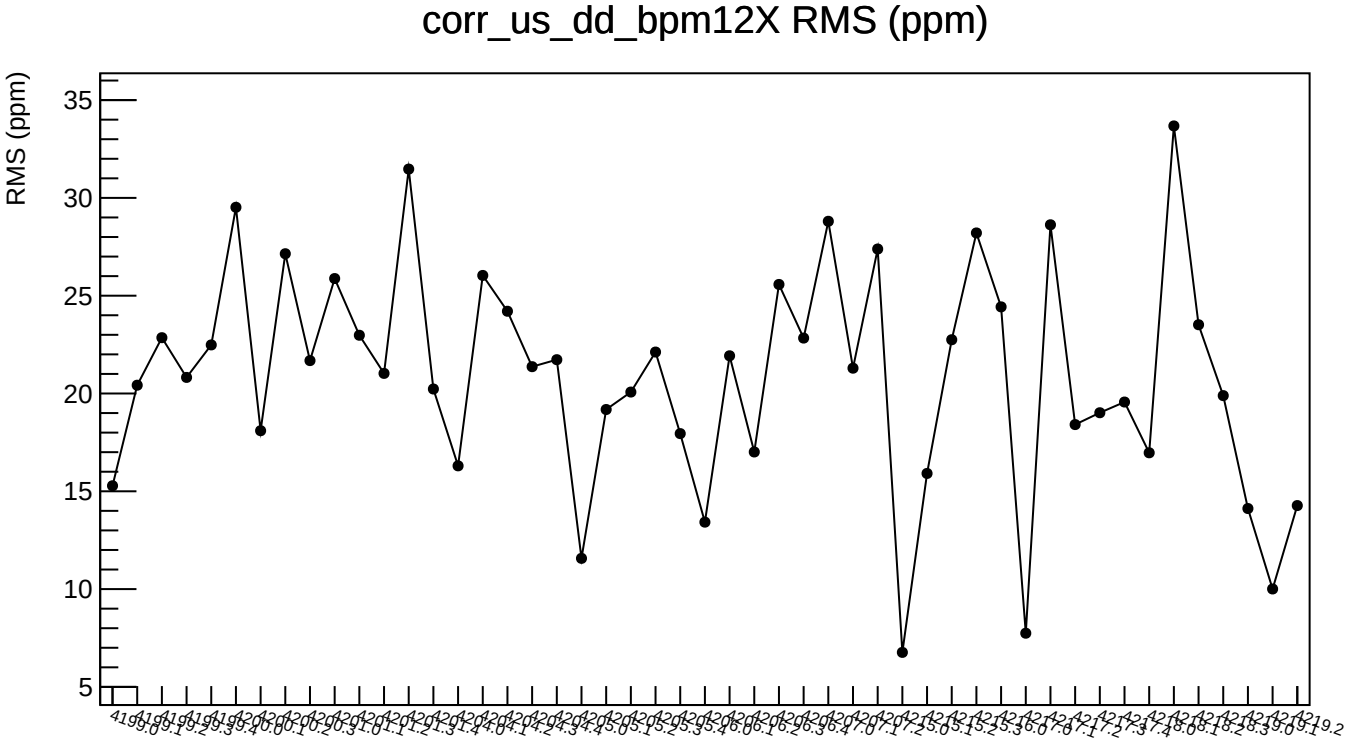

corr_us_dd_bpm16X RMS (ppm)
RMS (ppm)
110
100
90
80
70
60
50

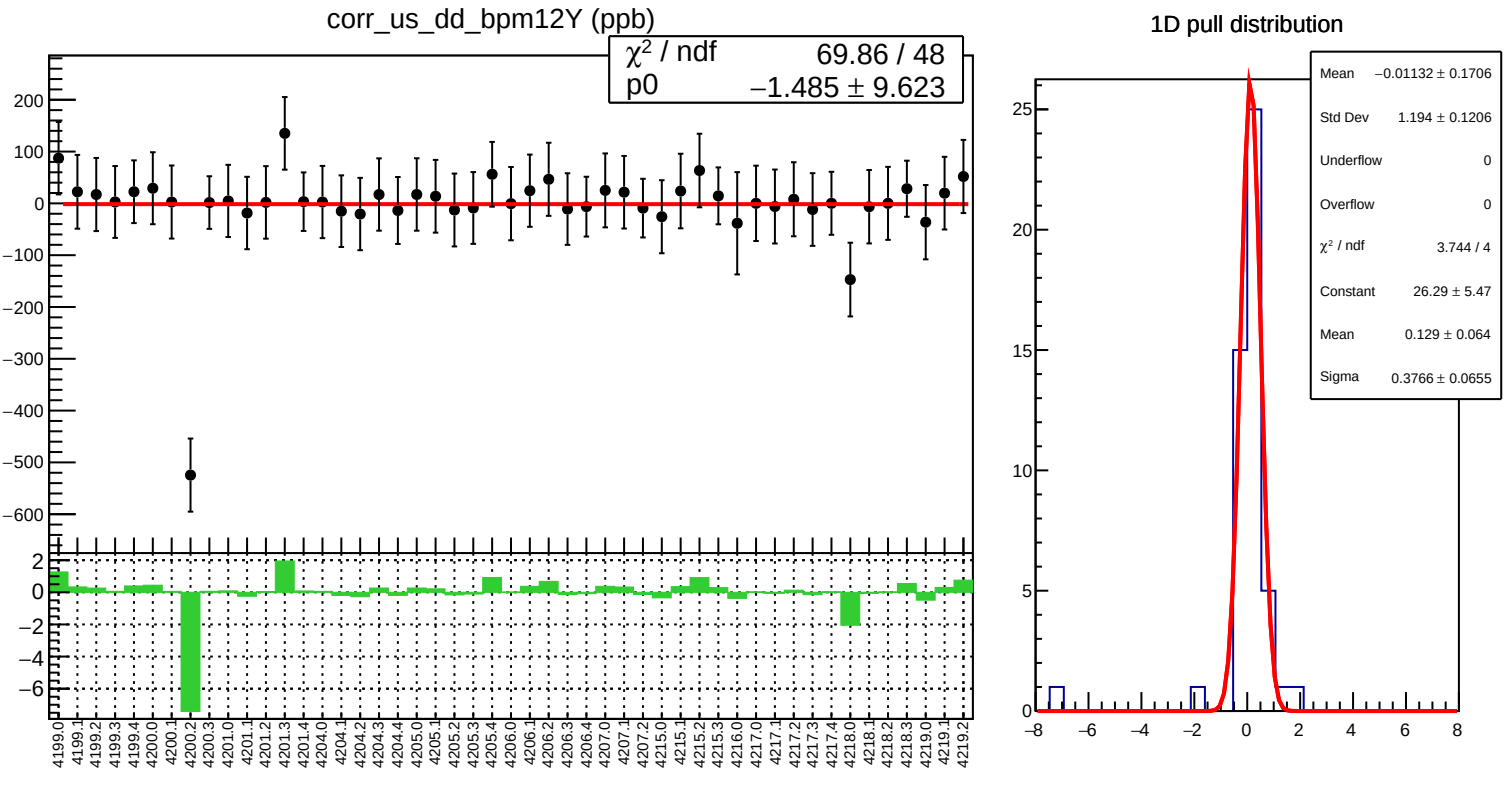

corr_us_dd_bpm16Y (ppb)
χ² / ndf 23.4 / 48
p0 −4.74 ± 6.983

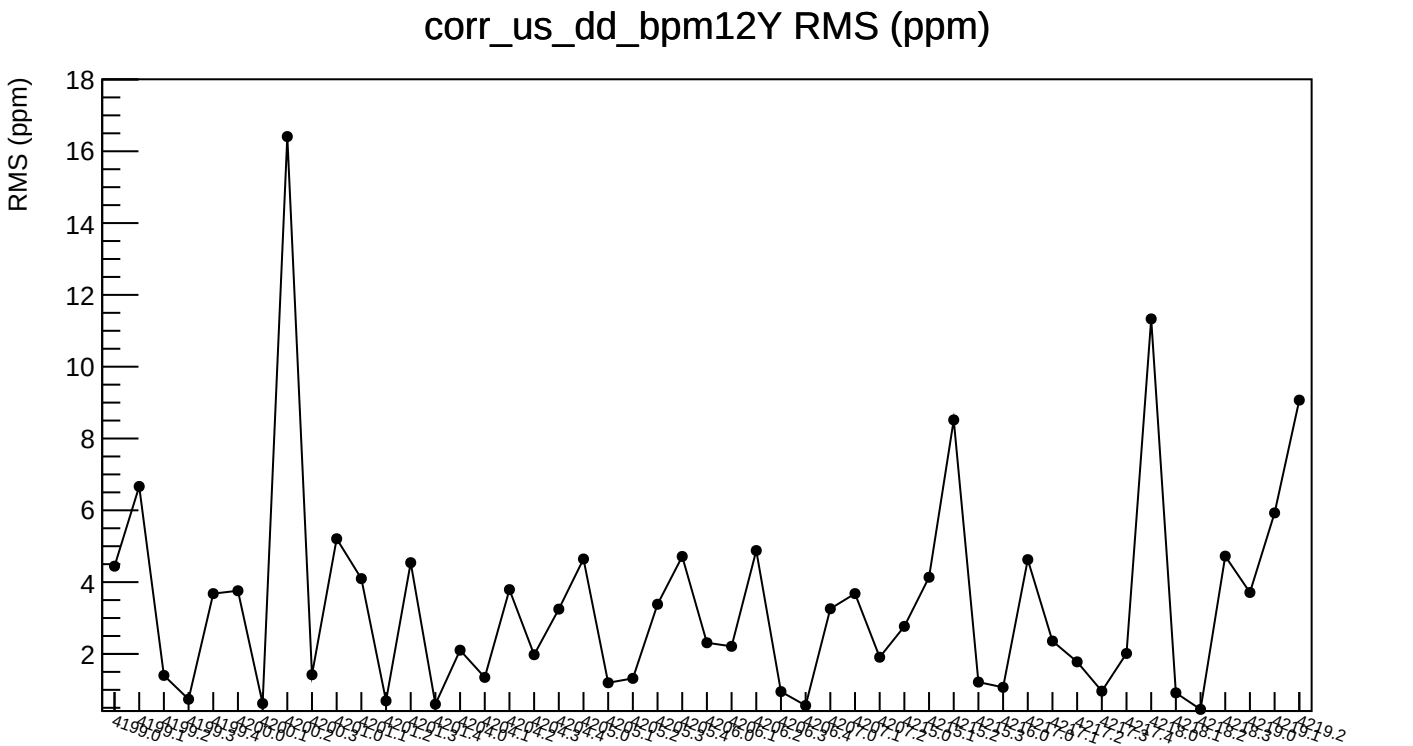

1D pull distribution
Mean −0.01175 ± 0.09871
Std Dev 0.691 ± 0.0698
Underflow 0
Overflow 0
χ² / ndf 3.854 / 5
Constant 20.2 ± 4.1
Mean 0.09749 ± 0.07083
Sigma 0.4755 ± 0.0671

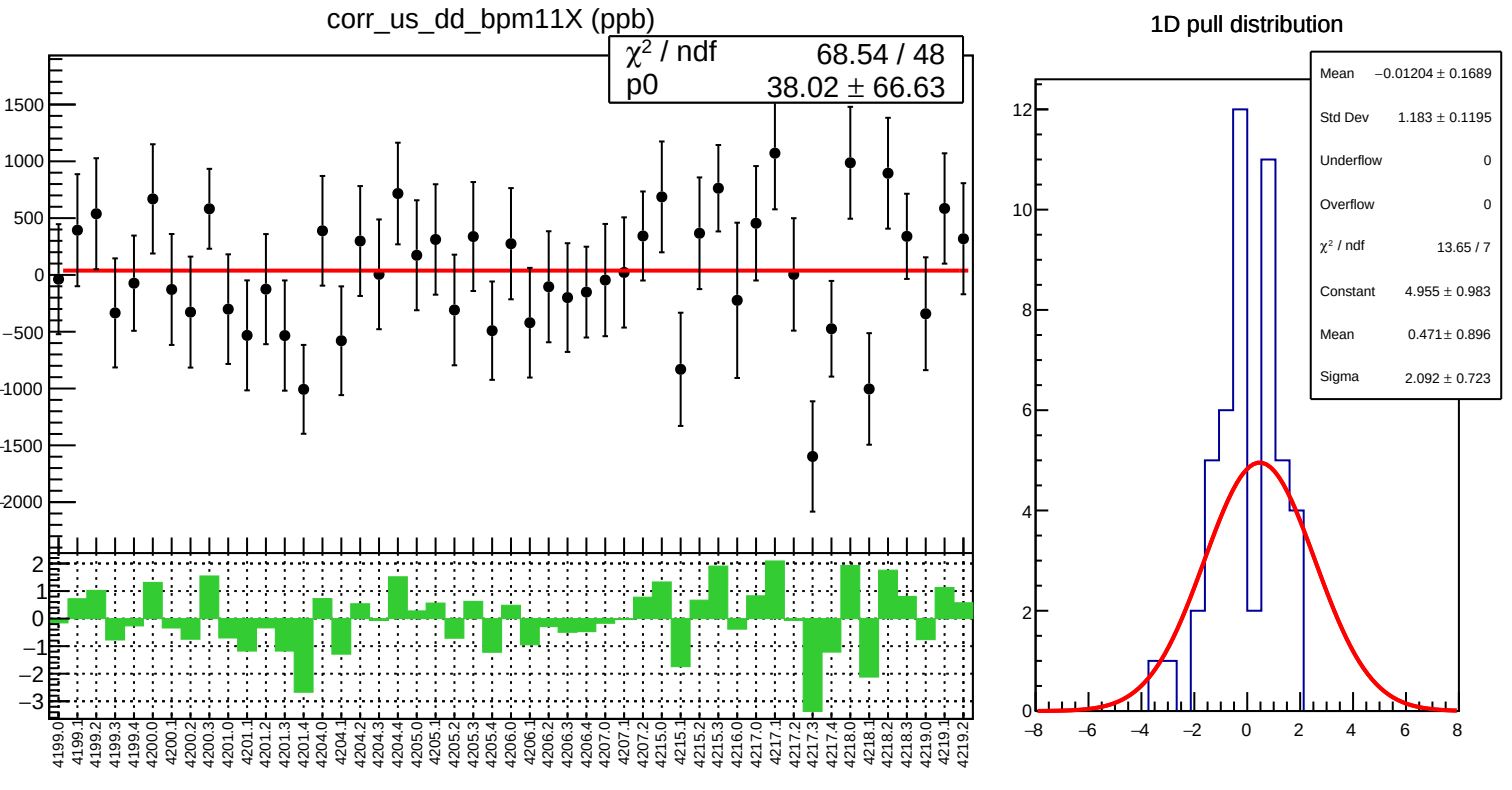

corr_us_dd_bpm16Y RMS (ppm)
RMS (ppm)
10
8
6
4
2

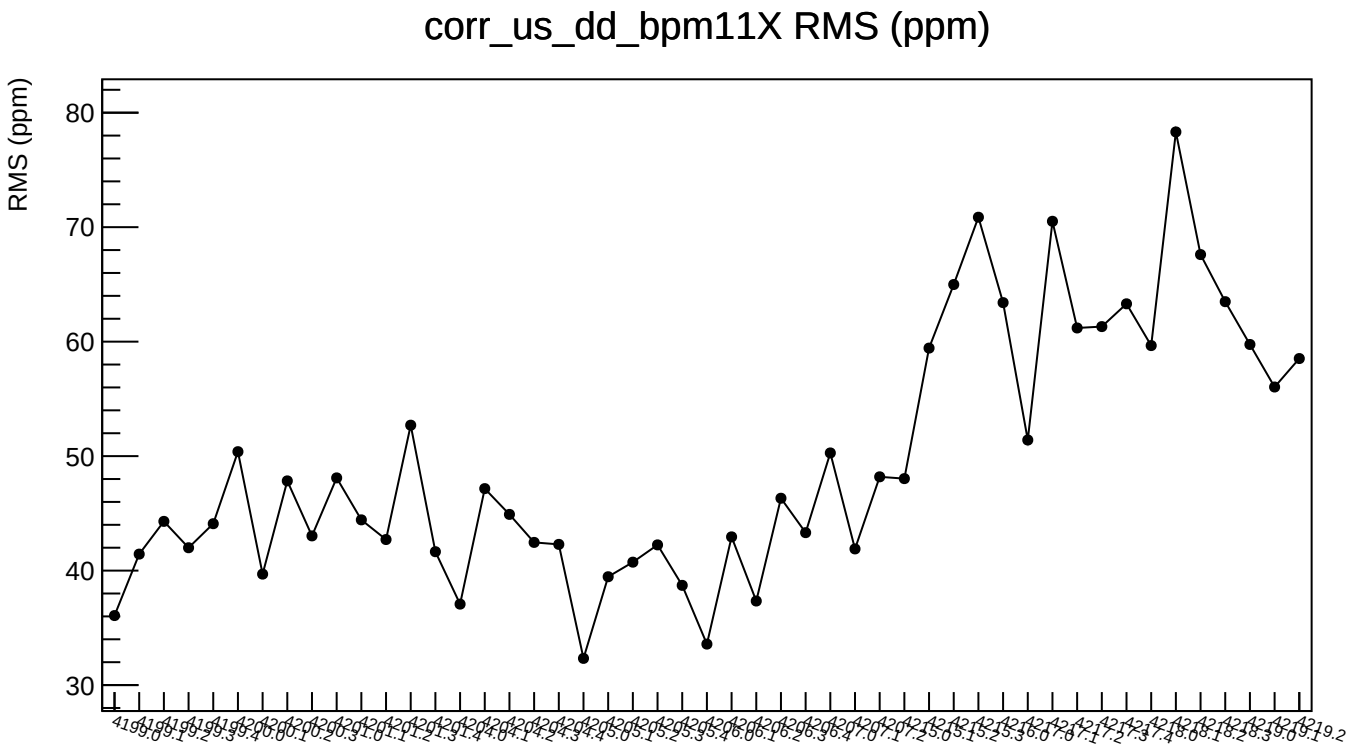

corr_us_dd_bpm12X (ppb)
χ² / ndf 39.14 / 48
p0 −11.67 ± 34.33
1D pull distribution
Mean 0.01328 ± 0.1277
Std Dev 0.8936 ± 0.09027
Underflow 0
Overflow 0
χ² / ndf 2.065 / 6
Constant 11.4 ± 2.3
Mean 0.007022 ± 0.138712
Sigma 0.8829 ± 0.1348

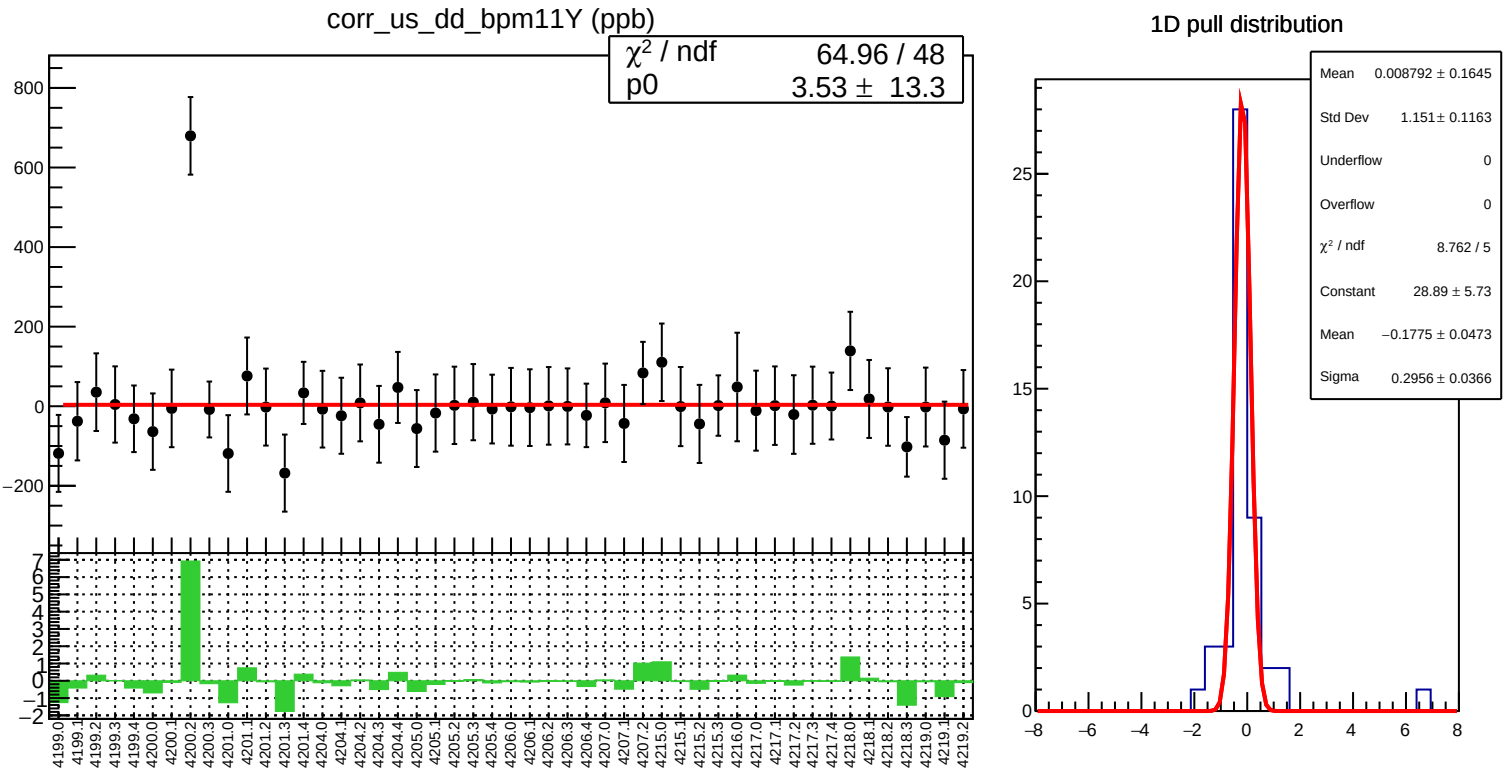

corr_us_dd_bpm12X RMS (ppm)
RMS (ppm)
35
30
25
20
15
10
5

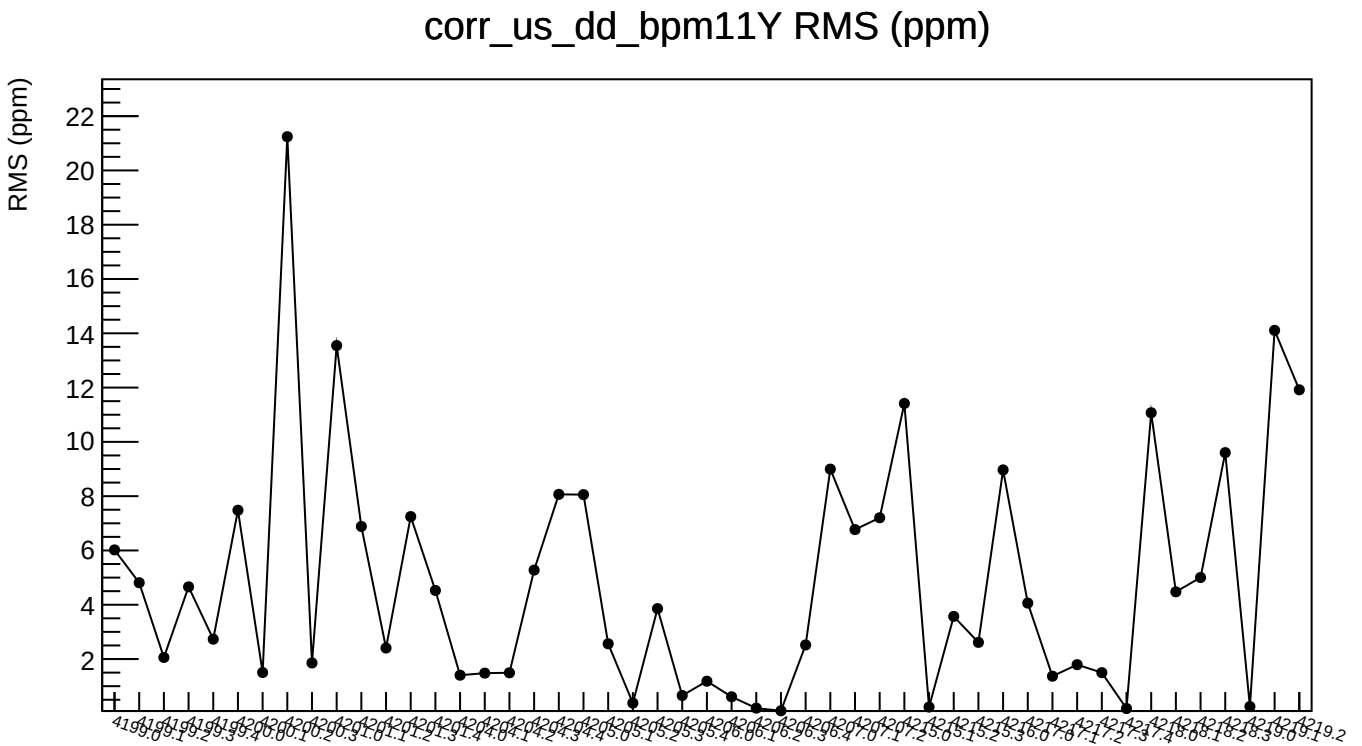

corr_us_dd_bpm12Y (ppb)
χ² / ndf 69.86 / 48
p0 −1.485 ± 9.623
1D pull distribution
Mean −0.01132 ± 0.1706
Std Dev 1.194 ± 0.1206
Underflow 0
Overflow 0
χ² / ndf 3.744 / 4
Constant 26.29 ± 5.47
Mean 0.129 ± 0.064
Sigma 0.3766 ± 0.0655

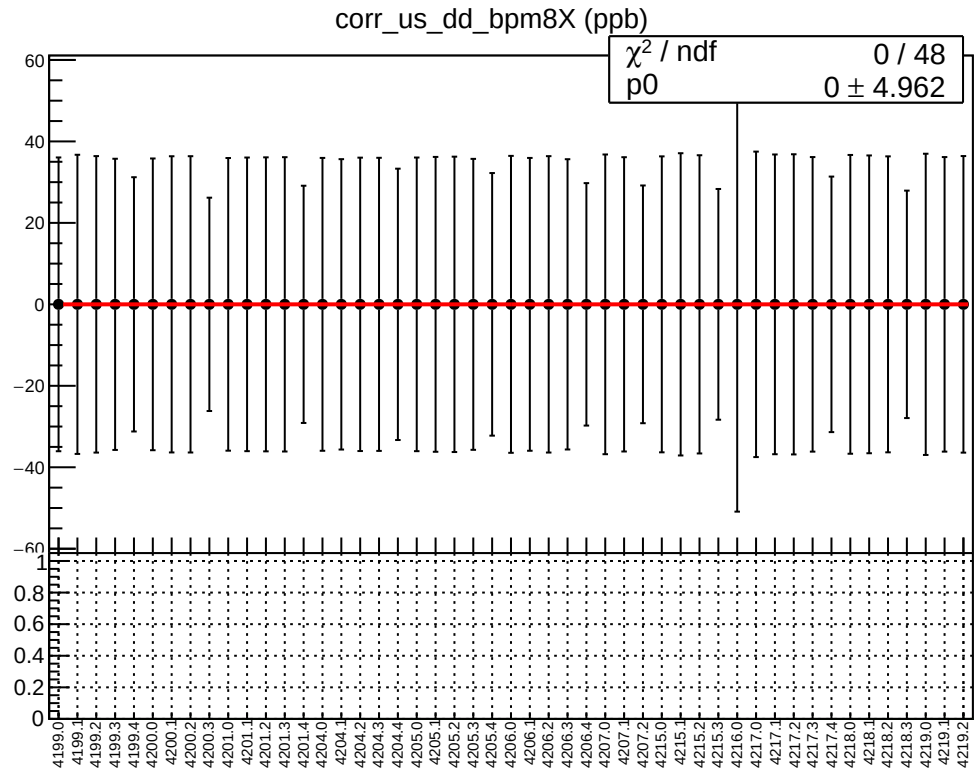

corr_us_dd_bpm12Y RMS (ppm)
RMS (ppm)
18
16
14
12
10
8
6
4
2

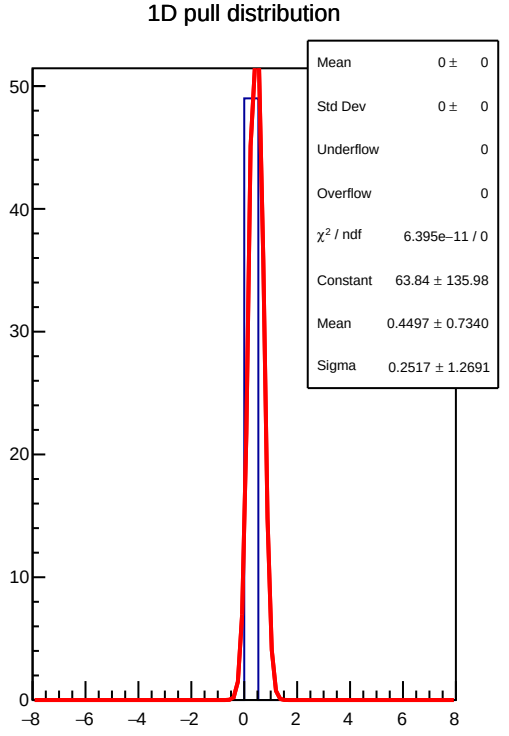

corr_us_dd_bpm11X (ppb)
χ² / ndf 68.54 / 48
p0 38.02 ± 66.63
1500
1000
500
0
−500
−1000
−1500
−2000
2
1
0
−1
−2
−3
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2
1D pull distribution
Mean −0.01204 ± 0.1689
Std Dev 1.183 ± 0.1195
Underflow 0
Overflow 0
χ² / ndf 13.65 / 7
Constant 4.955 ± 0.983
Mean 0.471 ± 0.896
Sigma 2.092 ± 0.723
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

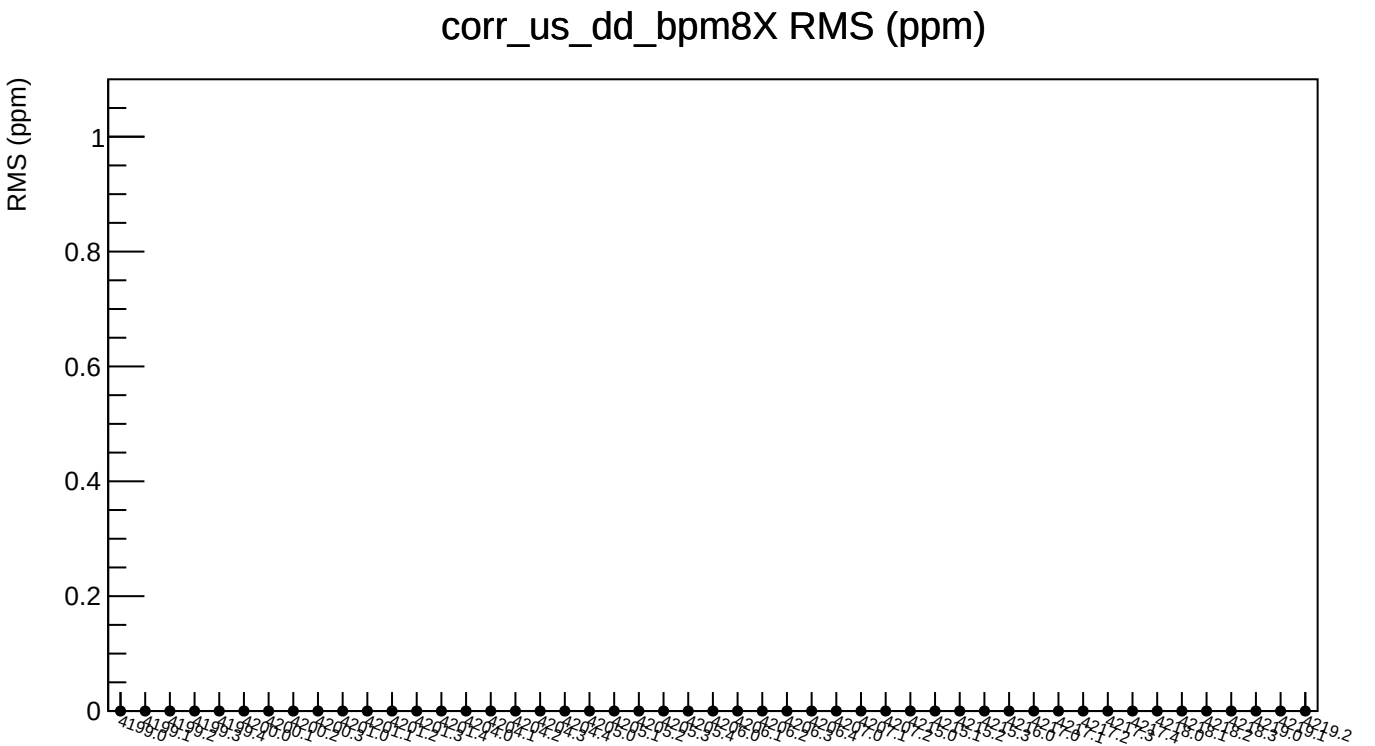

corr_us_dd_bpm11X RMS (ppm)
RMS (ppm)
80
70
60
50
40
30

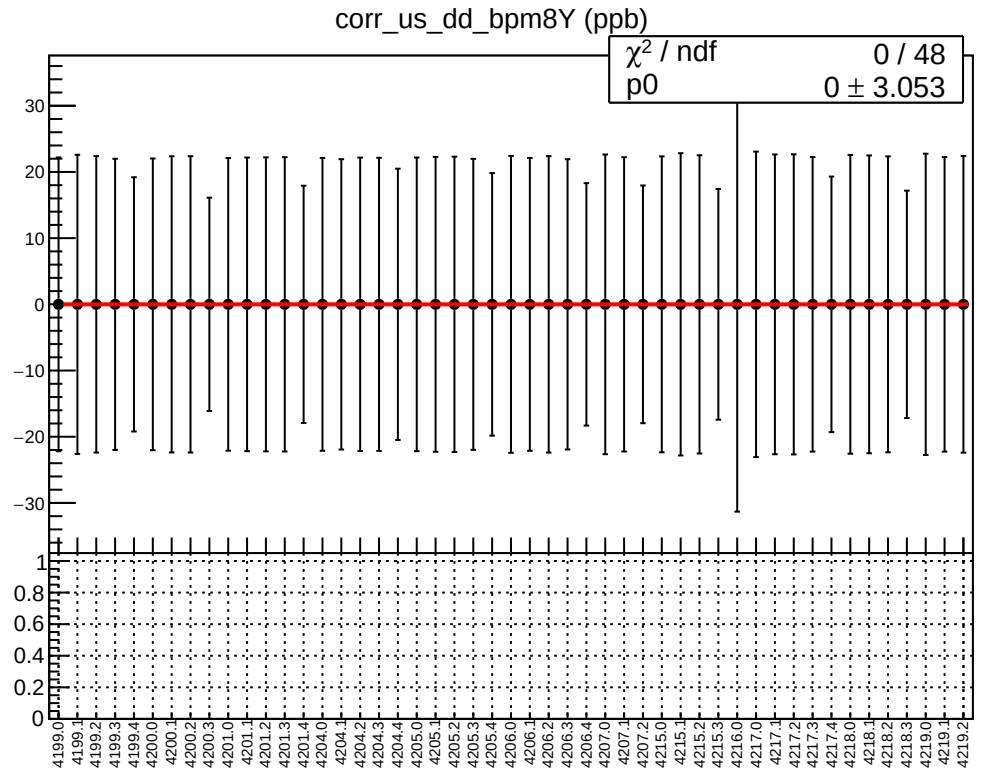

corr_us_dd_bpm11Y (ppb)
χ² / ndf 64.96 / 48
p0 3.53 ± 13.3
1D pull distribution
Mean 0.008792 ± 0.1645
Std Dev 1.151 ± 0.1163
Underflow 0
Overflow 0
χ² / ndf 8.762 / 5
Constant 28.89 ± 5.73
Mean −0.1775 ± 0.0473
Sigma 0.2956 ± 0.0366

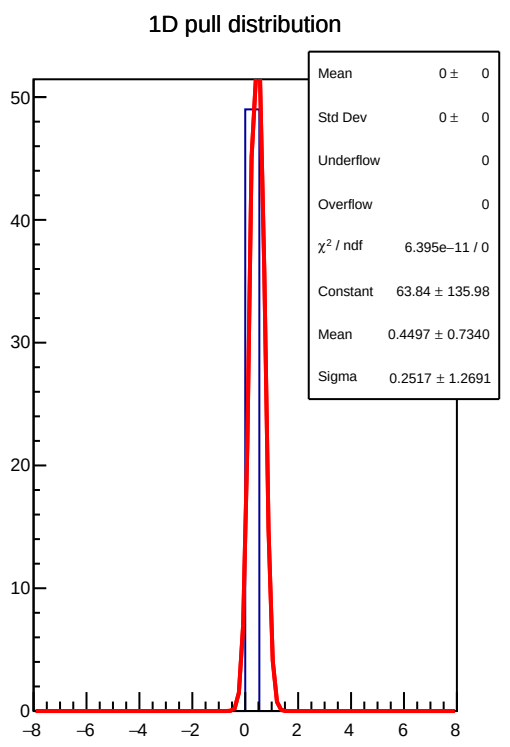

corr_us_dd_bpm11Y RMS (ppm)
RMS (ppm)
22
20
18
16
14
12
10
8
6
4
2

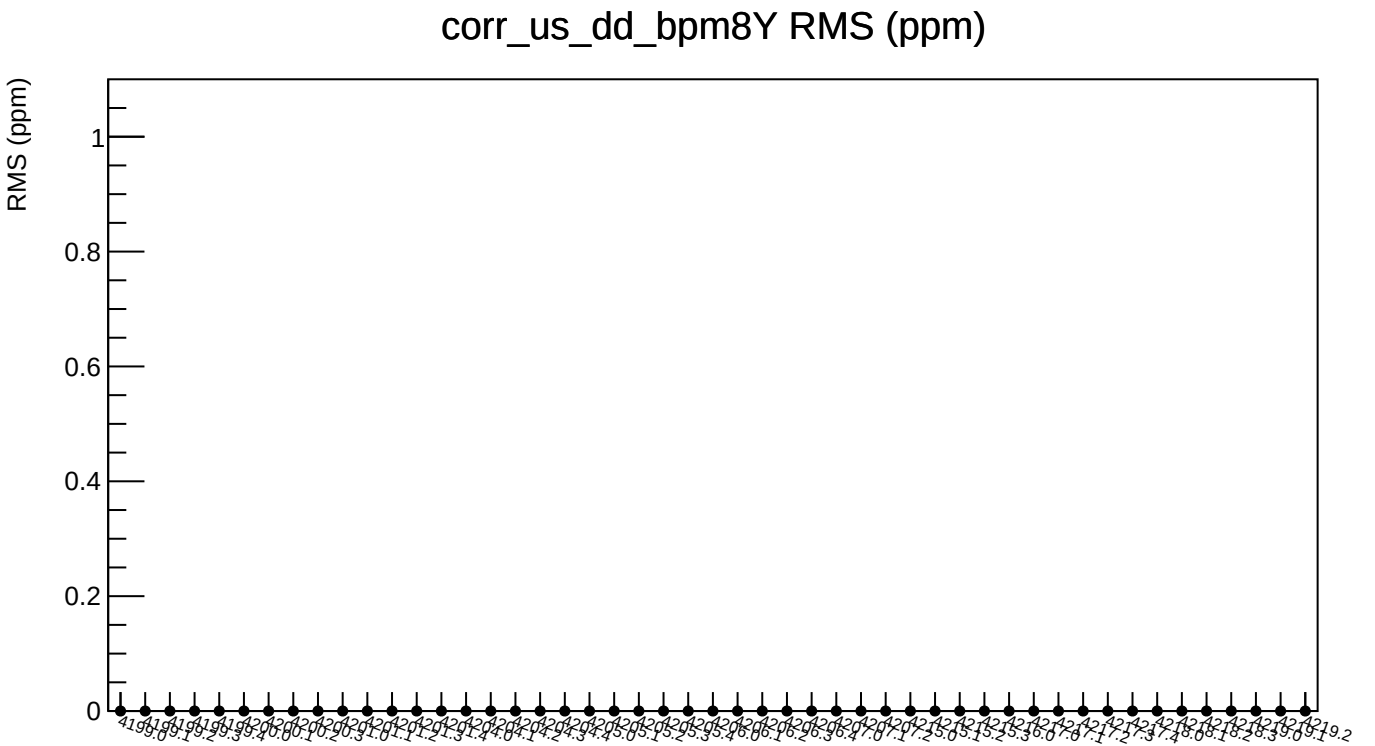

corr_us_dd_bpm8X (ppb)
χ² / ndf 0 / 48
p0 0 ± 4.962
60
40
20
0
−20
−40
−60
1
0.8
0.6
0.4
0.2
0
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

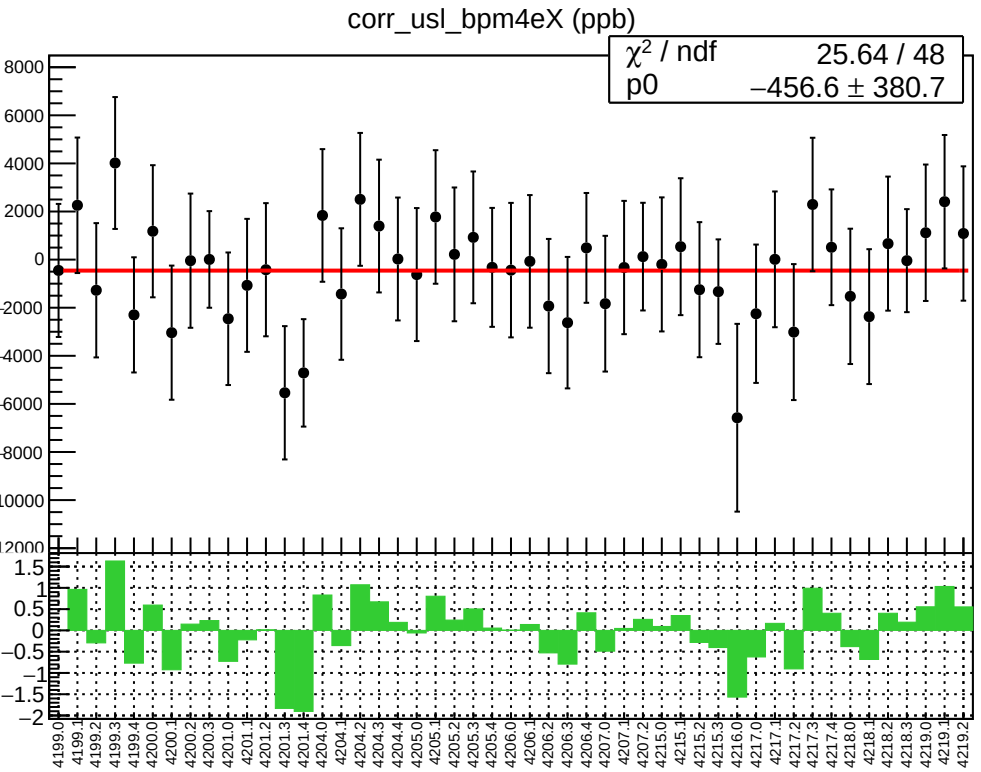

1D pull distribution
Mean 0 ± 0
Std Dev 0 ± 0
Underflow 0
Overflow 0
χ² / ndf 6.395e−11 / 0
Constant 63.84 ± 135.98
Mean 0.4497 ± 0.7340
Sigma 0.2517 ± 1.2691
50
40
30
20
10
0
−8
−6
−4
−2
0
2
4
6
8

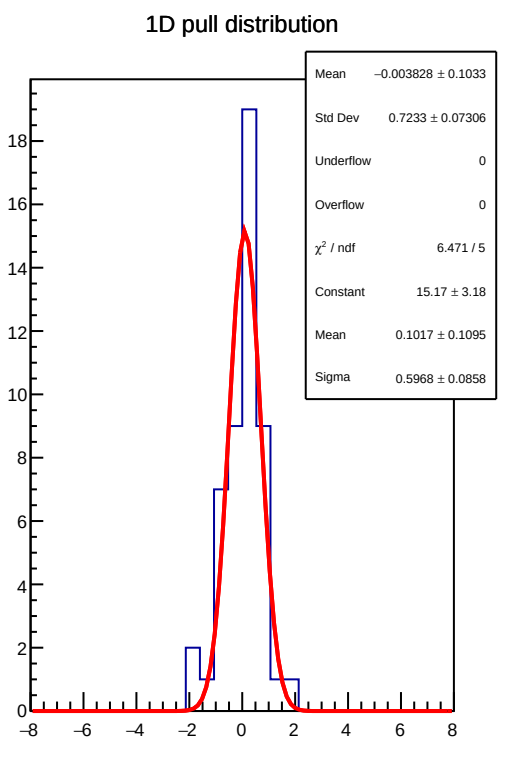

corr_us_dd_bpm8X RMS (ppm)
RMS (ppm)
1
0.8
0.6
0.4
0.2
0

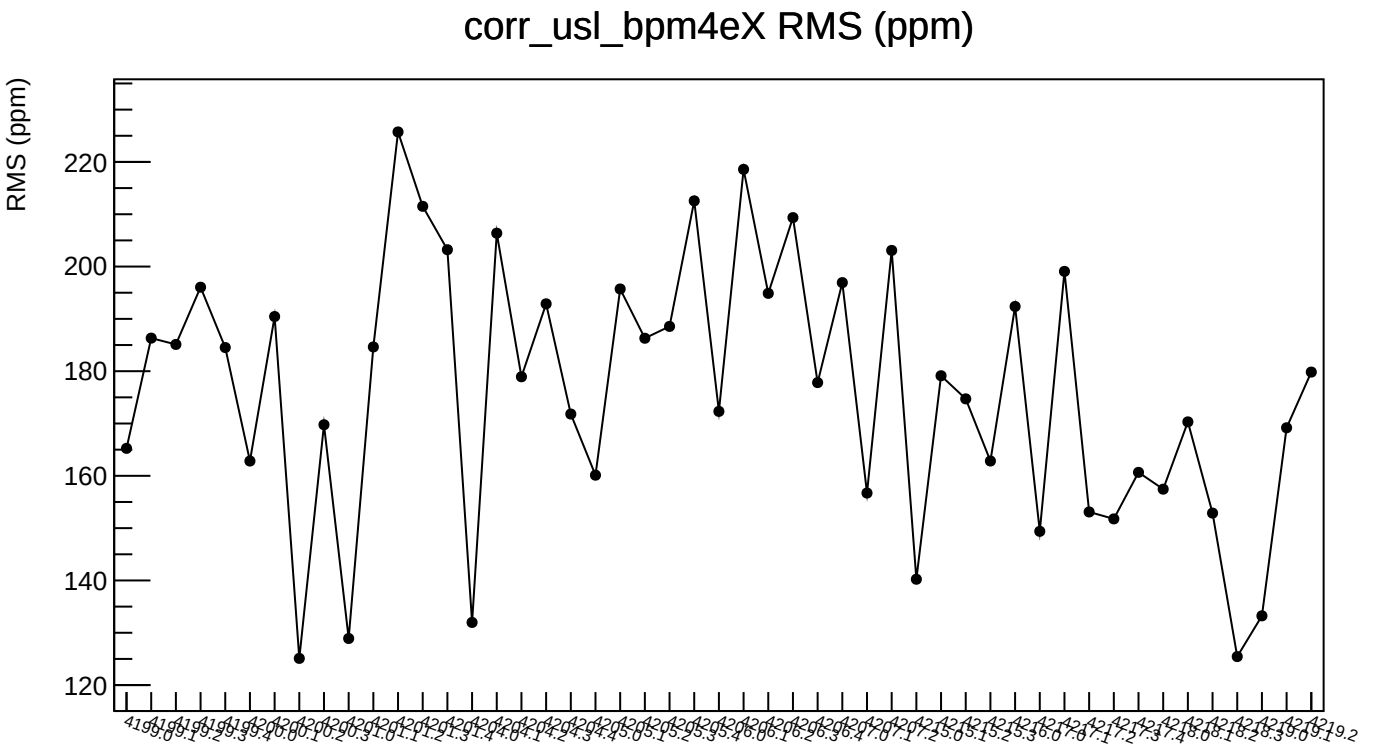

corr_us_dd_bpm8Y (ppb)
χ² / ndf 0 / 48
p0 0 ± 3.053

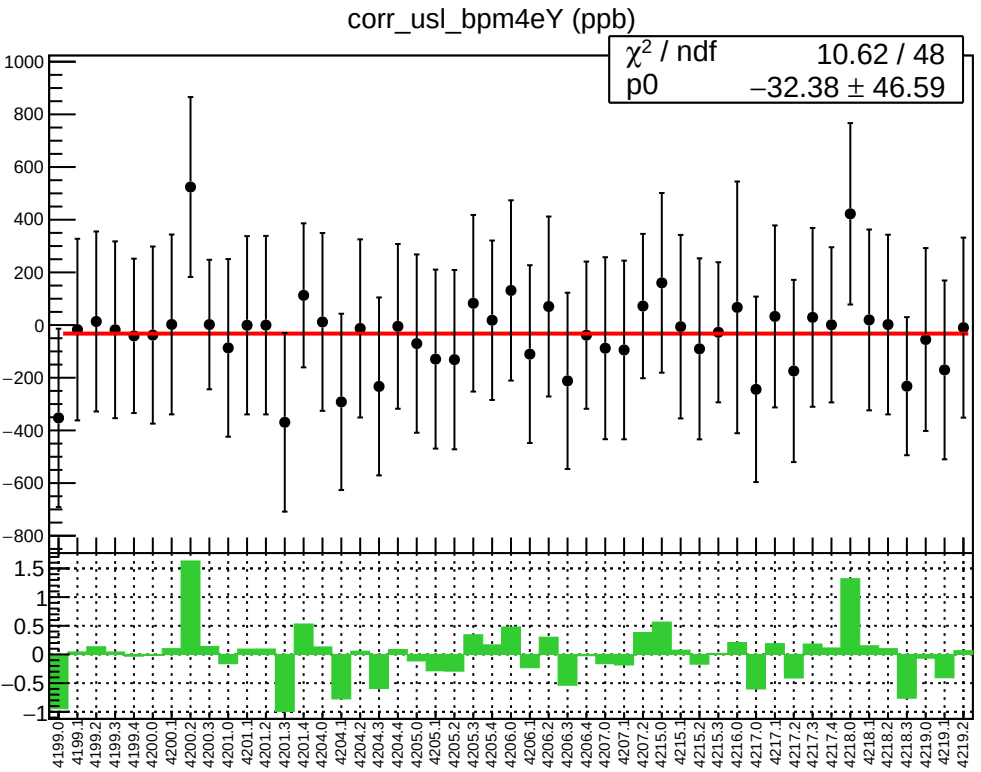

1D pull distribution
Mean 0 ± 0
Std Dev 0 ± 0
Underflow 0
Overflow 0
χ² / ndf 6.395e−11 / 0
Constant 63.84 ± 135.98
Mean 0.4497 ± 0.7340
Sigma 0.2517 ± 1.2691

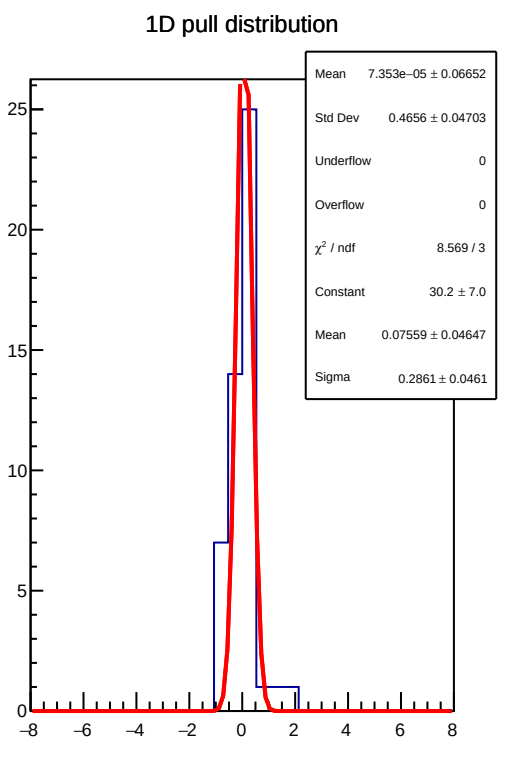

corr_us_dd_bpm8Y RMS (ppm)
RMS (ppm)
1
0.8
0.6
0.4
0.2
0

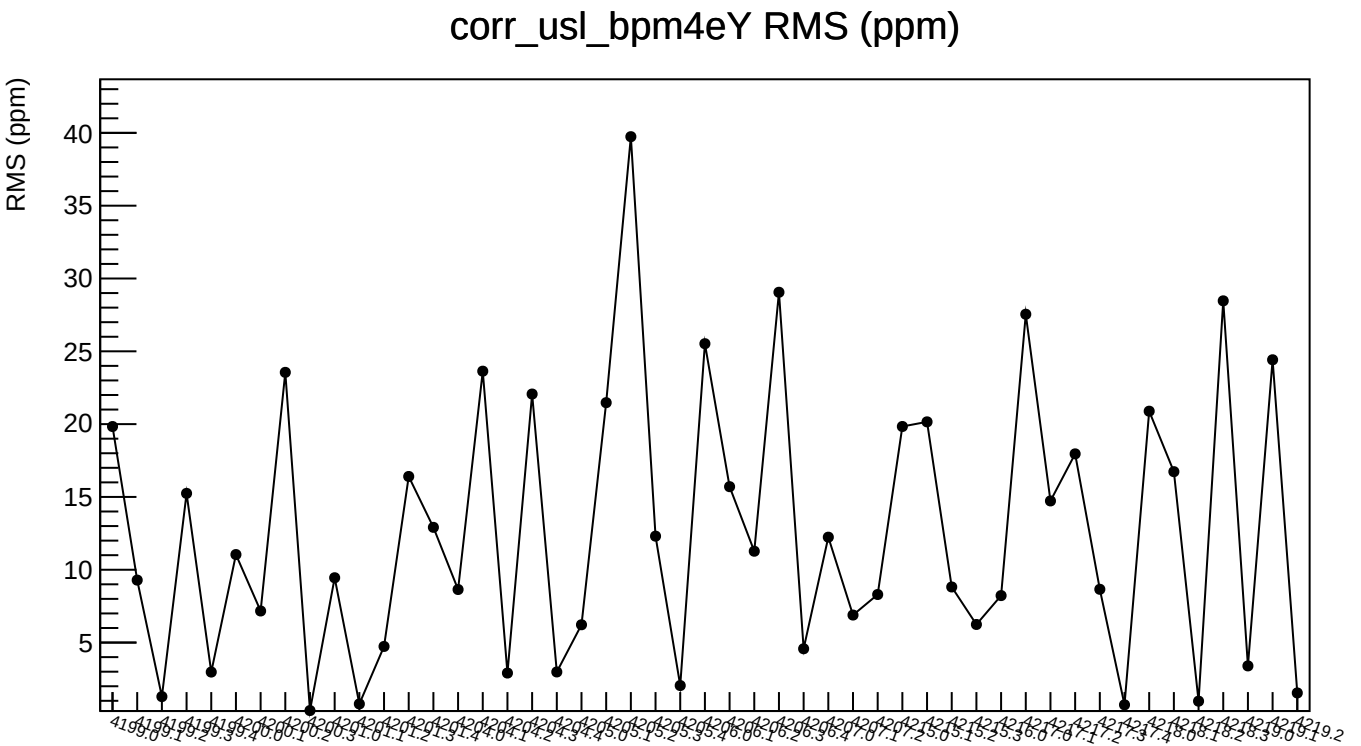

corr_usl_bpm4eX (ppb)
χ² / ndf 25.64 / 48
p0 −456.6 ± 380.7

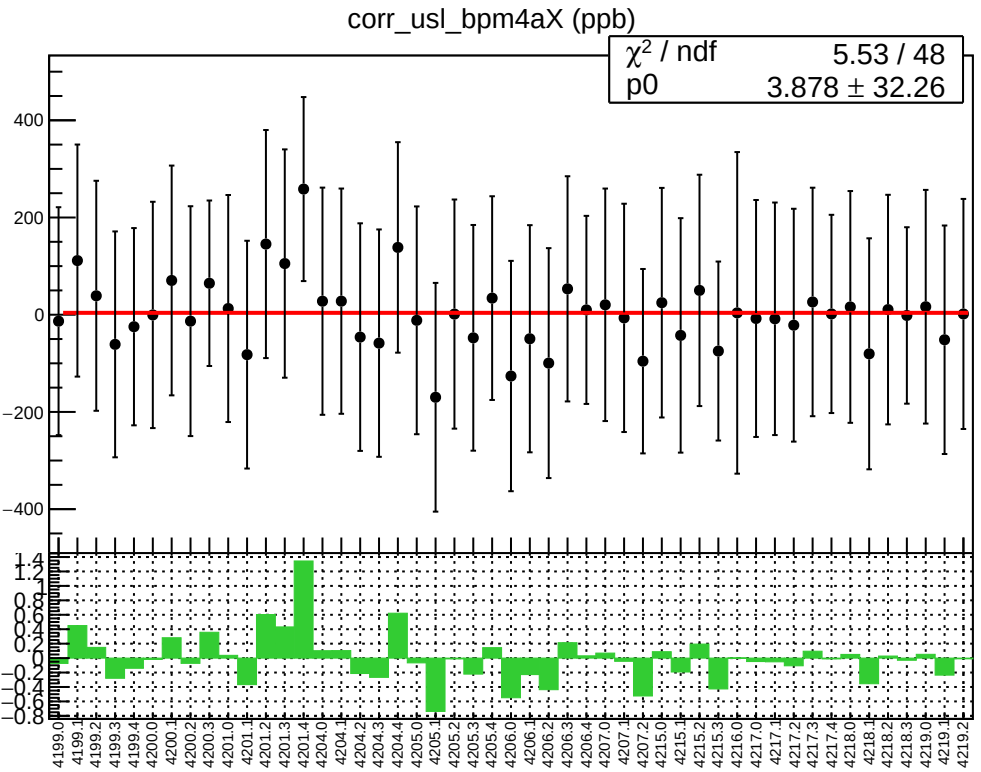

1D pull distribution
Mean −0.003828 ± 0.1033
Std Dev 0.7233 ± 0.07306
Underflow 0
Overflow 0
χ² / ndf 6.471 / 5
Constant 15.17 ± 3.18
Mean 0.1017 ± 0.1095
Sigma 0.5968 ± 0.0858

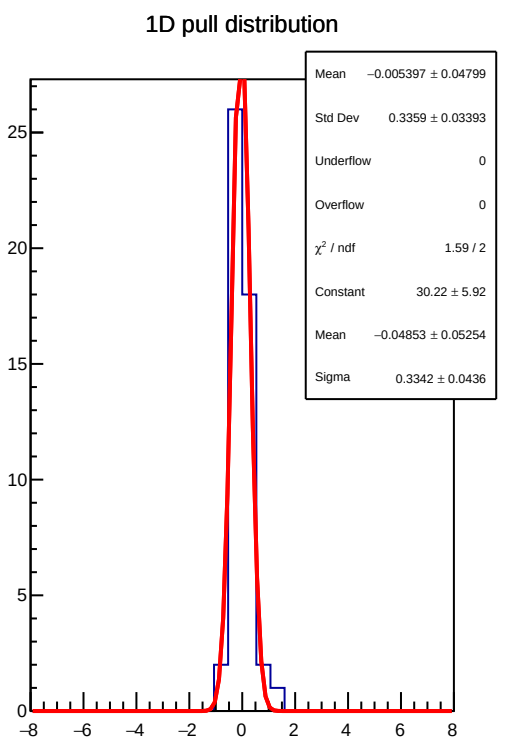

corr_usl_bpm4eX RMS (ppm)
RMS (ppm)
220
200
180
160
140
120

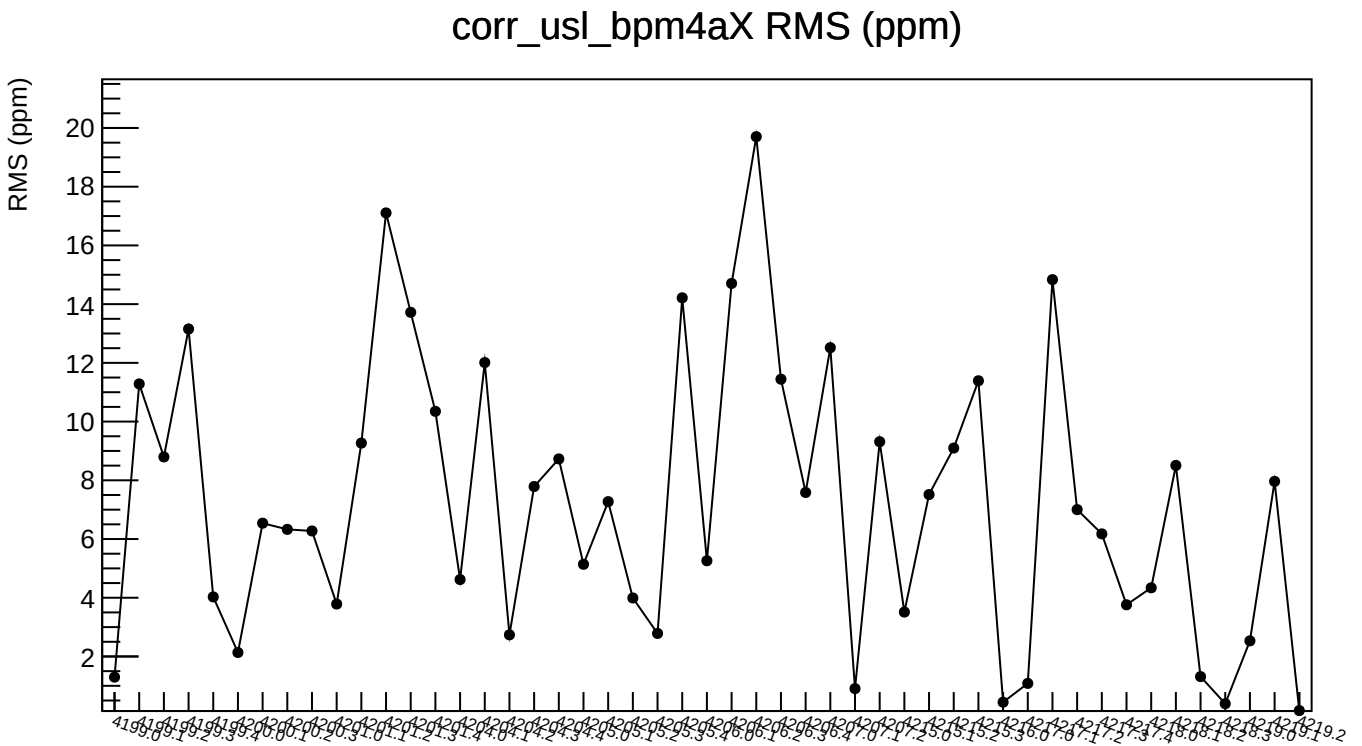

corr_usl_bpm4eY (ppb)
χ² / ndf 10.62 / 48
p0 −32.38 ± 46.59
1000
800
600
400
200
0
−200
−400
−600
−800
1.5
1
0.5
0
−0.5
−1
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

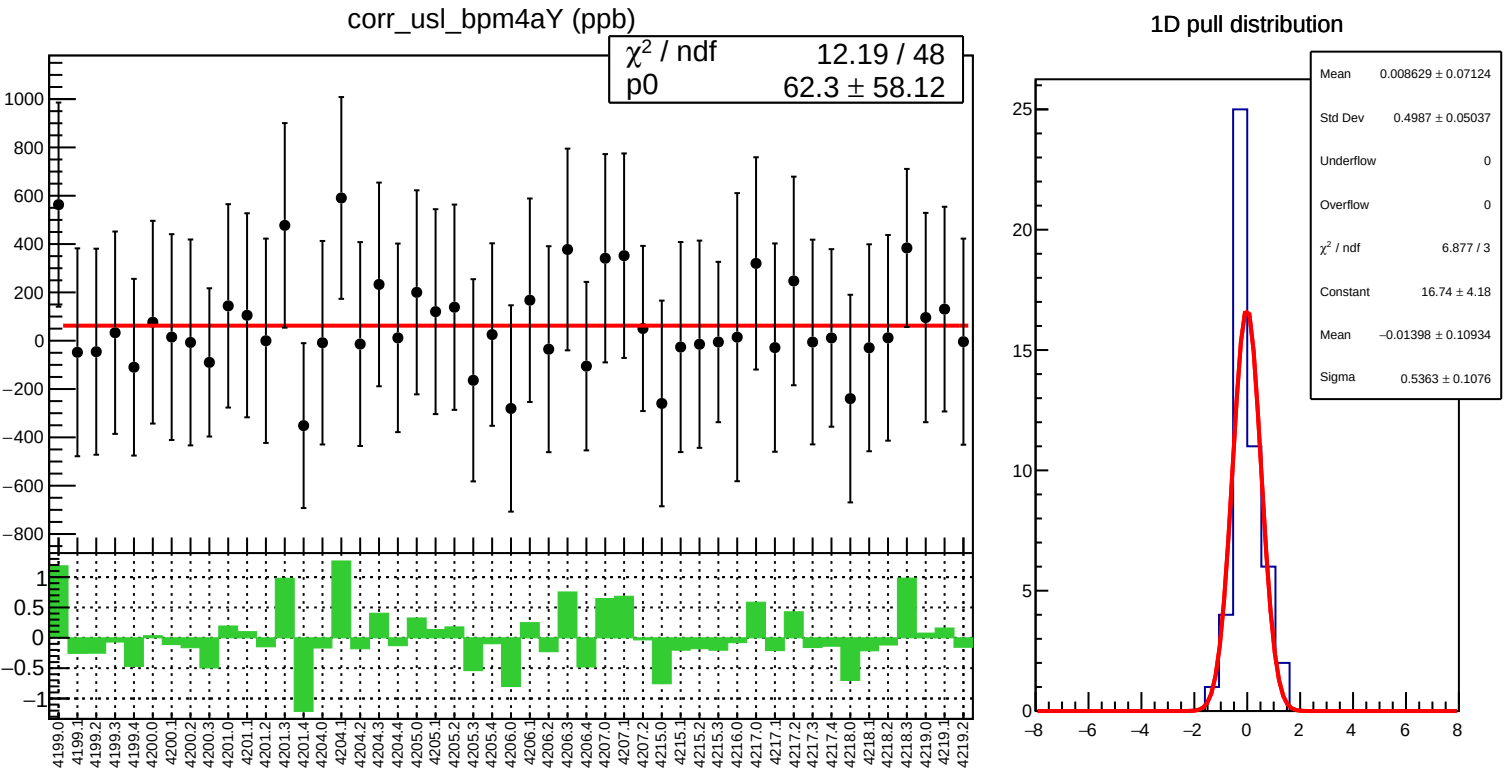

1D pull distribution
Mean 7.353e−05 ± 0.06652
Std Dev 0.4656 ± 0.04703
Underflow 0
Overflow 0
χ² / ndf 8.569 / 3
Constant 30.2 ± 7.0
Mean 0.07559 ± 0.04647
Sigma 0.2861 ± 0.0461
25
20
15
10
5
0
−8
−6
−4
−2
0
2
4
6
8

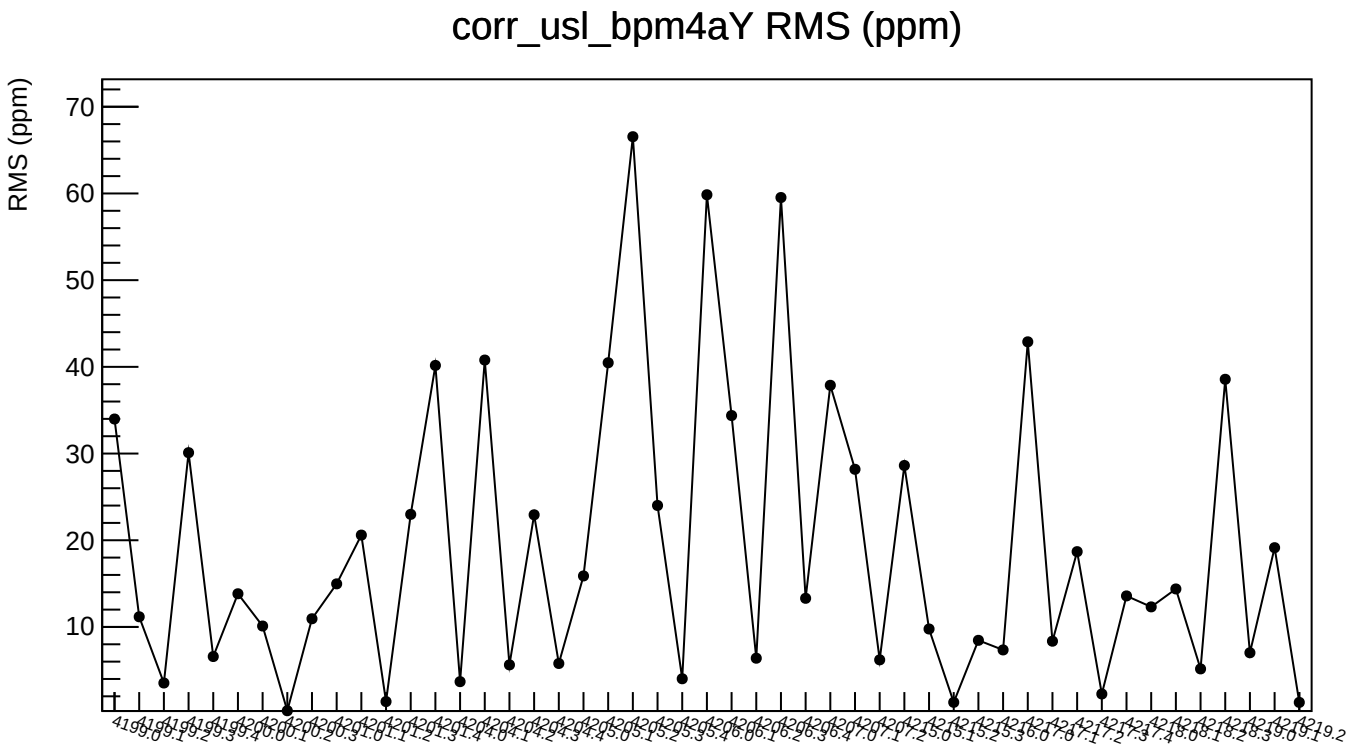

corr_usl_bpm4eY RMS (ppm)
RMS (ppm)
40
35
30
25
20
15
10
5

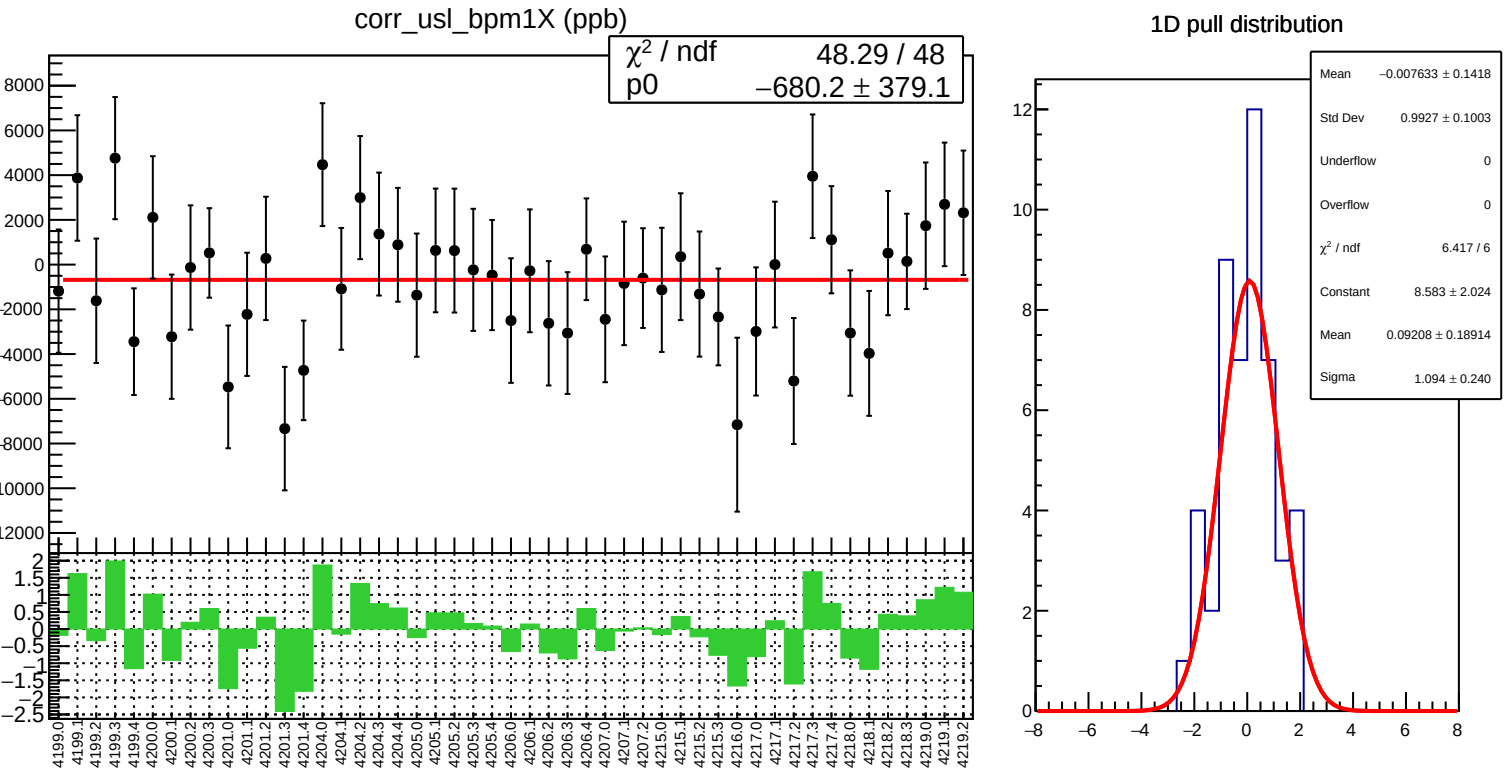

corr_usl_bpm4aX (ppb)
χ² / ndf 5.53 / 48
p0 3.878 ± 32.26
400
200
0
−200
−400
1.4
1.2
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

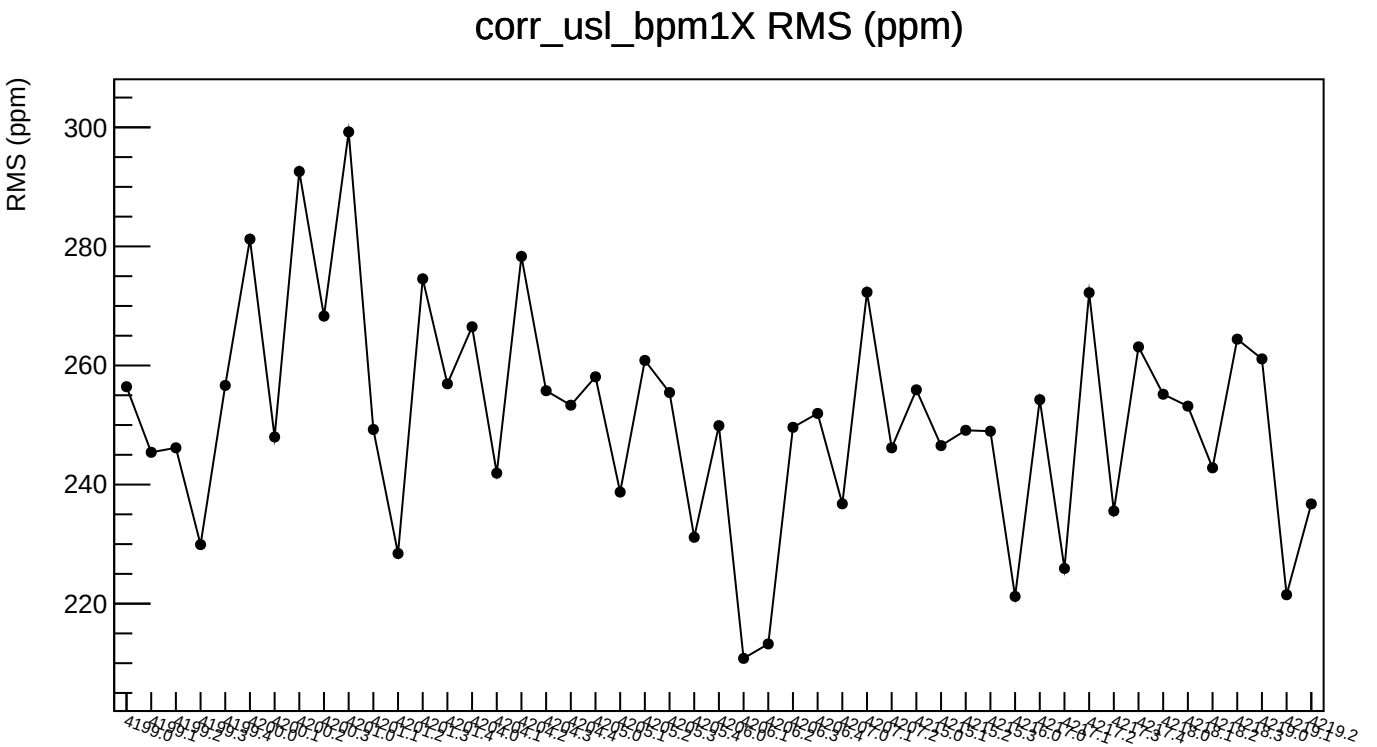

1D pull distribution
Mean −0.005397 ± 0.04799
Std Dev 0.3359 ± 0.03393
Underflow 0
Overflow 0
χ² / ndf 1.59 / 2
Constant 30.22 ± 5.92
Mean −0.04853 ± 0.05254
Sigma 0.3342 ± 0.0436
25
20
15
10
5
0
−8
−6
−4
−2
0
2
4
6
8

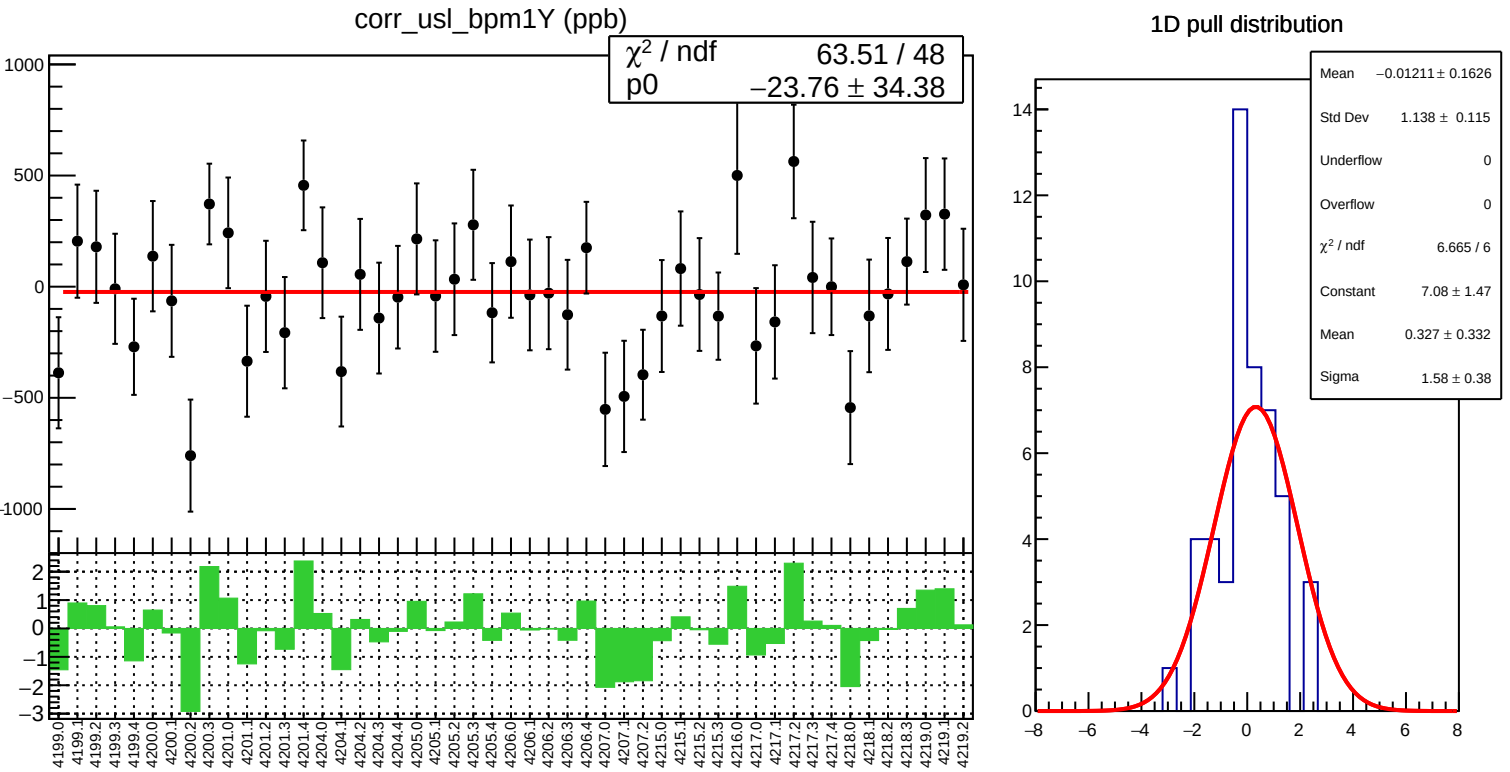

corr_usl_bpm4aX RMS (ppm)
RMS (ppm)
20
18
16
14
12
10
8
6
4
2


corr_usl_bpm4aY (ppb)
χ² / ndf 12.19 / 48
p0 62.3 ± 58.12
1D pull distribution
Mean 0.008629 ± 0.07124
Std Dev 0.4987 ± 0.05037
Underflow 0
Overflow 0
χ² / ndf 6.877 / 3
Constant 16.74 ± 4.18
Mean −0.01398 ± 0.10934
Sigma 0.5363 ± 0.1076

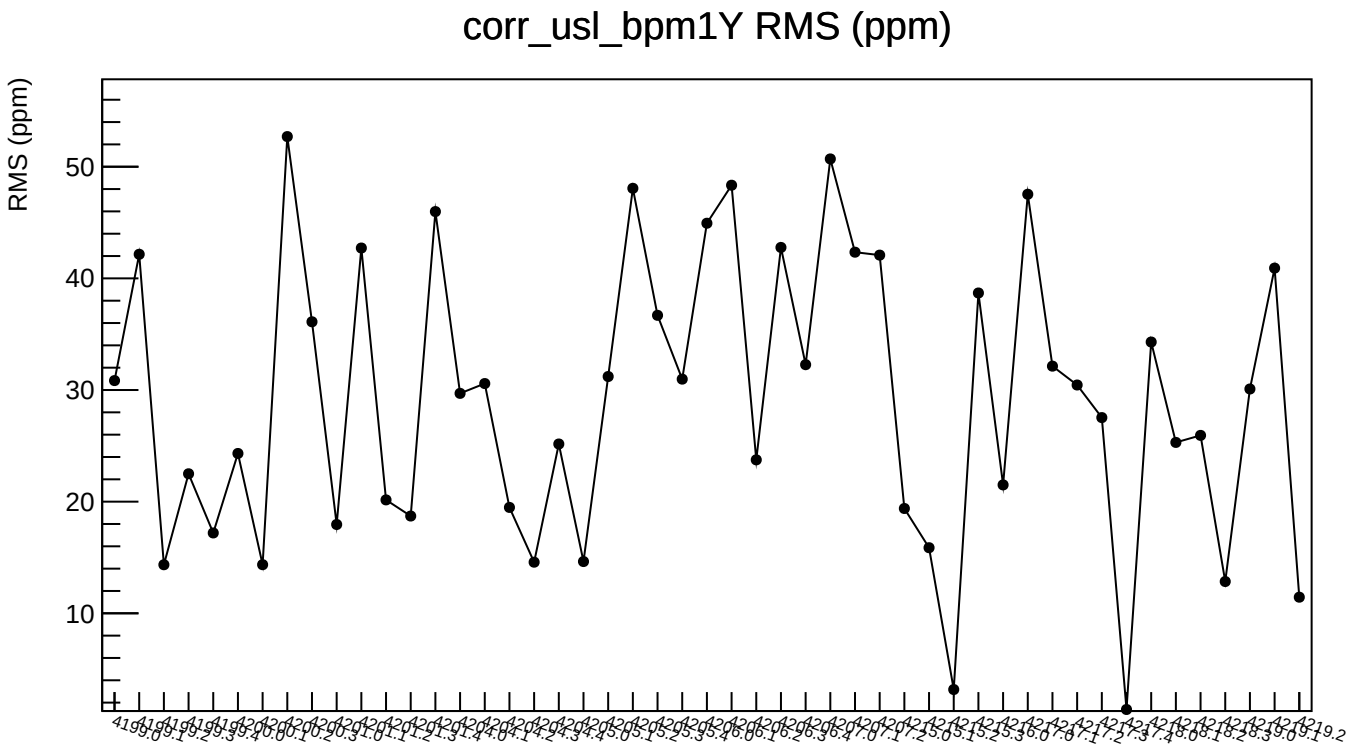

corr_usl_bpm4aY RMS (ppm)
RMS (ppm)
70
60
50
40
30
20
10

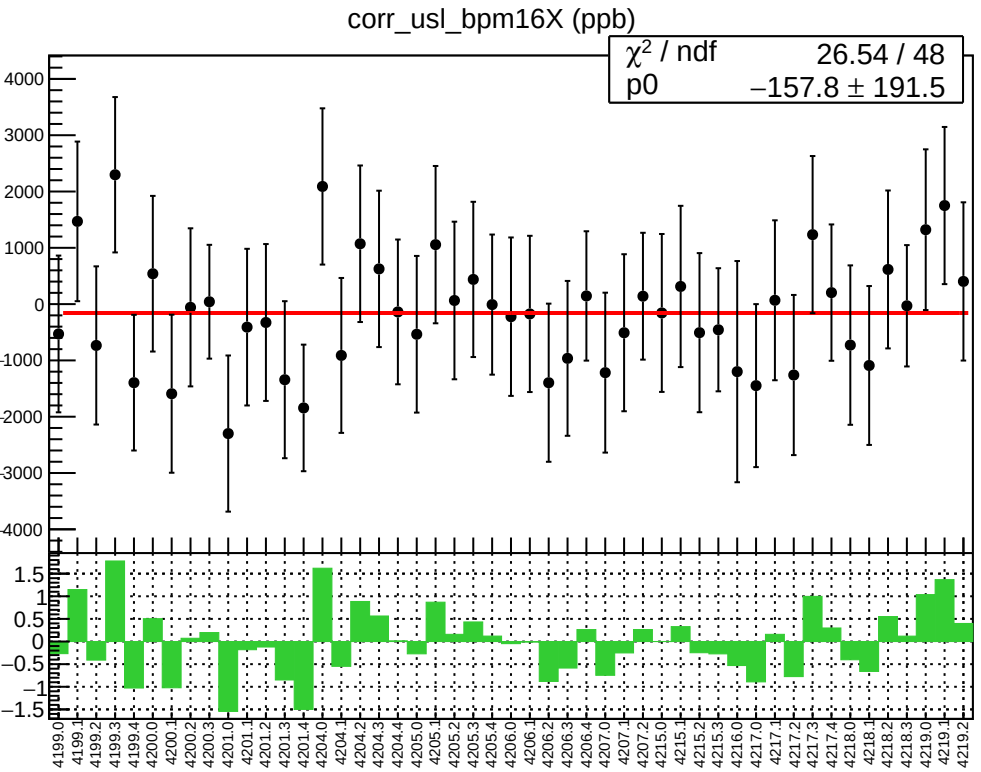

corr_usl_bpm1X (ppb)
χ² / ndf 48.29 / 48
p0 −680.2 ± 379.1
1D pull distribution
Mean −0.007633 ± 0.1418
Std Dev 0.9927 ± 0.1003
Underflow 0
Overflow 0
χ² / ndf 6.417 / 6
Constant 8.583 ± 2.024
Mean 0.09208 ± 0.18914
Sigma 1.094 ± 0.240

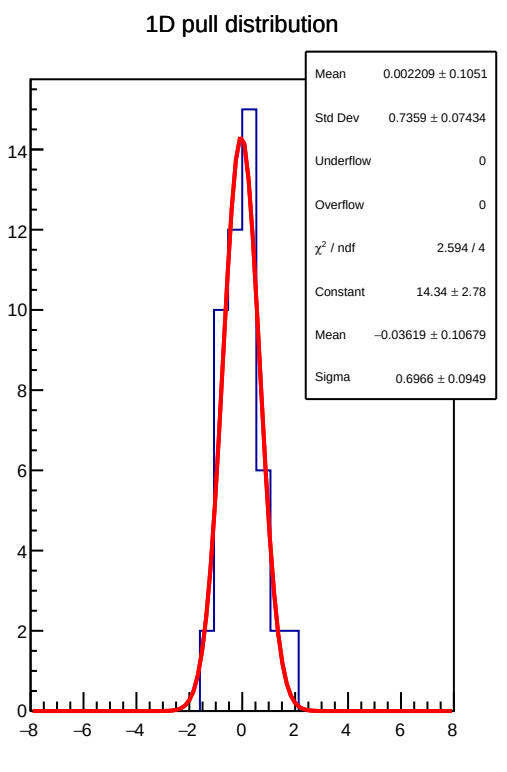

corr_usl_bpm1X RMS (ppm)
RMS (ppm)
300
280
260
240
220

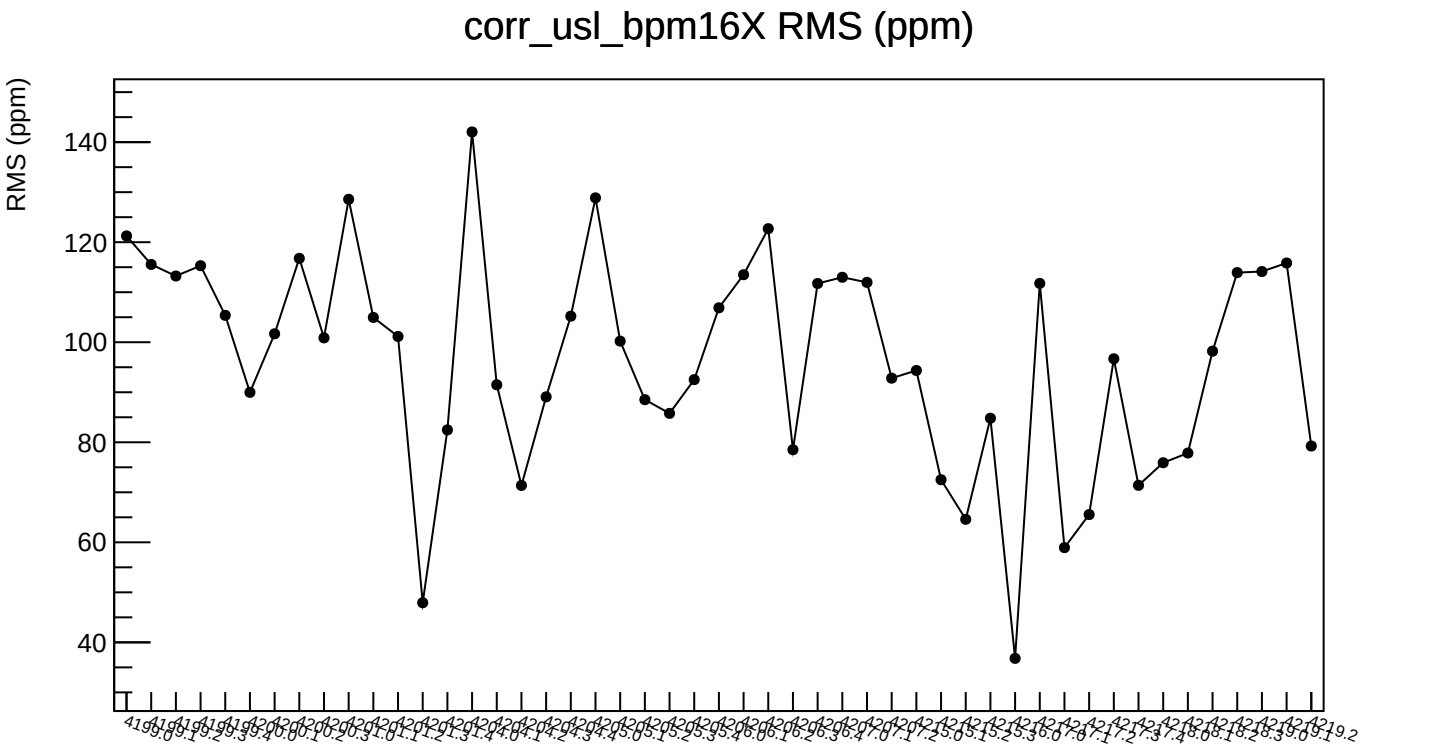

corr_usl_bpm1Y (ppb)
χ² / ndf 63.51 / 48
p0 −23.76 ± 34.38
1000
500
0
−500
−1000
2
1
0
−1
−2
−3
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

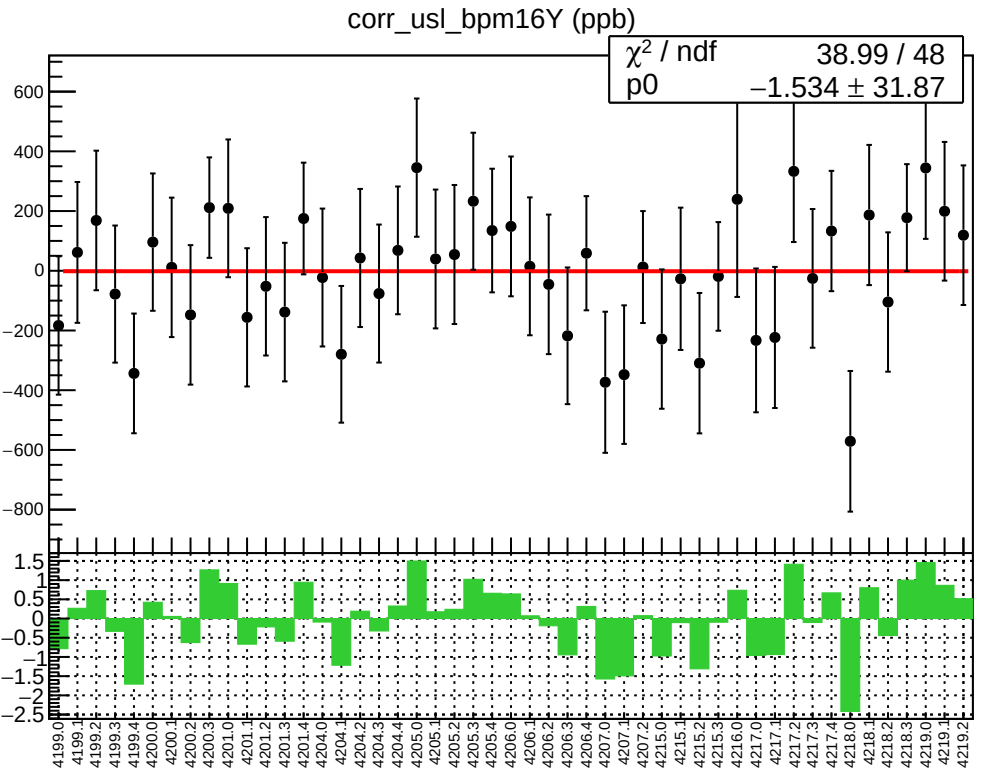

1D pull distribution
Mean −0.01211 ± 0.1626
Std Dev 1.138 ± 0.115
Underflow 0
Overflow 0
χ² / ndf 6.665 / 6
Constant 7.08 ± 1.47
Mean 0.327 ± 0.332
Sigma 1.58 ± 0.38
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

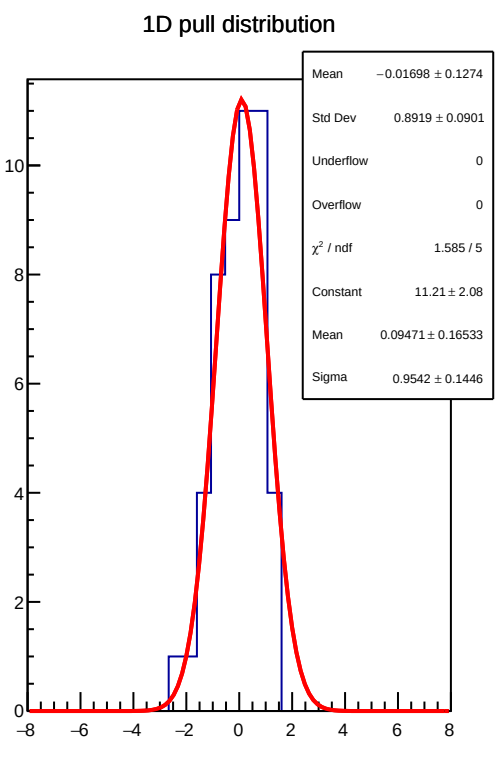

corr_usl_bpm1Y RMS (ppm)
RMS (ppm)
50
40
30
20
10

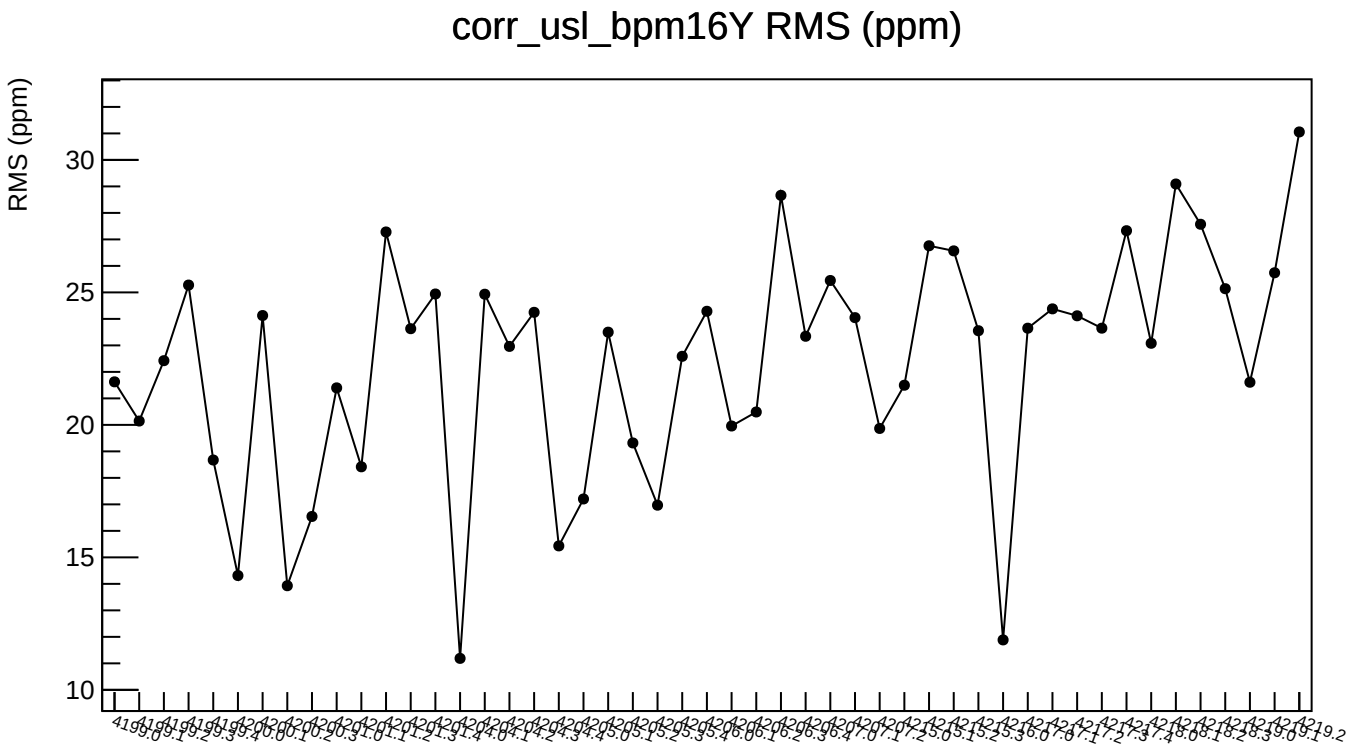

corr_usl_bpm16X (ppb)
χ² / ndf 26.54 / 48
p0 −157.8 ± 191.5
4000
3000
2000
1000
0
-1000
-2000
-3000
-4000
1.5
1
0.5
0
−0.5
−1
−1.5
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

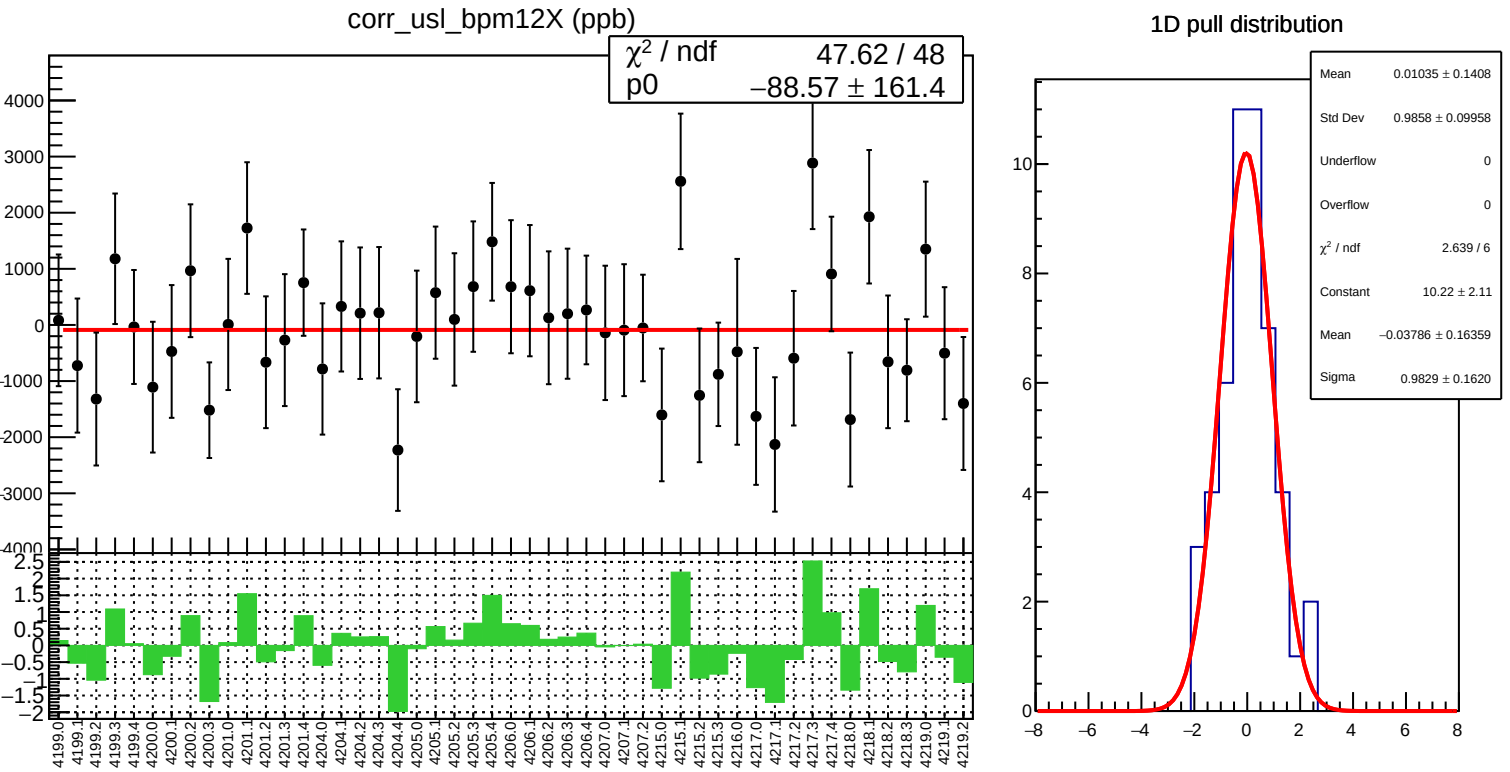

1D pull distribution
Mean 0.002209 ± 0.1051
Std Dev 0.7359 ± 0.07434
Underflow 0
Overflow 0
χ² / ndf 2.594 / 4
Constant 14.34 ± 2.78
Mean −0.03619 ± 0.10679
Sigma 0.6966 ± 0.0949
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

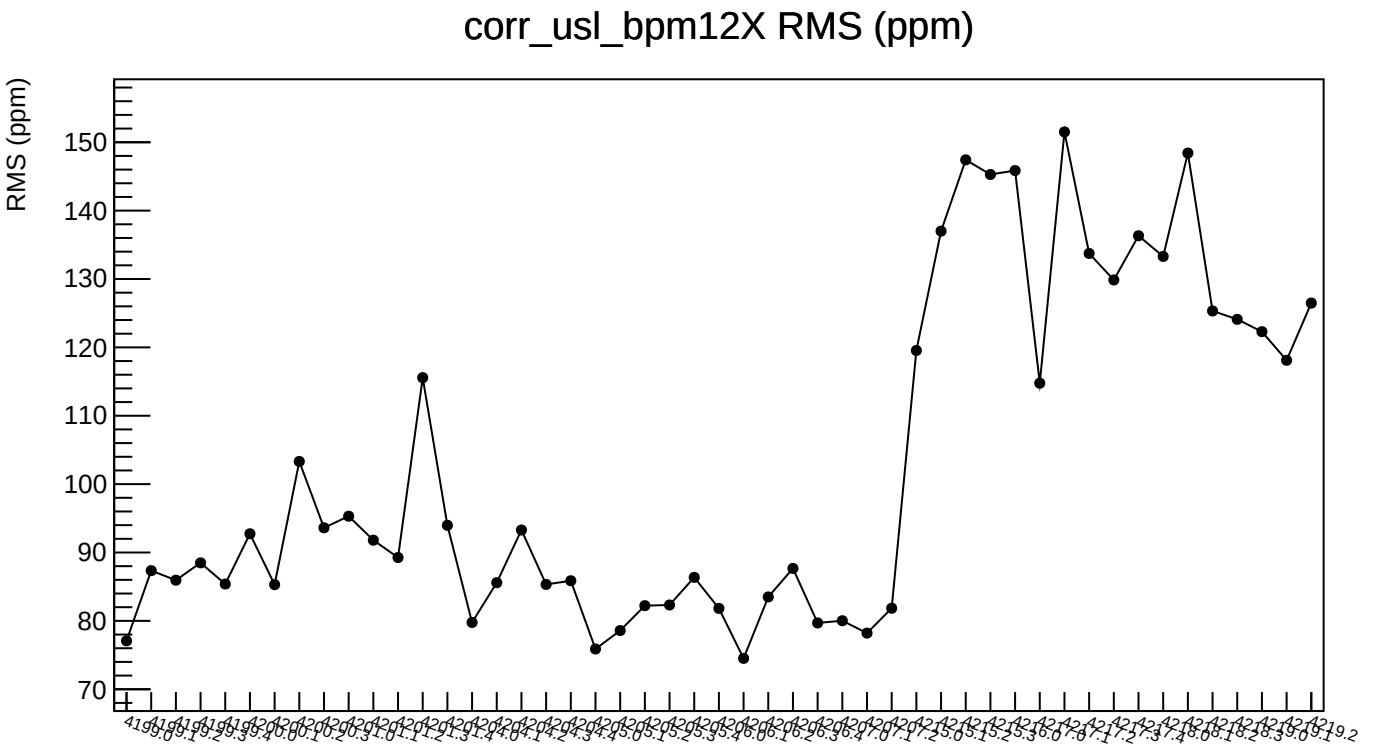

corr_usl_bpm16X RMS (ppm)
RMS (ppm)
140
120
100
80
60
40

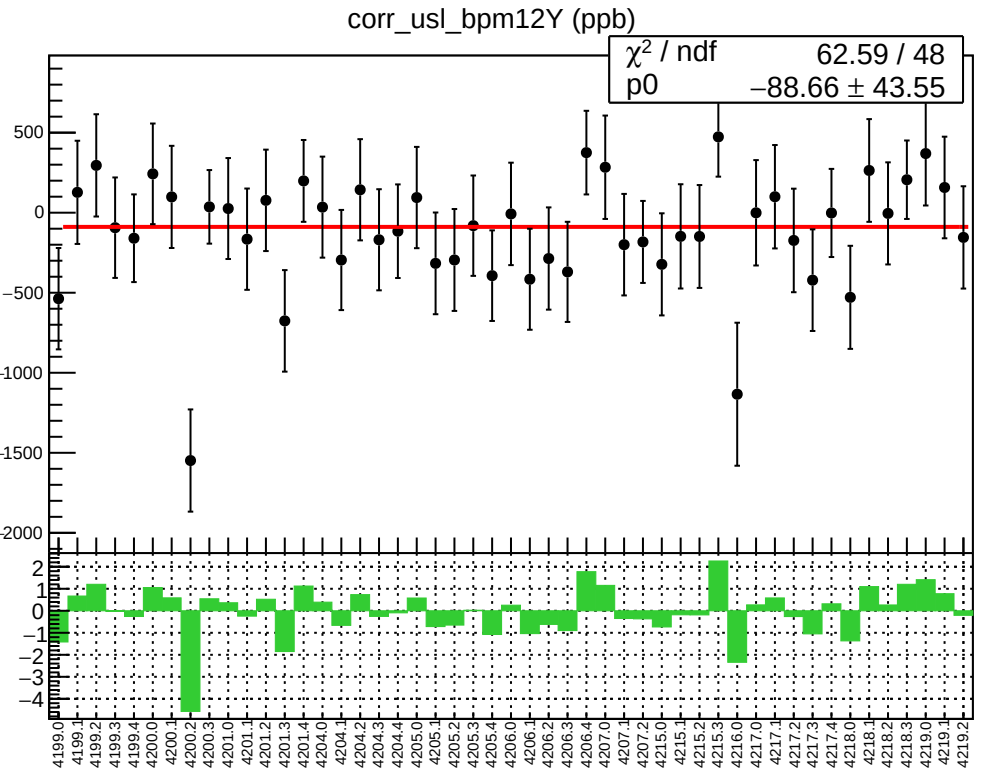

corr_usl_bpm16Y (ppb)
χ² / ndf 38.99 / 48
p0 −1.534 ± 31.87

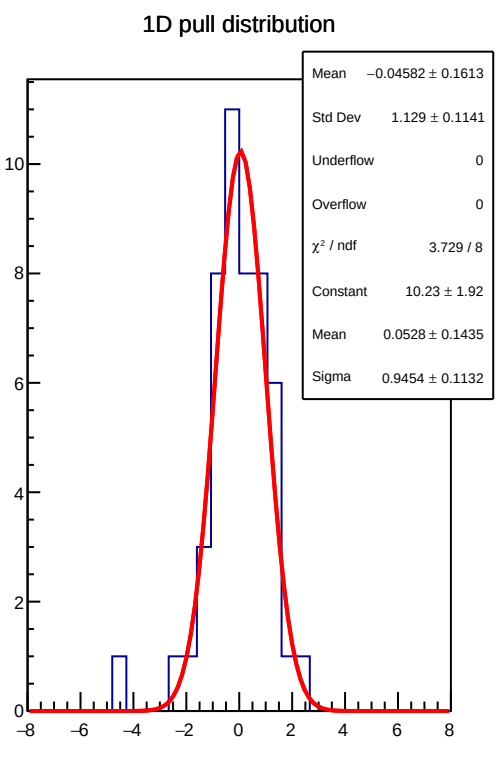

1D pull distribution
Mean −0.01698 ± 0.1274
Std Dev 0.8919 ± 0.0901
Underflow 0
Overflow 0
χ² / ndf 1.585 / 5
Constant 11.21 ± 2.08
Mean 0.09471 ± 0.16533
Sigma 0.9542 ± 0.1446

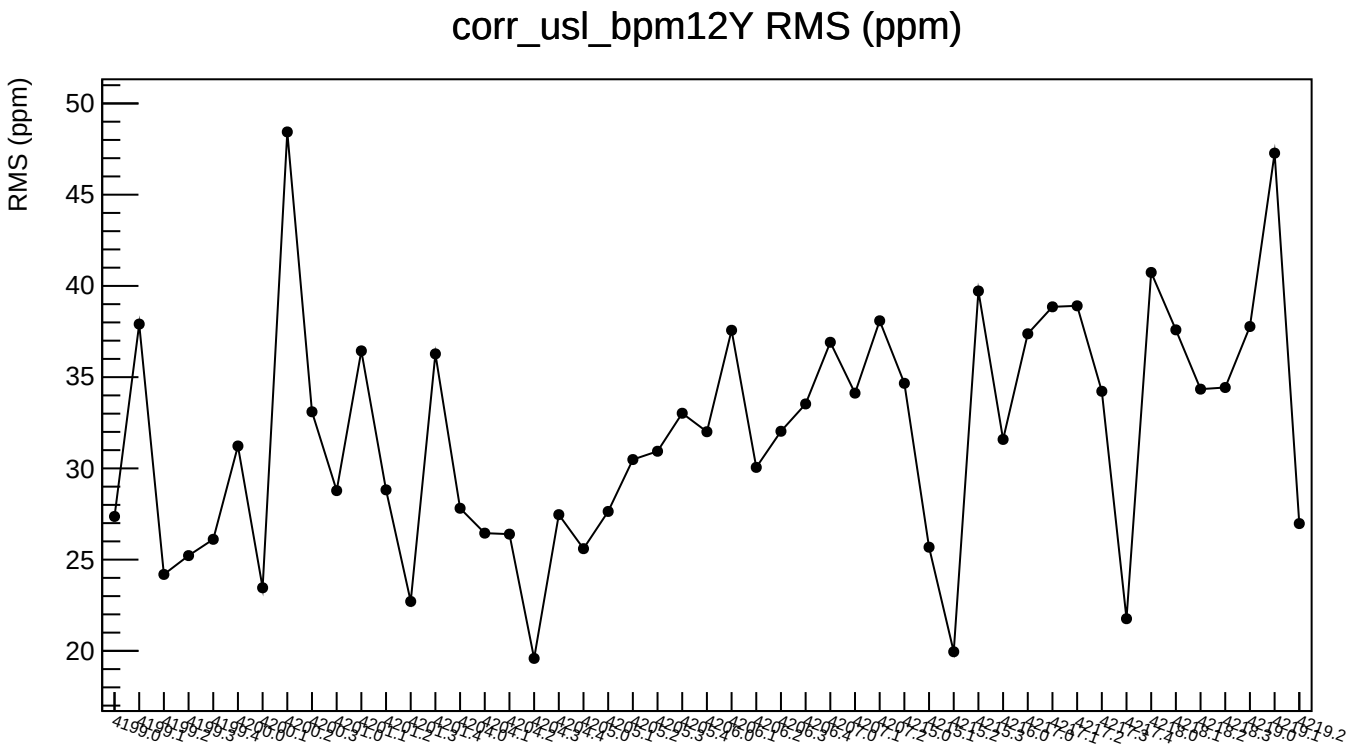

corr_usl_bpm16Y RMS (ppm)
RMS (ppm)
30
25
20
15
10

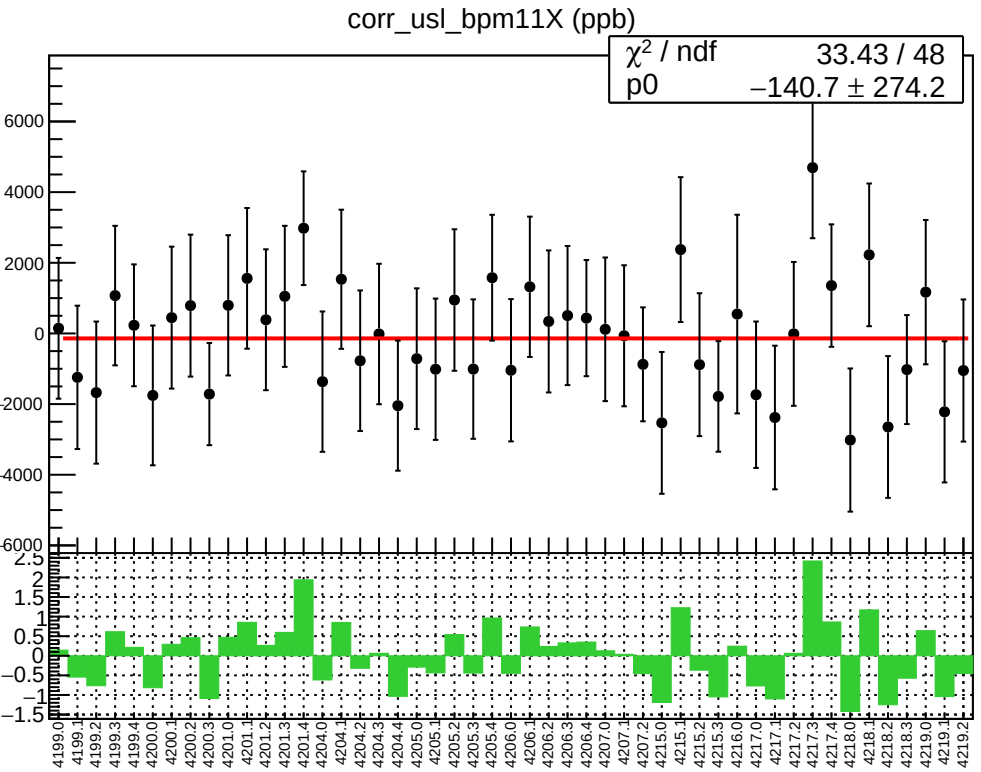

corr_usl_bpm12X (ppb)
χ² / ndf 47.62 / 48
p0 −88.57 ± 161.4
1D pull distribution
Mean 0.01035 ± 0.1408
Std Dev 0.9858 ± 0.09958
Underflow 0
Overflow 0
χ² / ndf 2.639 / 6
Constant 10.22 ± 2.11
Mean −0.03786 ± 0.16359
Sigma 0.9829 ± 0.1620

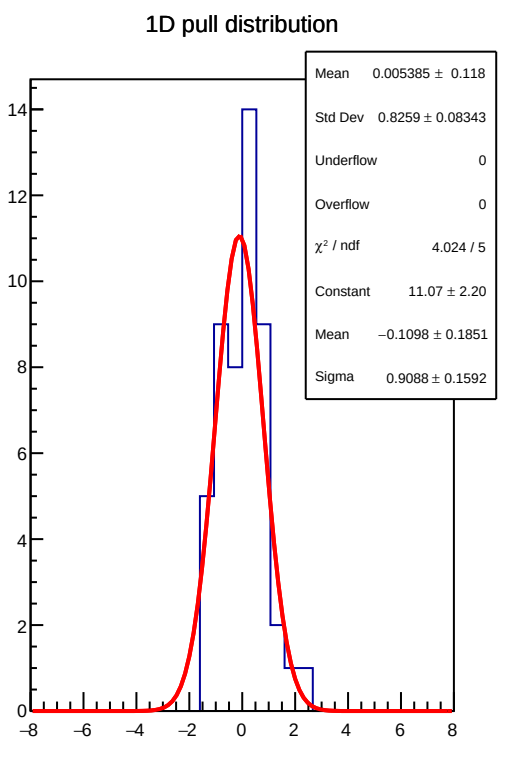

corr_usl_bpm12X RMS (ppm)
RMS (ppm)
150
140
130
120
110
100
90
80
70

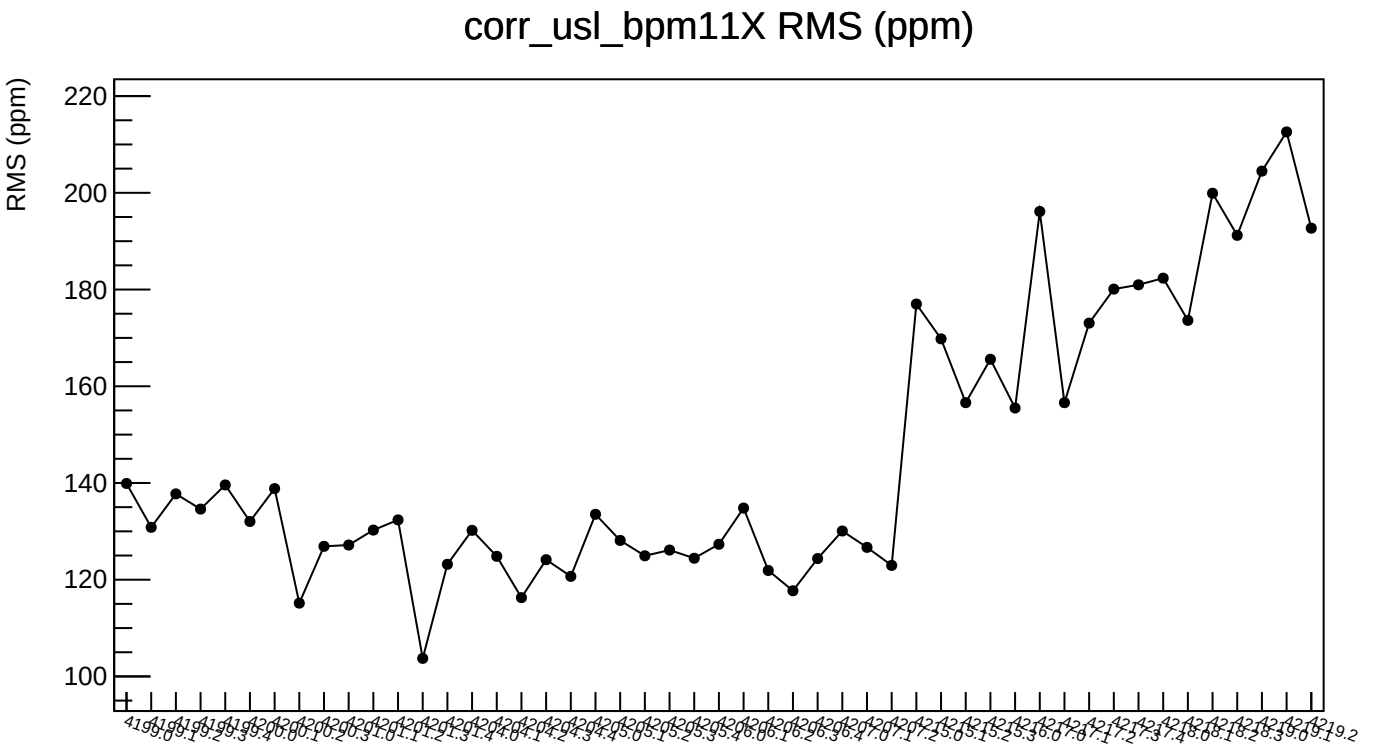

corr_usl_bpm12Y (ppb)
χ² / ndf 62.59 / 48
p0 −88.66 ± 43.55
500
0
−500
−1000
−1500
−2000
2
1
0
−1
−2
−3
−4
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

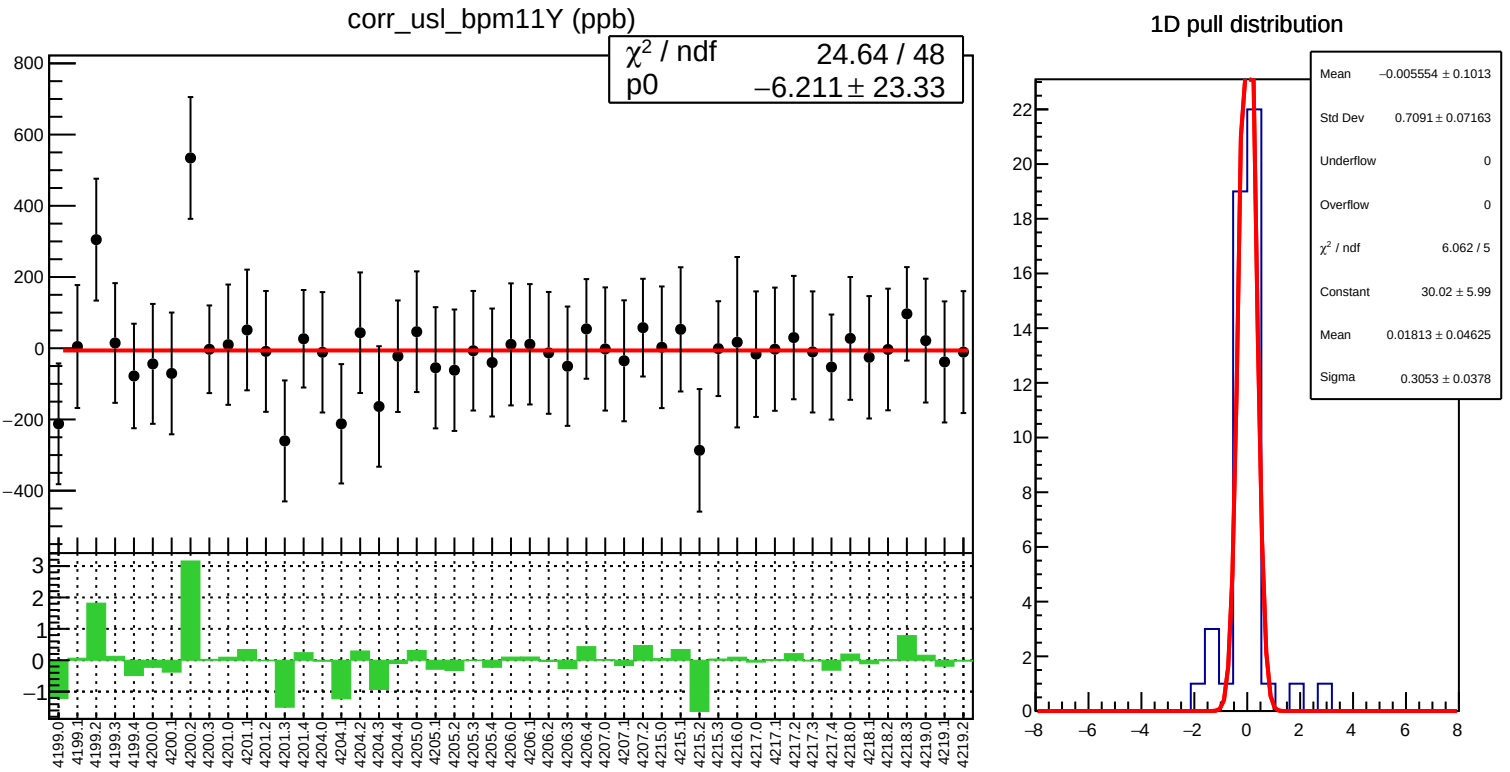

1D pull distribution
Mean −0.04582 ± 0.1613
Std Dev 1.129 ± 0.1141
Underflow 0
Overflow 0
χ² / ndf 3.729 / 8
Constant 10.23 ± 1.92
Mean 0.0528 ± 0.1435
Sigma 0.9454 ± 0.1132
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

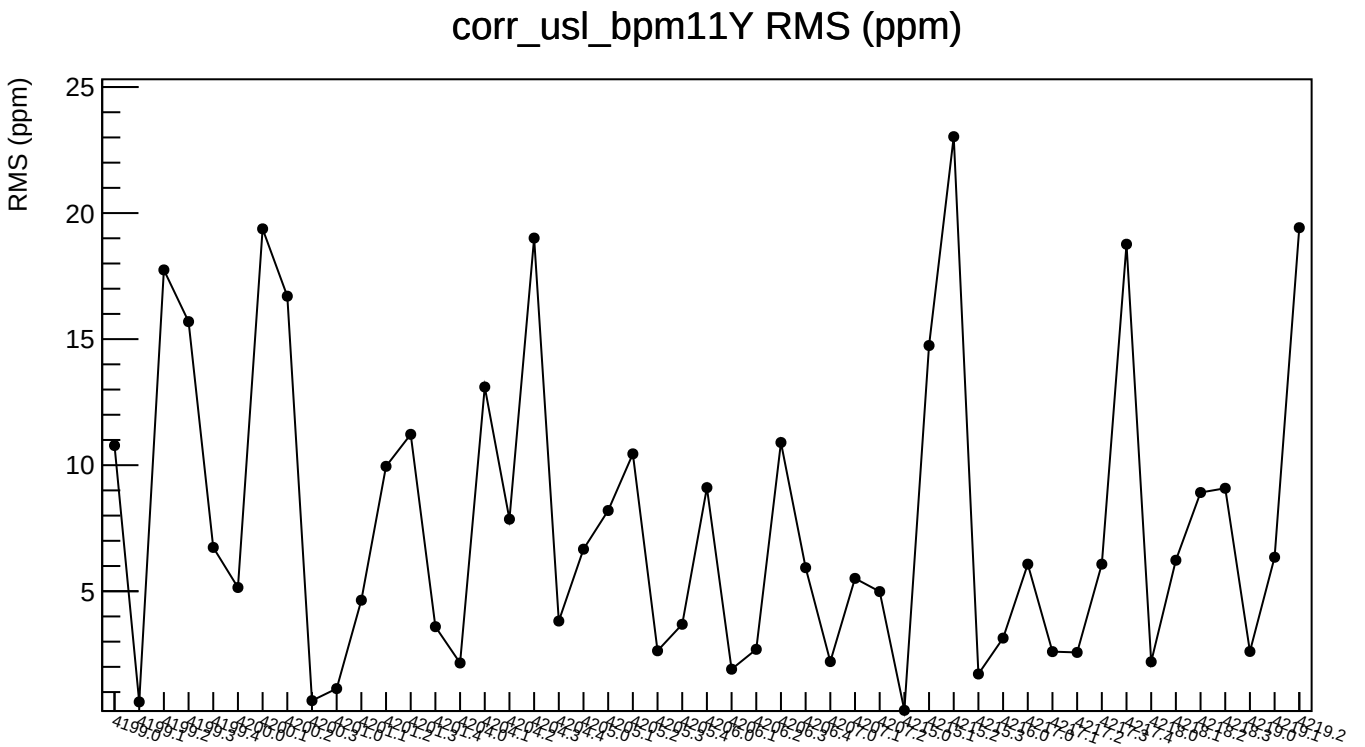

corr_usl_bpm12Y RMS (ppm)
RMS (ppm)
50
45
40
35
30
25
20

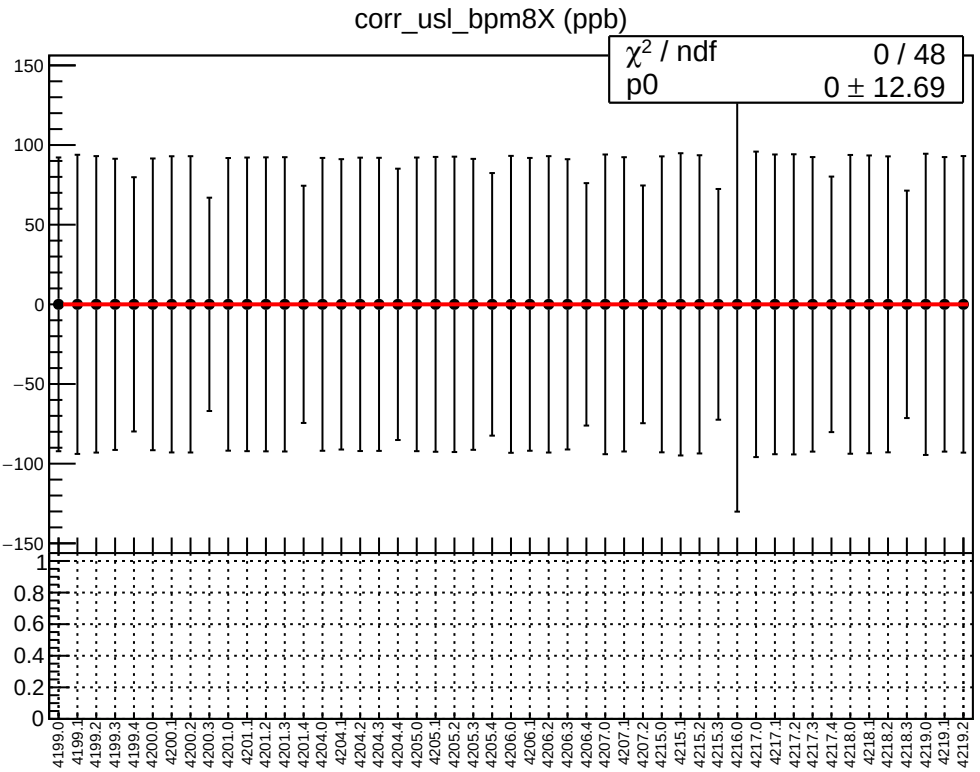

corr_usl_bpm11X (ppb)
χ² / ndf 33.43 / 48
p0 −140.7 ± 274.2
6000
4000
2000
0
-2000
-4000
-6000
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

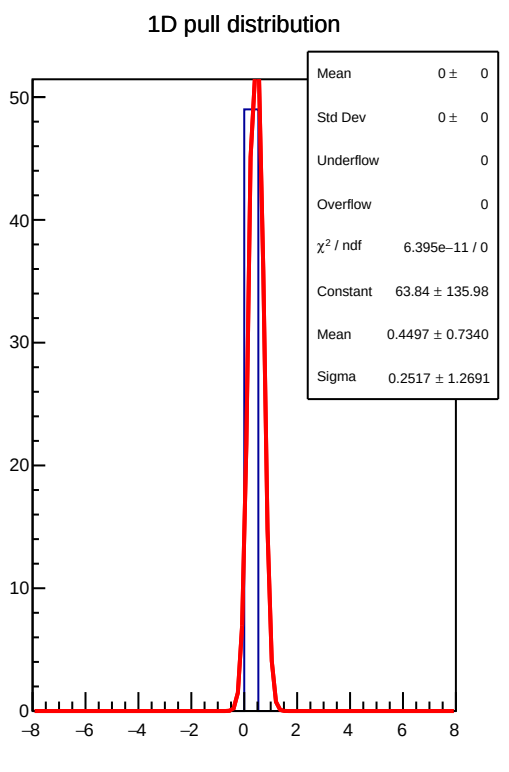

1D pull distribution
Mean 0.005385 ± 0.118
Std Dev 0.8259 ± 0.08343
Underflow 0
Overflow 0
χ² / ndf 4.024 / 5
Constant 11.07 ± 2.20
Mean −0.1098 ± 0.1851
Sigma 0.9088 ± 0.1592
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

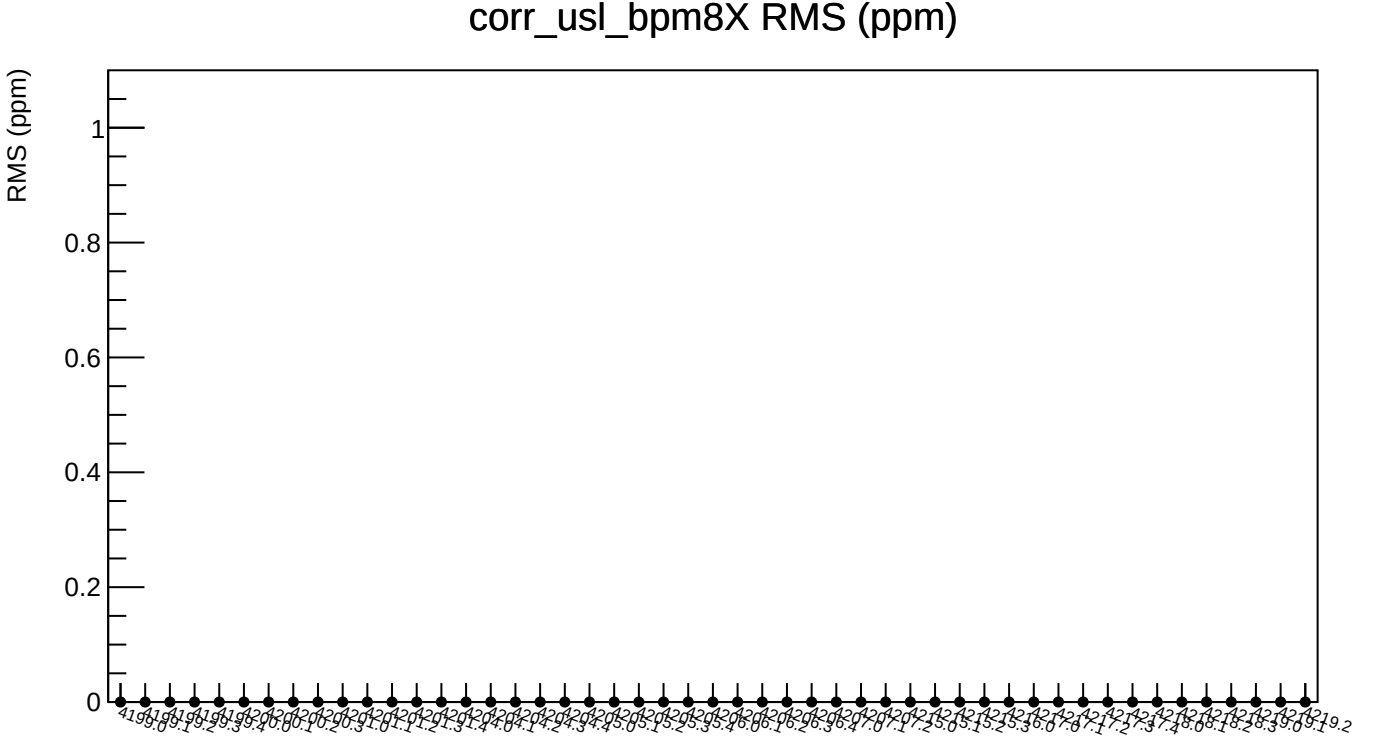

corr_usl_bpm11X RMS (ppm)
RMS (ppm)
220
200
180
160
140
120
100

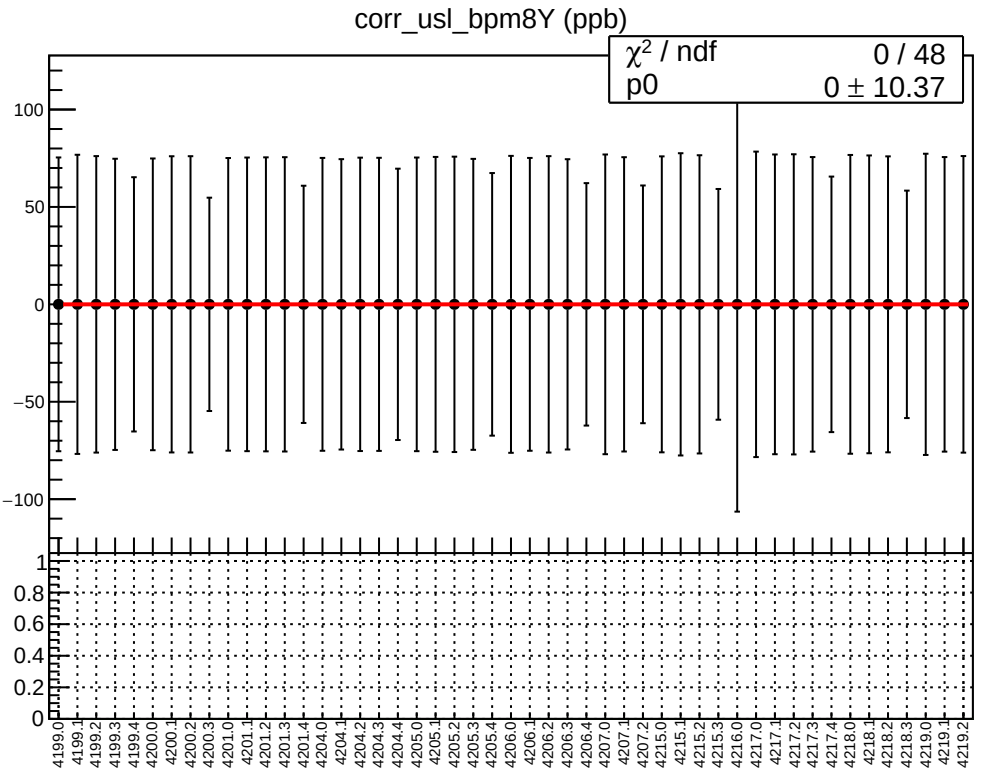

corr_usl_bpm11Y (ppb)
χ² / ndf 24.64 / 48
p0 −6.211 ± 23.33
1D pull distribution
Mean −0.005554 ± 0.1013
Std Dev 0.7091 ± 0.07163
Underflow 0
Overflow 0
χ² / ndf 6.062 / 5
Constant 30.02 ± 5.99
Mean 0.01813 ± 0.04625
Sigma 0.3053 ± 0.0378

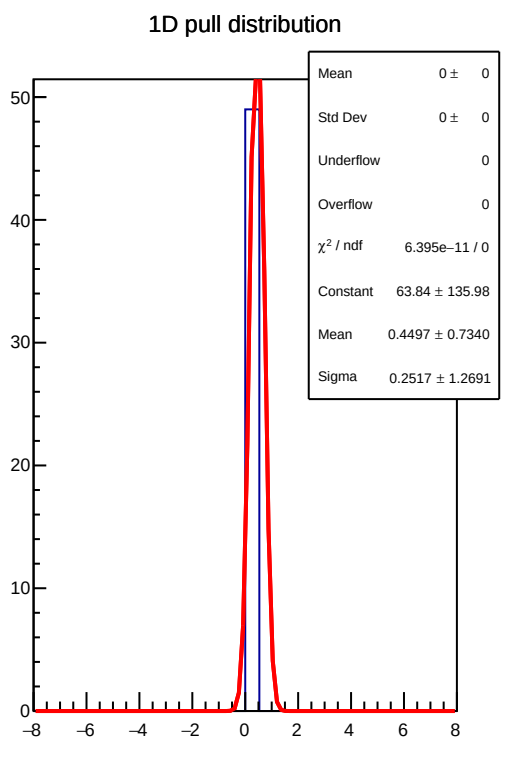

corr_usl_bpm11Y RMS (ppm)
RMS (ppm)
25
20
15
10
5

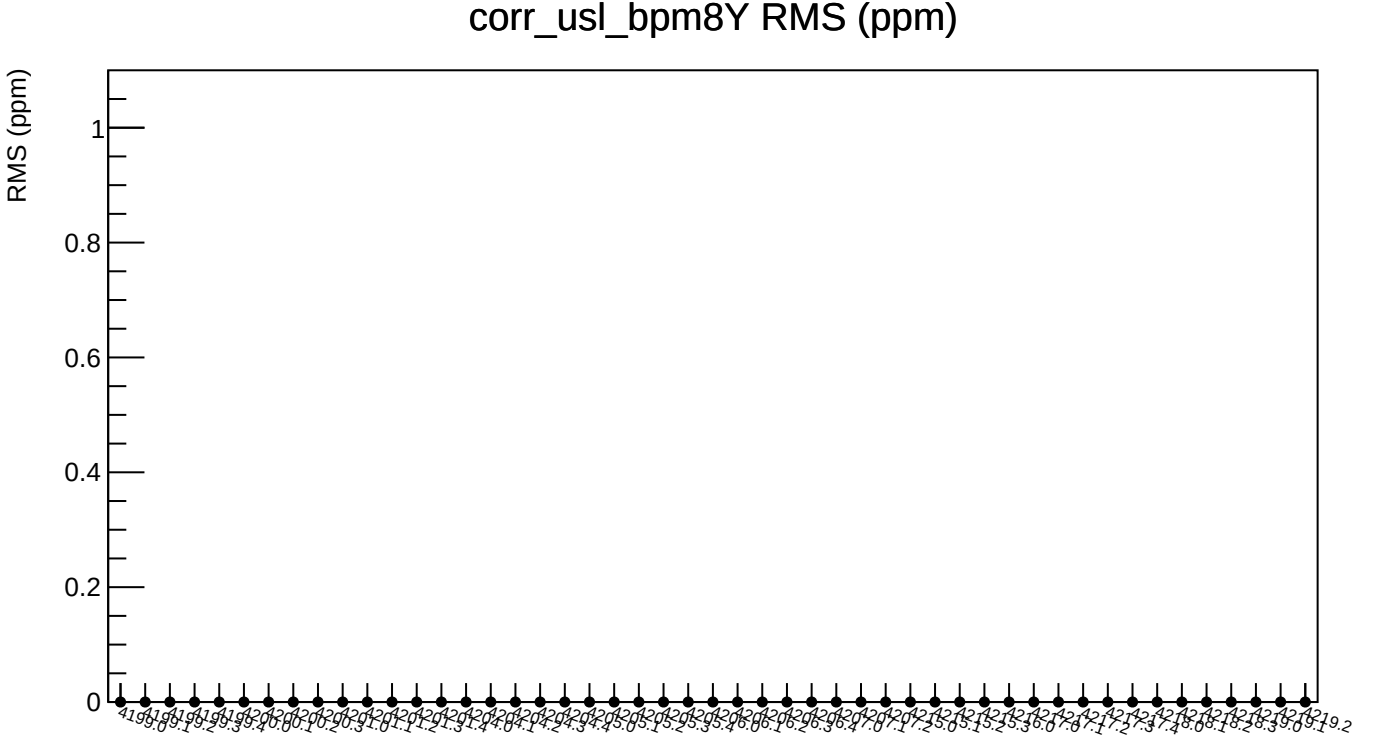

corr_usl_bpm8X (ppb)
χ² / ndf 0 / 48
p0 0 ± 12.69
150
100
50
0
−50
−100
−150
1
0.8
0.6
0.4
0.2
0
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

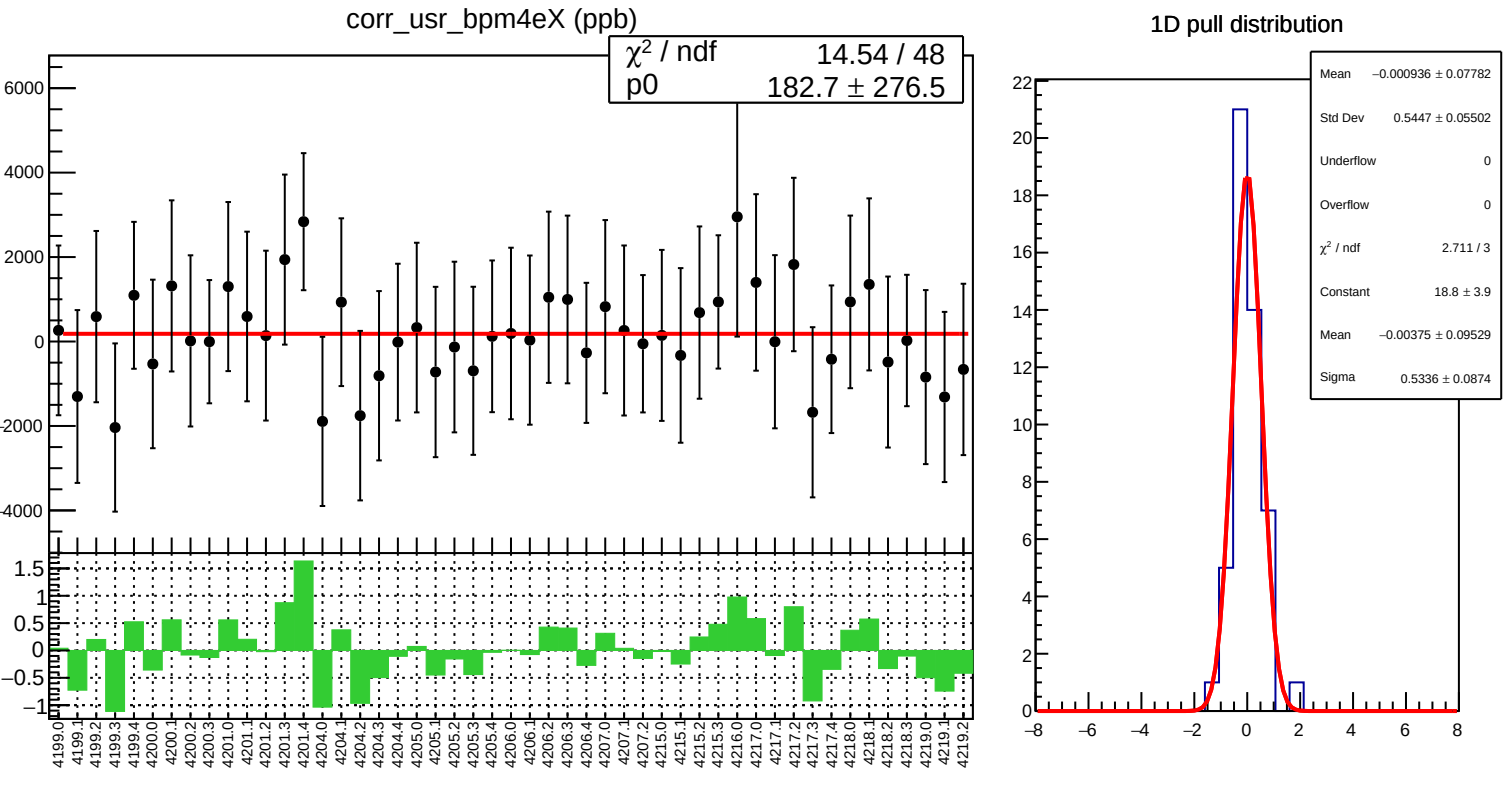

1D pull distribution
Mean 0 ± 0
Std Dev 0 ± 0
Underflow 0
Overflow 0
χ² / ndf 6.395e−11 / 0
Constant 63.84 ± 135.98
Mean 0.4497 ± 0.7340
Sigma 0.2517 ± 1.2691
50
40
30
20
10
0
−8
−6
−4
−2
0
2
4
6
8

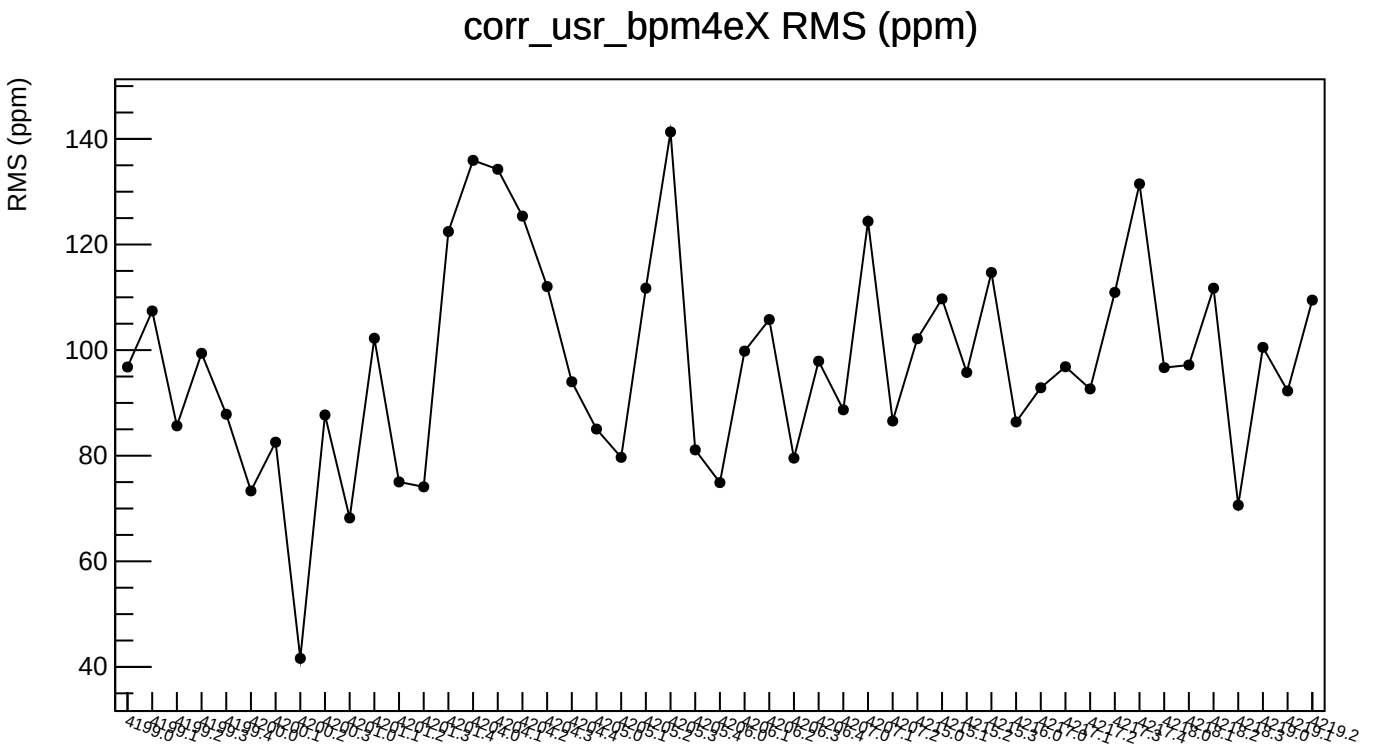

corr_usl_bpm8X RMS (ppm)
RMS (ppm)
1
0.8
0.6
0.4
0.2
0

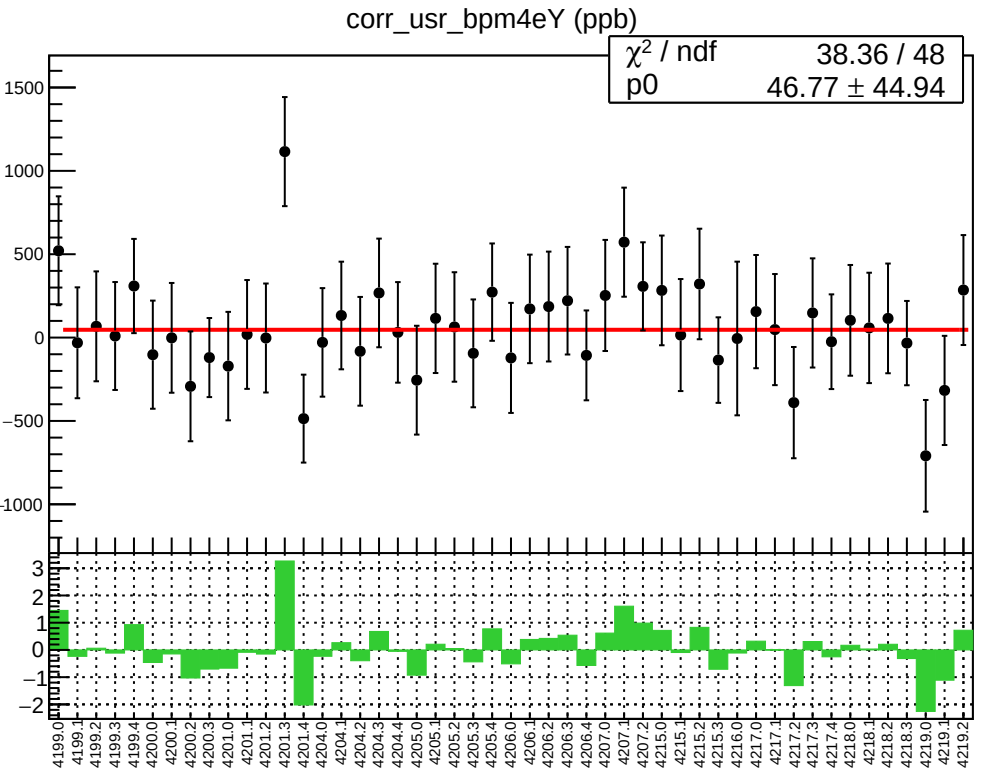

corr_usl_bpm8Y (ppb)
χ² / ndf 0 / 48
p0 0 ± 10.37
100
50
0
−50
−100
1
0.8
0.6
0.4
0.2
0
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

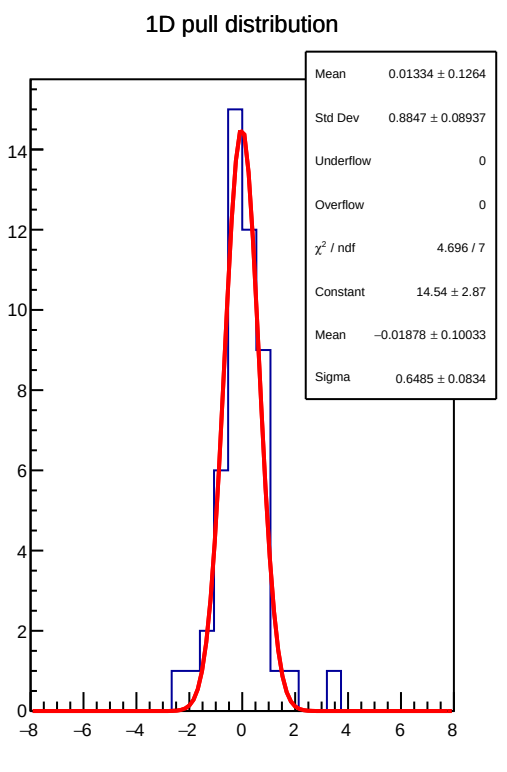

1D pull distribution
Mean 0 ± 0
Std Dev 0 ± 0
Underflow 0
Overflow 0
χ² / ndf 6.395e−11 / 0
Constant 63.84 ± 135.98
Mean 0.4497 ± 0.7340
Sigma 0.2517 ± 1.2691
50
40
30
20
10
0
−8
−6
−4
−2
0
2
4
6
8

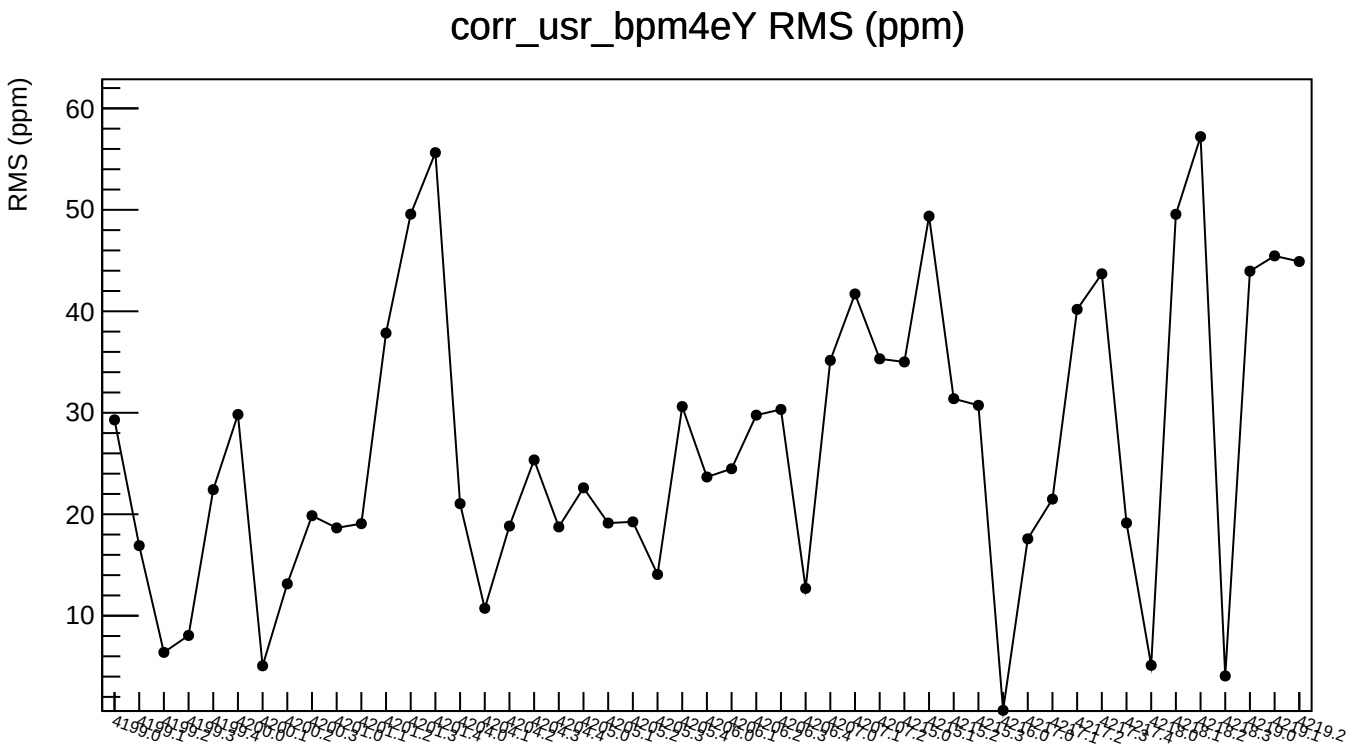

corr_usl_bpm8Y RMS (ppm)
RMS (ppm)
1
0.8
0.6
0.4
0.2
0

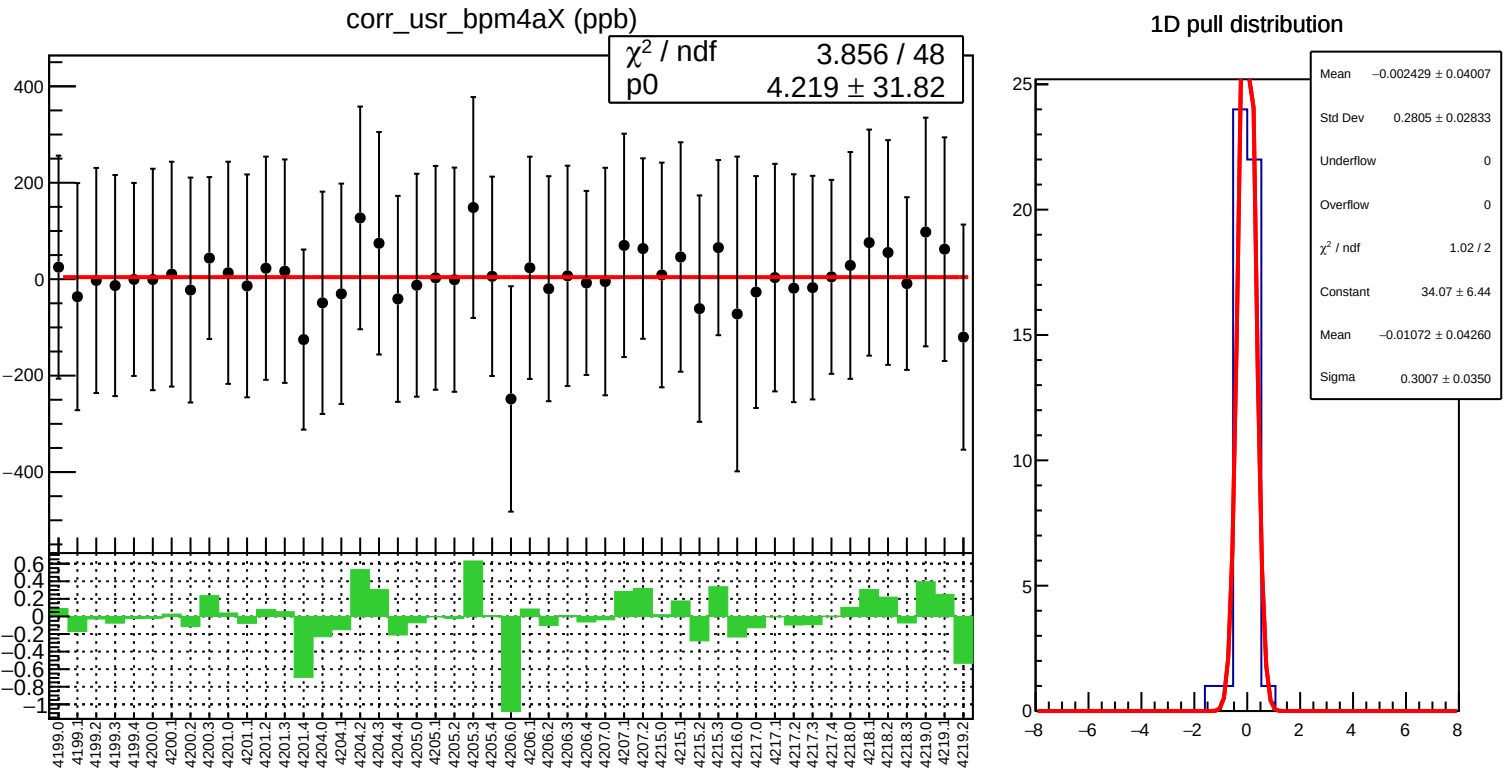

corr_usr_bpm4eX (ppb)
χ² / ndf 14.54 / 48
p0 182.7 ± 276.5
6000
4000
2000
0
-2000
-4000
1.5
1
0.5
0
−0.5
−1
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2
1D pull distribution
Mean −0.000936 ± 0.07782
Std Dev 0.5447 ± 0.05502
Underflow 0
Overflow 0
χ² / ndf 2.711 / 3
Constant 18.8 ± 3.9
Mean −0.00375 ± 0.09529
Sigma 0.5336 ± 0.0874
22
20
18
16
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

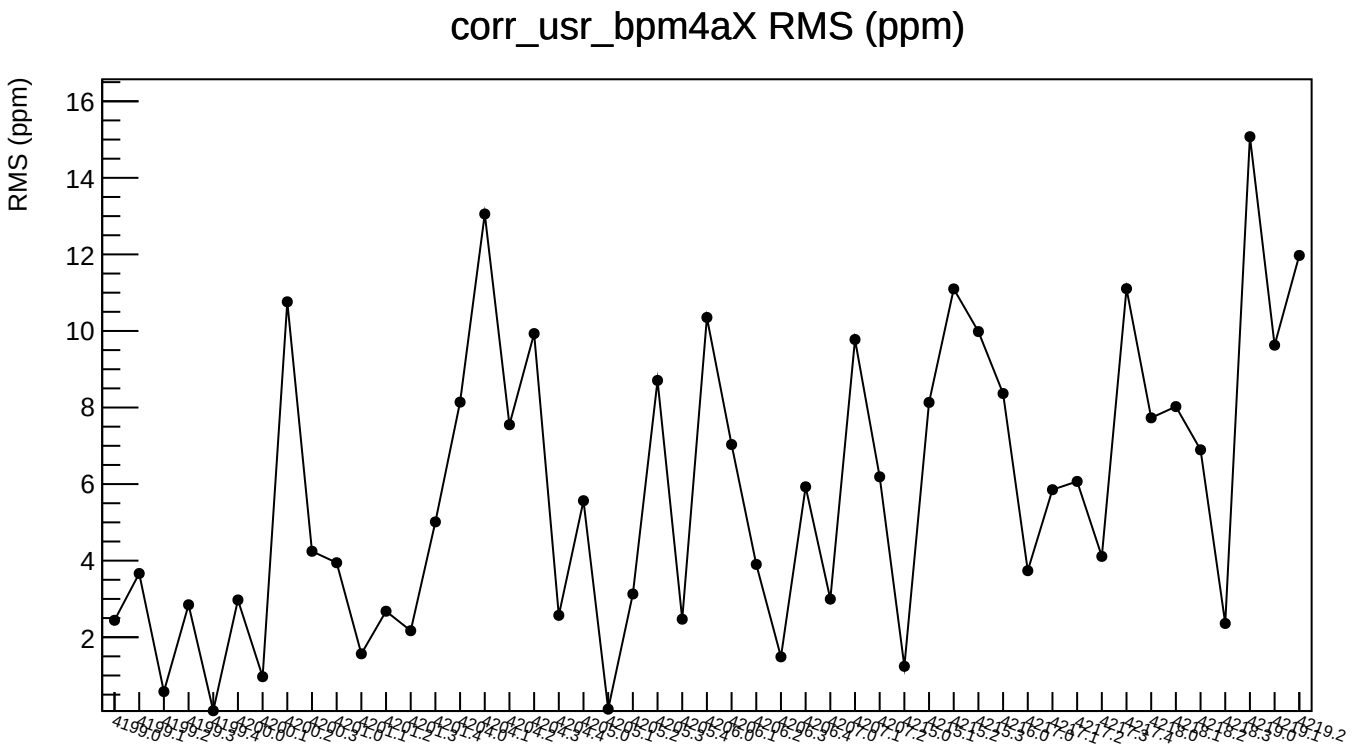

corr_usr_bpm4eX RMS (ppm)
RMS (ppm)
140
120
100
80
60
40

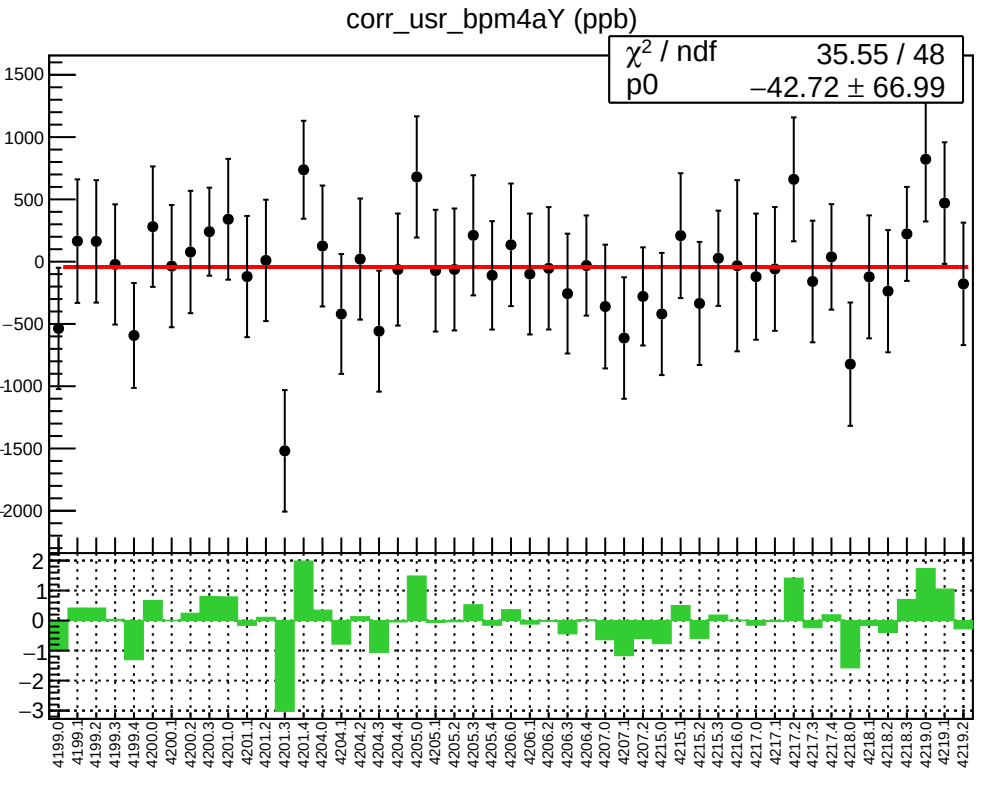

corr_usr_bpm4eY (ppb)
χ² / ndf 38.36 / 48
p0 46.77 ± 44.94
1500
1000
500
0
−500
−1000
3
2
1
0
−1
−2
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

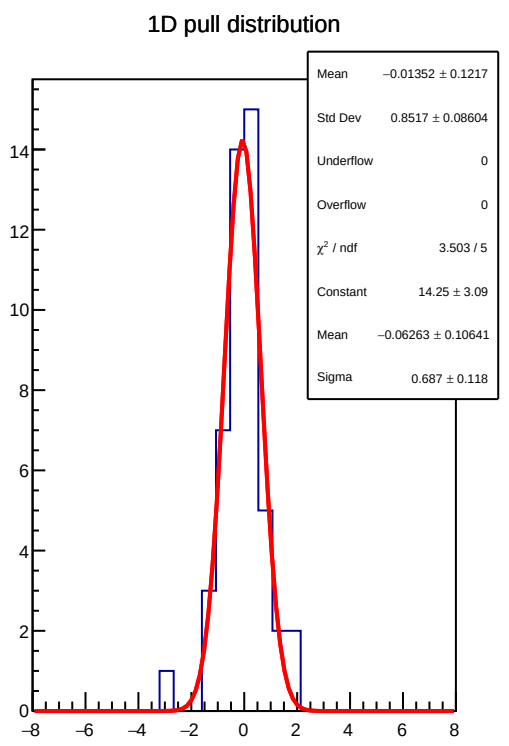

1D pull distribution
Mean 0.01334 ± 0.1264
Std Dev 0.8847 ± 0.08937
Underflow 0
Overflow 0
χ² / ndf 4.696 / 7
Constant 14.54 ± 2.87
Mean −0.01878 ± 0.10033
Sigma 0.6485 ± 0.0834
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

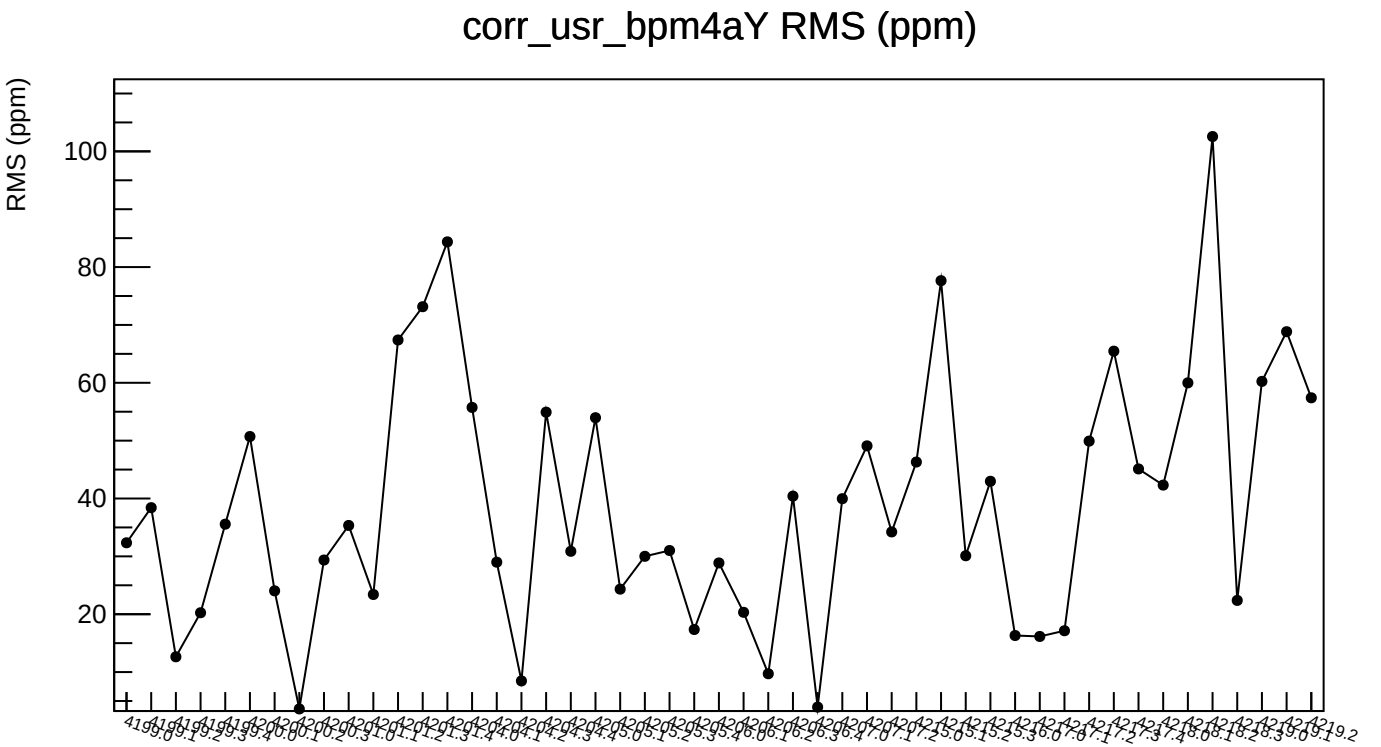

corr_usr_bpm4eY RMS (ppm)
RMS (ppm)
60
50
40
30
20
10

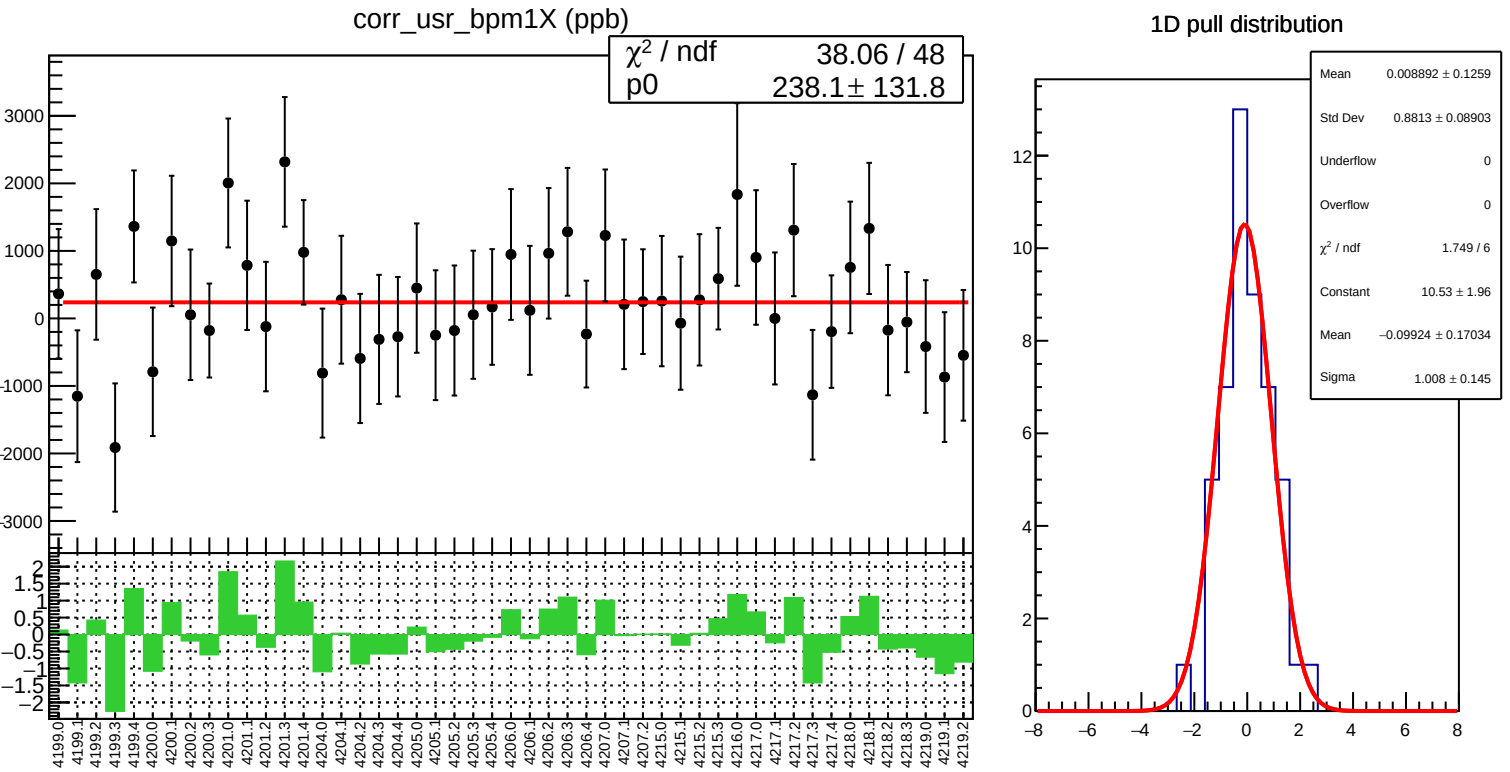

corr_usr_bpm4aX (ppb)
χ² / ndf 3.856 / 48
p0 4.219 ± 31.82
1D pull distribution
Mean −0.002429 ± 0.04007
Std Dev 0.2805 ± 0.02833
Underflow 0
Overflow 0
χ² / ndf 1.02 / 2
Constant 34.07 ± 6.44
Mean −0.01072 ± 0.04260
Sigma 0.3007 ± 0.0350


corr_usr_bpm4aX RMS (ppm)
RMS (ppm)
16
14
12
10
8
6
4
2

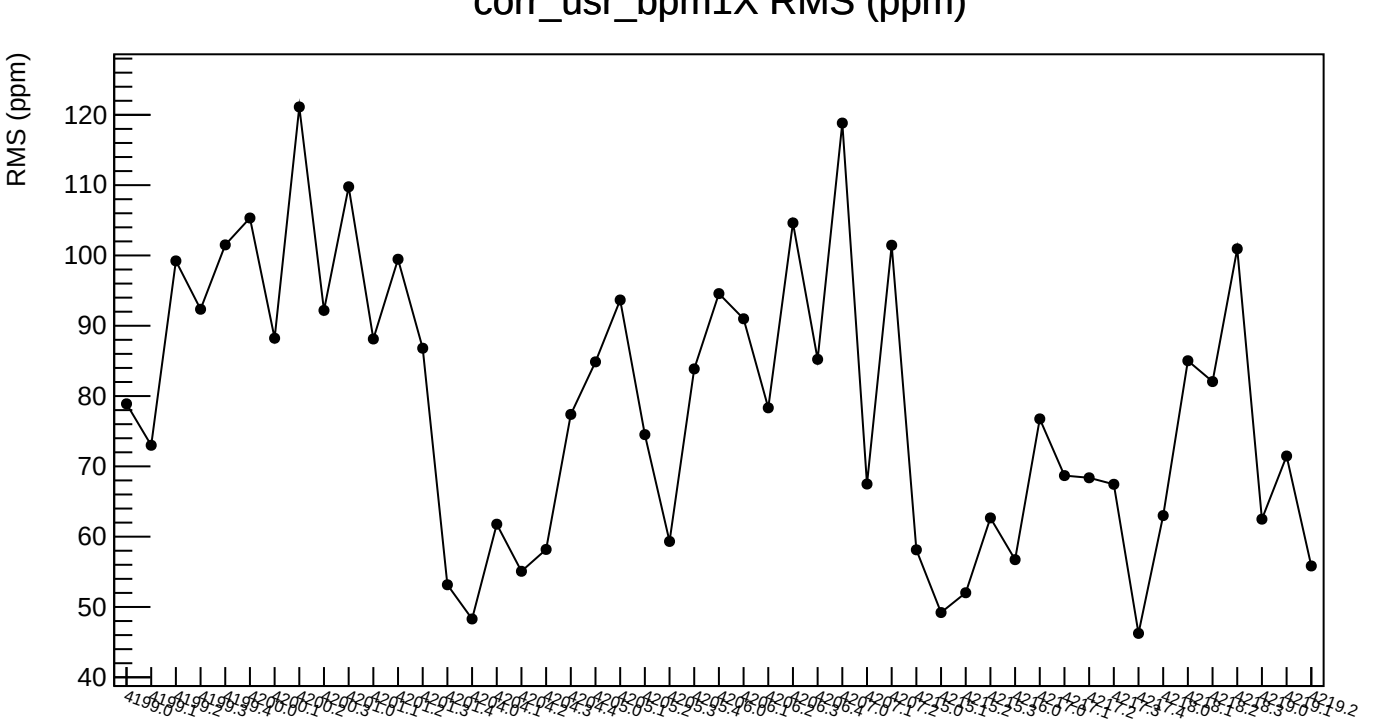

corr_usr_bpm4aY (ppb)
χ² / ndf 35.55 / 48
p0 −42.72 ± 66.99
1500
1000
500
0
−500
−1000
−1500
−2000
2
1
0
−1
−2
−3
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

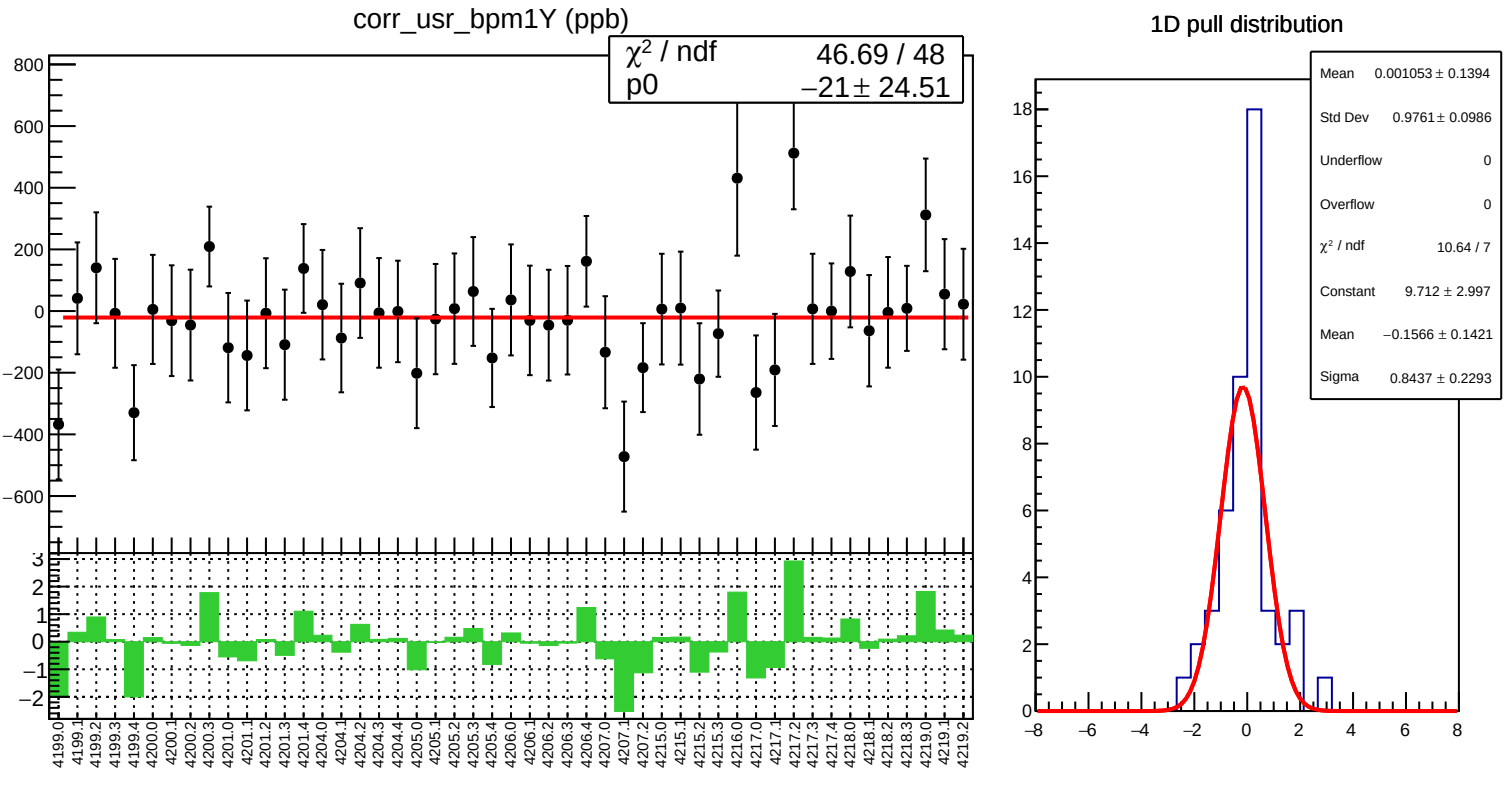

1D pull distribution
Mean −0.01352 ± 0.1217
Std Dev 0.8517 ± 0.08604
Underflow 0
Overflow 0
χ² / ndf 3.503 / 5
Constant 14.25 ± 3.09
Mean −0.06263 ± 0.10641
Sigma 0.687 ± 0.118
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

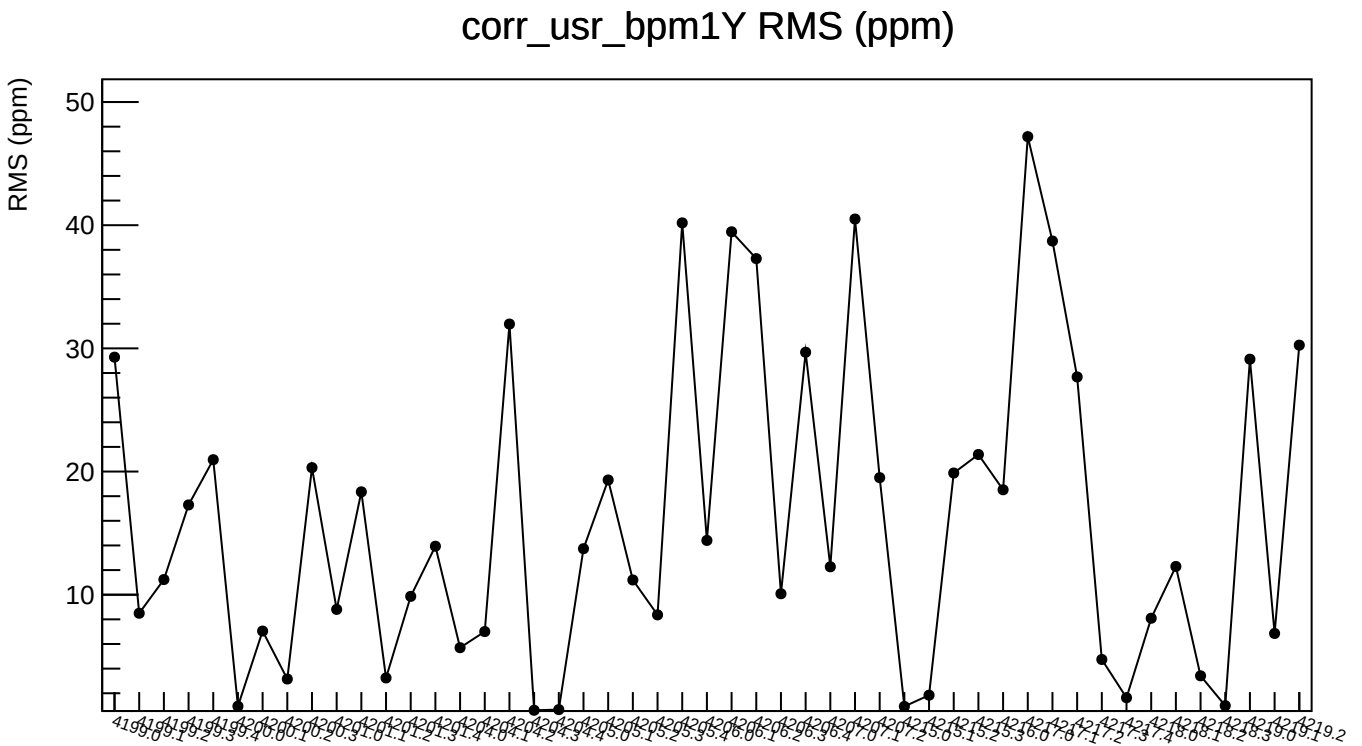

corr_usr_bpm4aY RMS (ppm)
RMS (ppm)
100
80
60
40
20

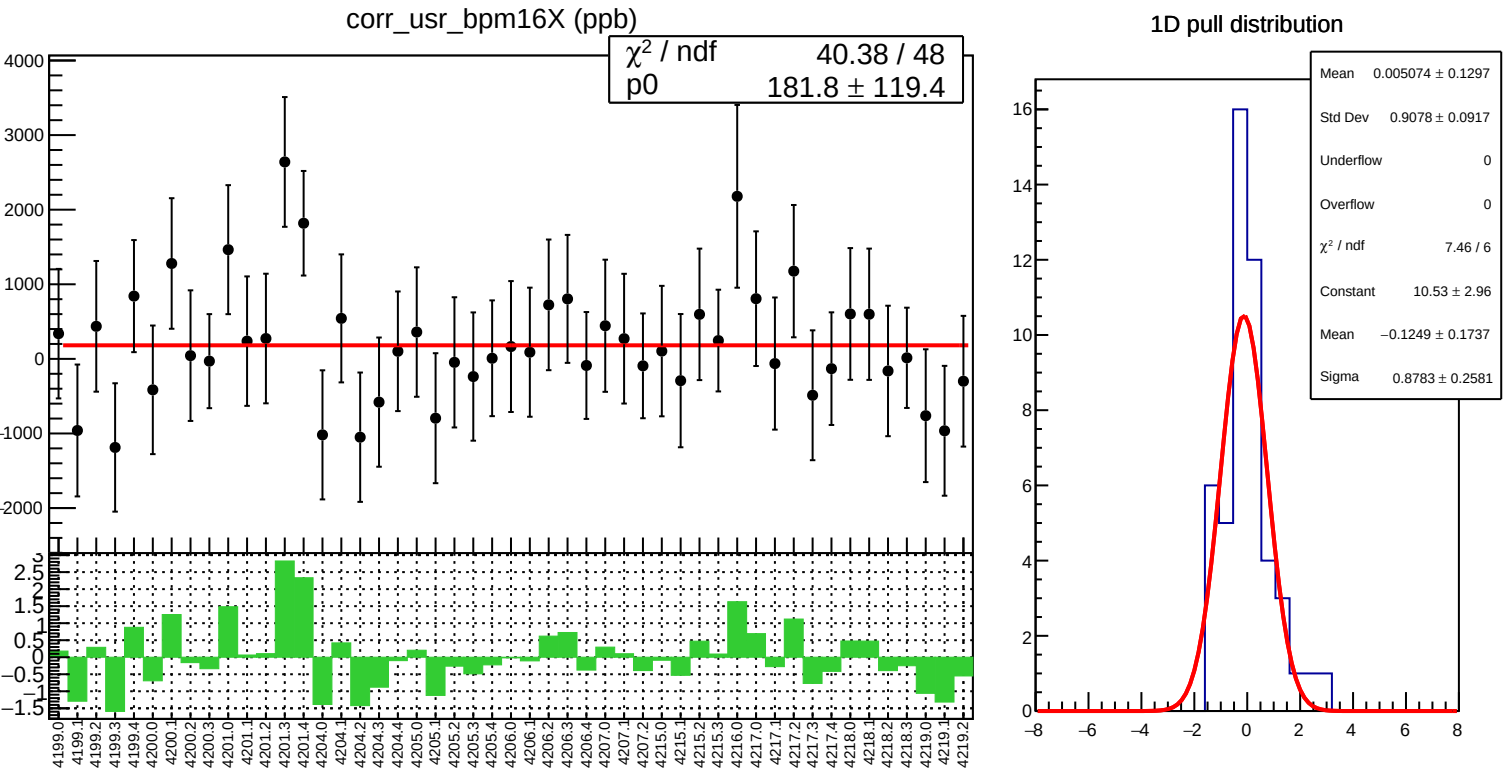

corr_usr_bpm1X (ppb)
χ² / ndf 38.06 / 48
p0 238.1± 131.8
3000
2000
1000
0
-1000
-2000
-3000
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

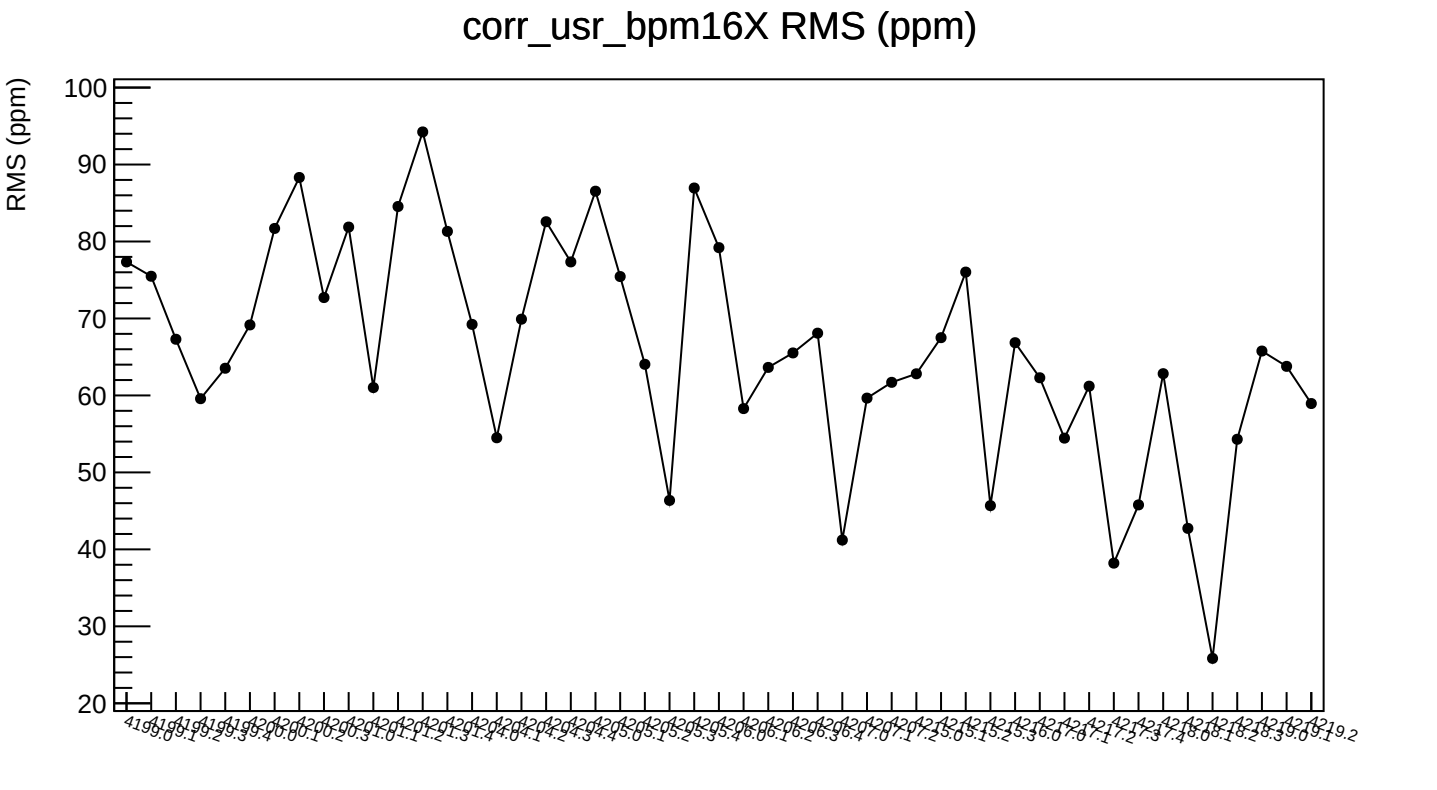

1D pull distribution
Mean 0.008892 ± 0.1259
Std Dev 0.8813 ± 0.08903
Underflow 0
Overflow 0
χ² / ndf 1.749 / 6
Constant 10.53 ± 1.96
Mean −0.09924 ± 0.17034
Sigma 1.008 ± 0.145
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

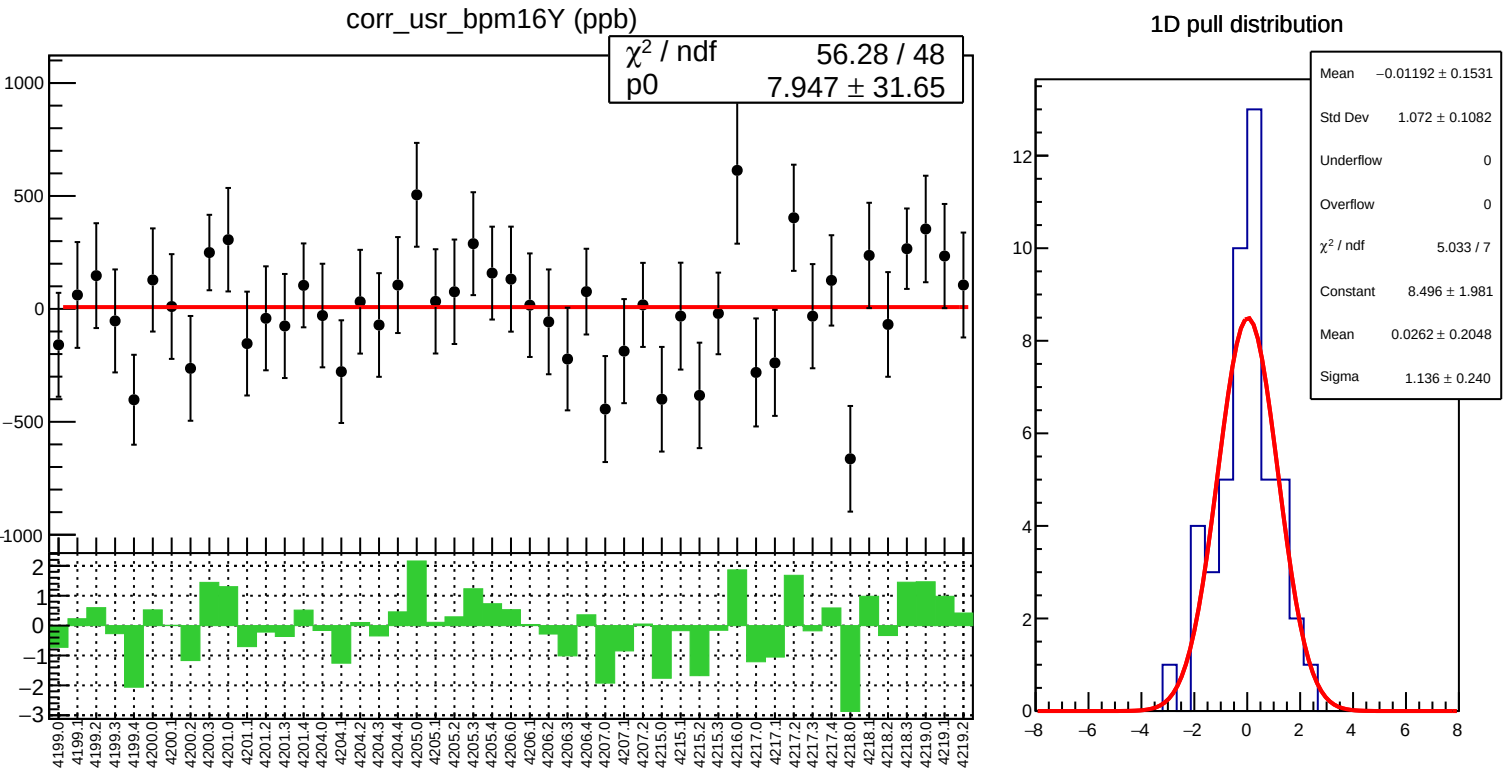

corr_usr_bpm1X RMS (ppm)
RMS (ppm)
120
110
100
90
80
70
60
50
40

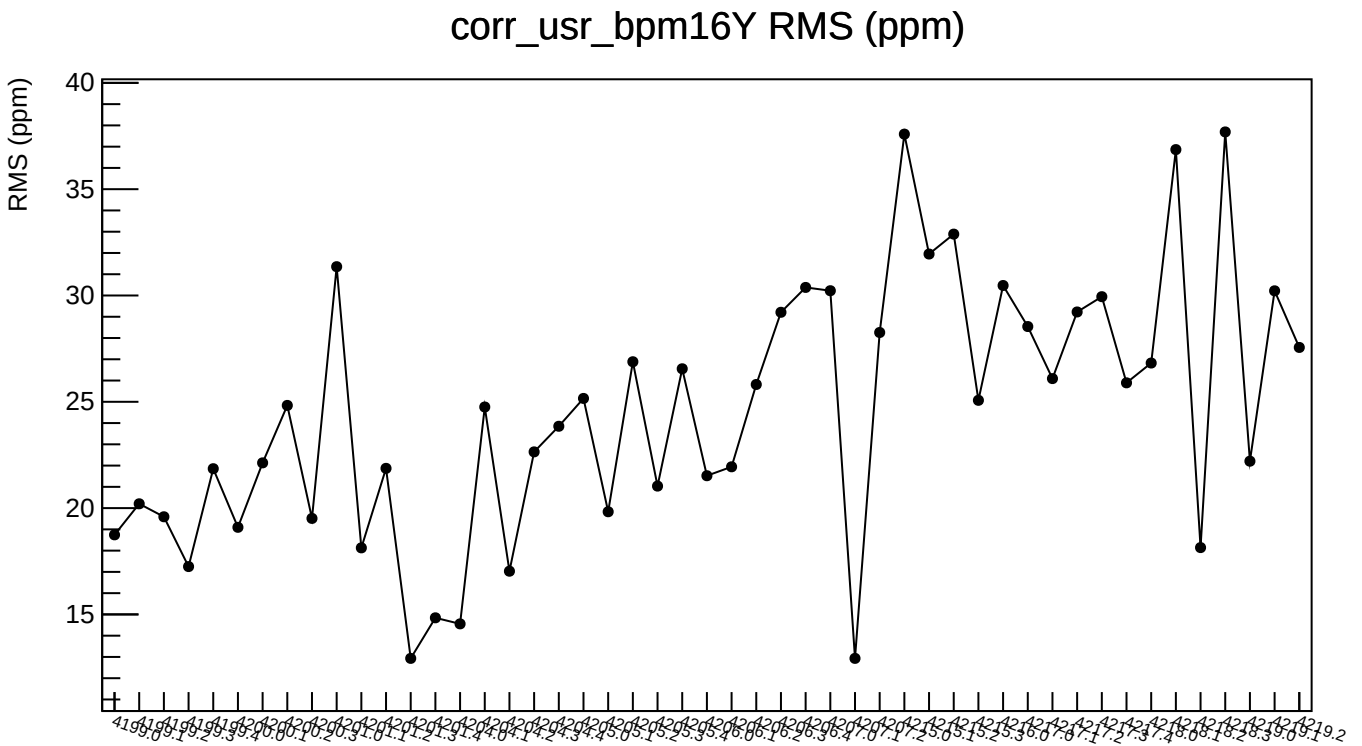

corr_usr_bpm1Y (ppb)
χ² / ndf 46.69 / 48
p0 −21 ± 24.51
1D pull distribution
Mean 0.001053 ± 0.1394
Std Dev 0.9761 ± 0.0986
Underflow 0
Overflow 0
χ² / ndf 10.64 / 7
Constant 9.712 ± 2.997
Mean −0.1566 ± 0.1421
Sigma 0.8437 ± 0.2293

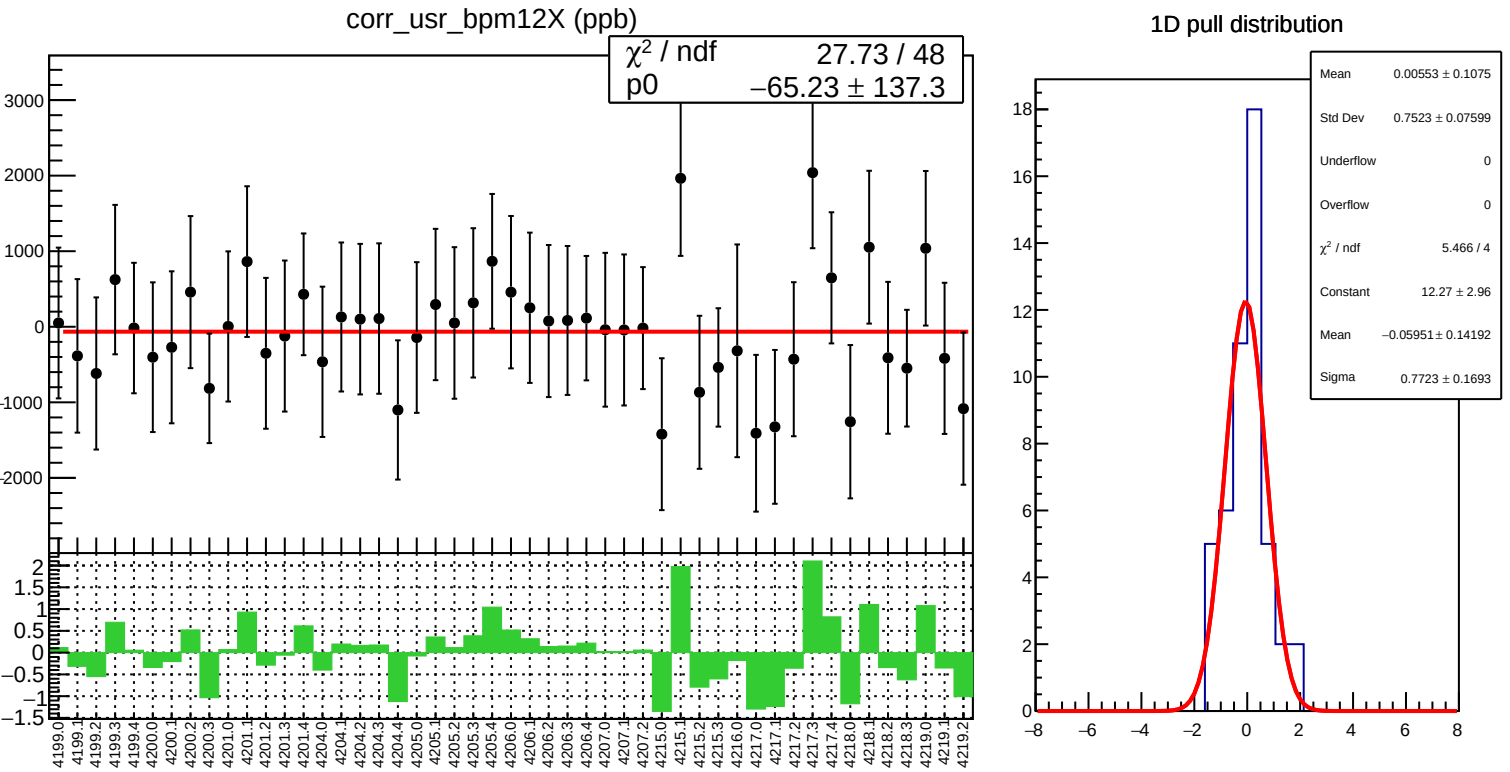

corr_usr_bpm1Y RMS (ppm)
RMS (ppm)
50
40
30
20
10

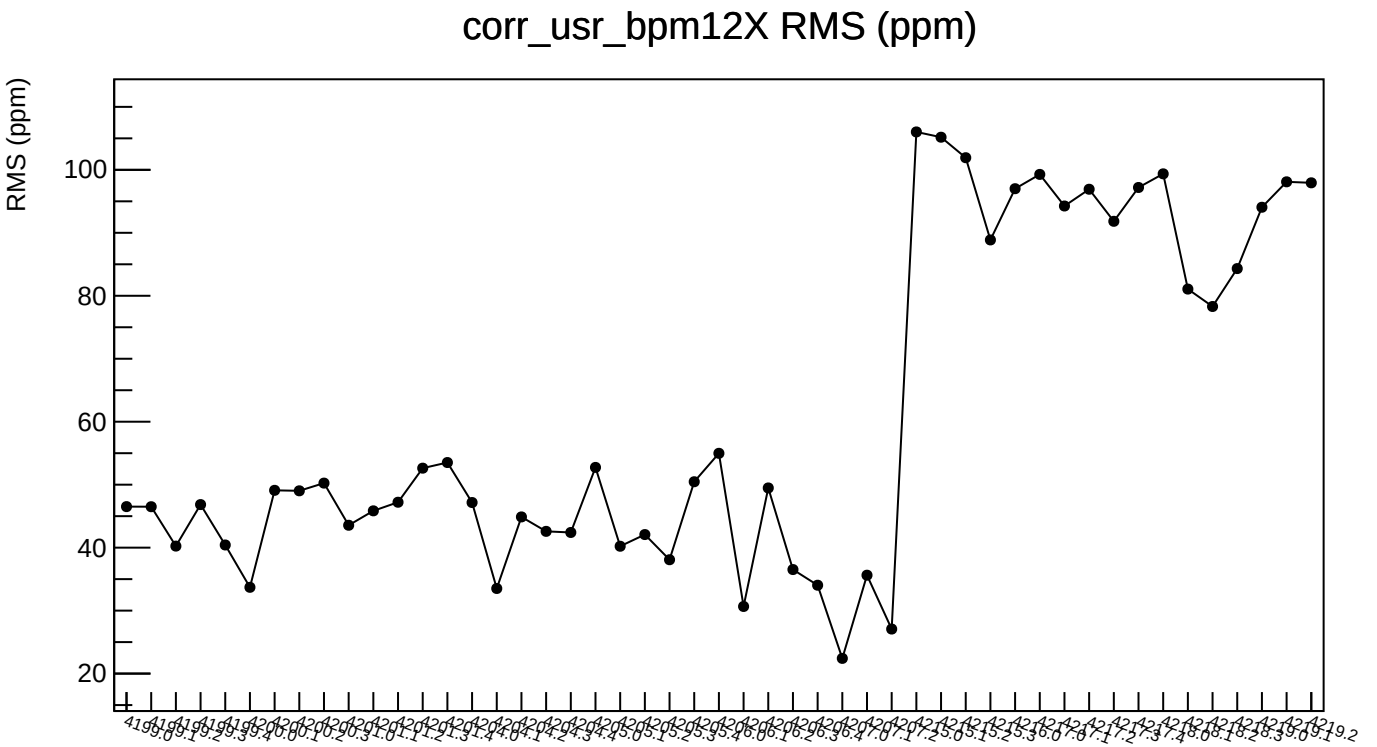

corr_usr_bpm16X (ppb)
χ² / ndf 40.38 / 48
p0 181.8 ± 119.4
1D pull distribution
Mean 0.005074 ± 0.1297
Std Dev 0.9078 ± 0.0917
Underflow 0
Overflow 0
χ² / ndf 7.46 / 6
Constant 10.53 ± 2.96
Mean −0.1249 ± 0.1737
Sigma 0.8783 ± 0.2581

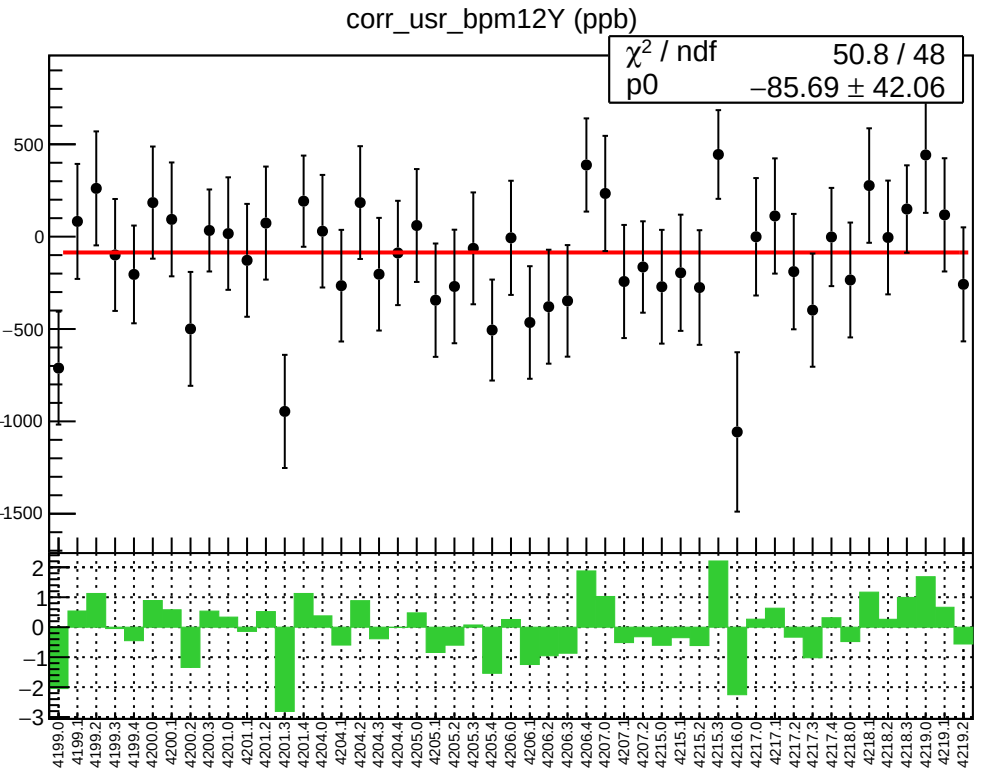

corr_usr_bpm16X RMS (ppm)
RMS (ppm)
100
90
80
70
60
50
40
30
20

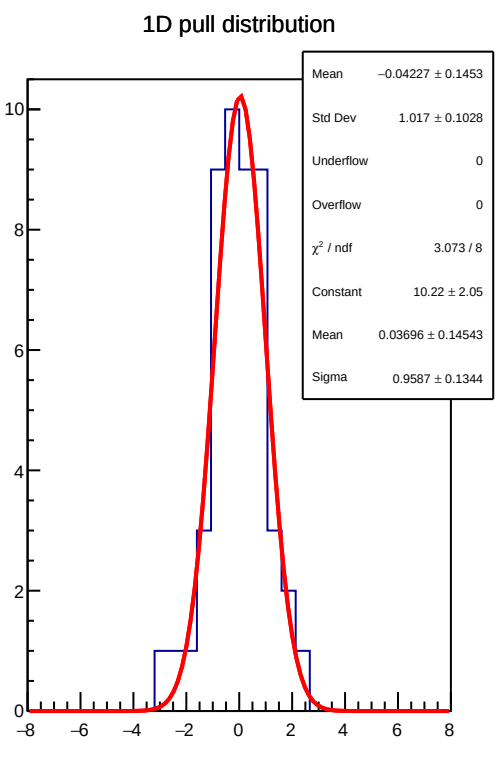

corr_usr_bpm16Y (ppb)
χ² / ndf 56.28 / 48
p0 7.947 ± 31.65
1000
500
0
−500
−1000
2
1
0
−1
−2
−3
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2
1D pull distribution
Mean −0.01192 ± 0.1531
Std Dev 1.072 ± 0.1082
Underflow 0
Overflow 0
χ² / ndf 5.033 / 7
Constant 8.496 ± 1.981
Mean 0.0262 ± 0.2048
Sigma 1.136 ± 0.240
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

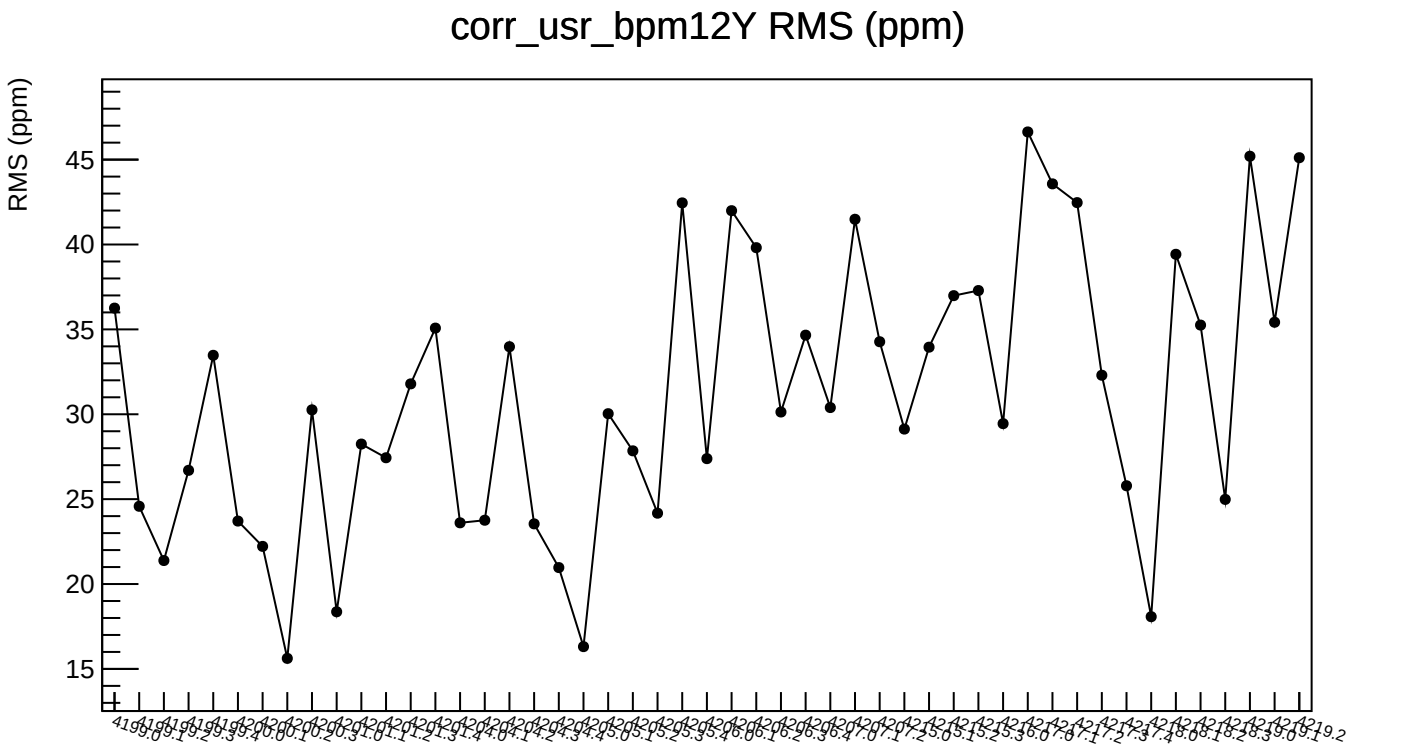

corr_usr_bpm16Y RMS (ppm)
RMS (ppm)
40
35
30
25
20
15

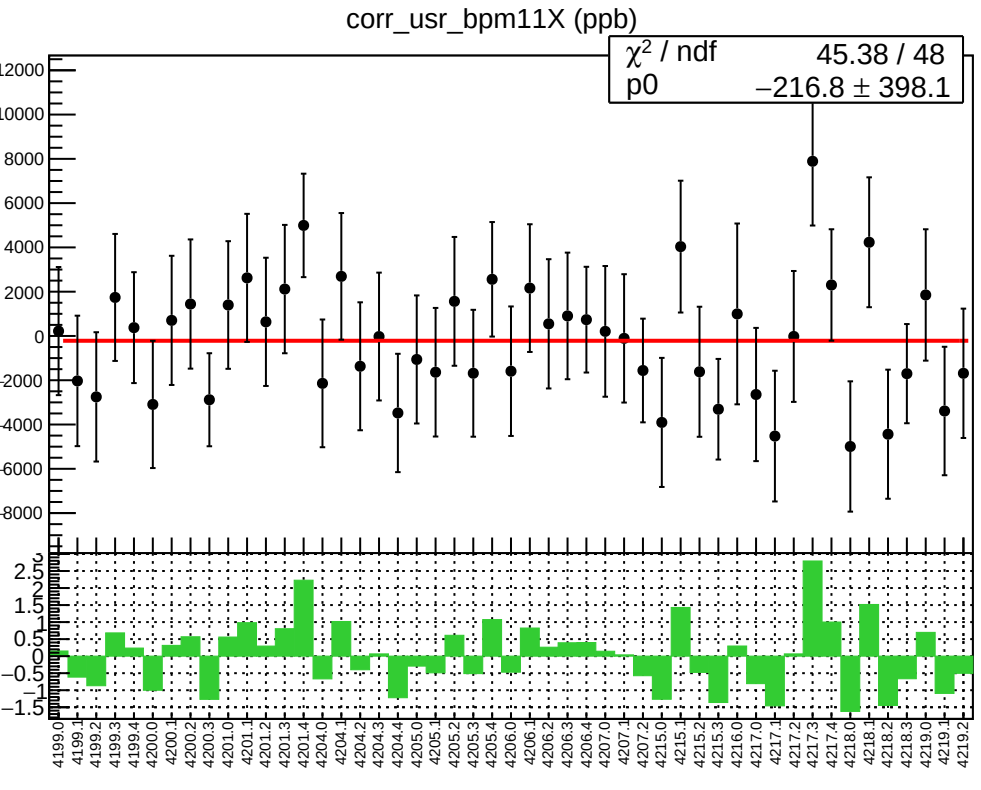

corr_usr_bpm12X (ppb)
χ² / ndf 27.73 / 48
p0 −65.23 ± 137.3
3000
2000
1000
0
-1000
-2000
2
1.5
1
0.5
0
−0.5
−1
−1.5
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2
1D pull distribution
Mean 0.00553 ± 0.1075
Std Dev 0.7523 ± 0.07599
Underflow 0
Overflow 0
χ² / ndf 5.466 / 4
Constant 12.27 ± 2.96
Mean −0.05951 ± 0.14192
Sigma 0.7723 ± 0.1693
18
16
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

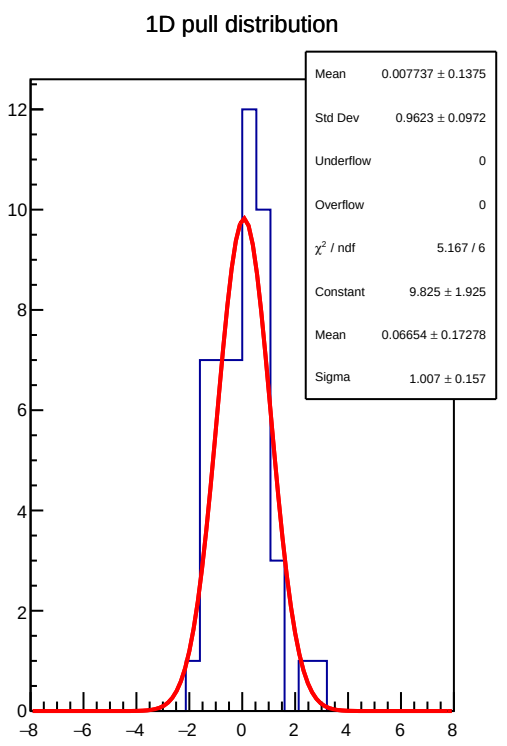

corr_usr_bpm12X RMS (ppm)
RMS (ppm)
100
80
60
40
20

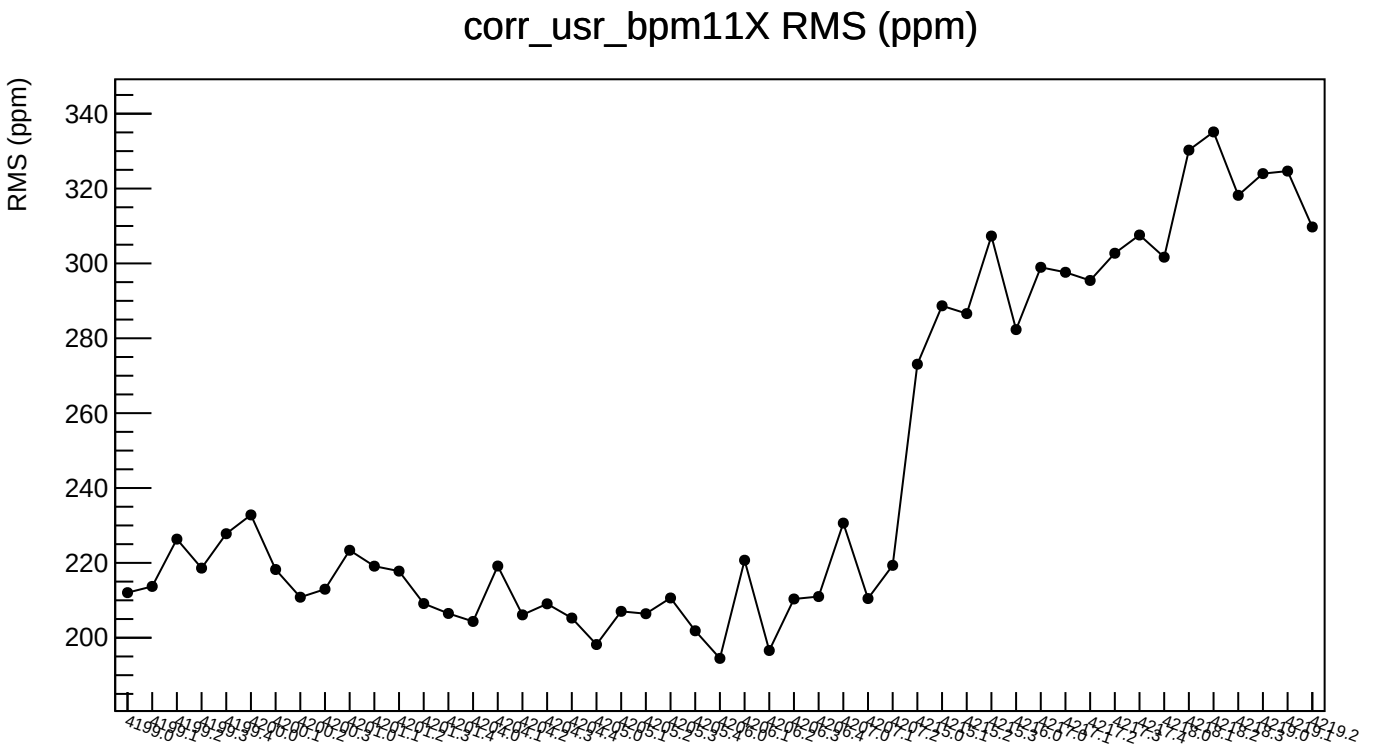

corr_usr_bpm12Y (ppb)
χ² / ndf 50.8 / 48
p0 −85.69 ± 42.06
500
0
−500
−1000
−1500
2
1
0
−1
−2
−3
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2

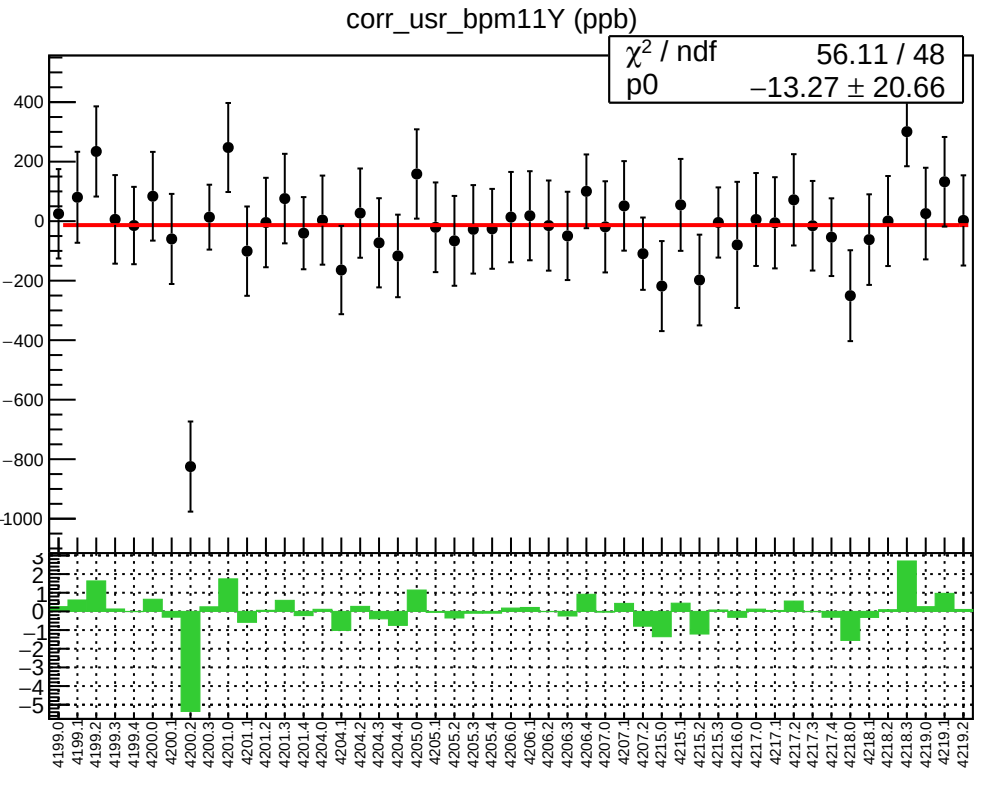

1D pull distribution
Mean −0.04227 ± 0.1453
Std Dev 1.017 ± 0.1028
Underflow 0
Overflow 0
χ² / ndf 3.073 / 8
Constant 10.22 ± 2.05
Mean 0.03696 ± 0.14543
Sigma 0.9587 ± 0.1344
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

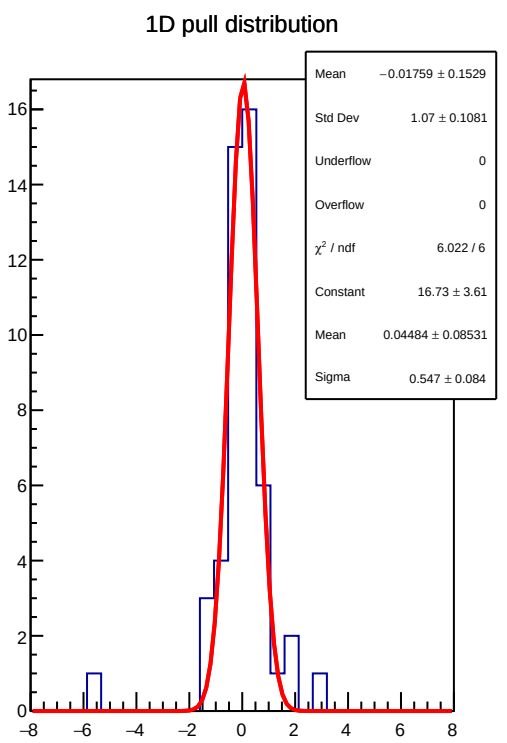

corr_usr_bpm12Y RMS (ppm)
RMS (ppm)
45
40
35
30
25
20
15

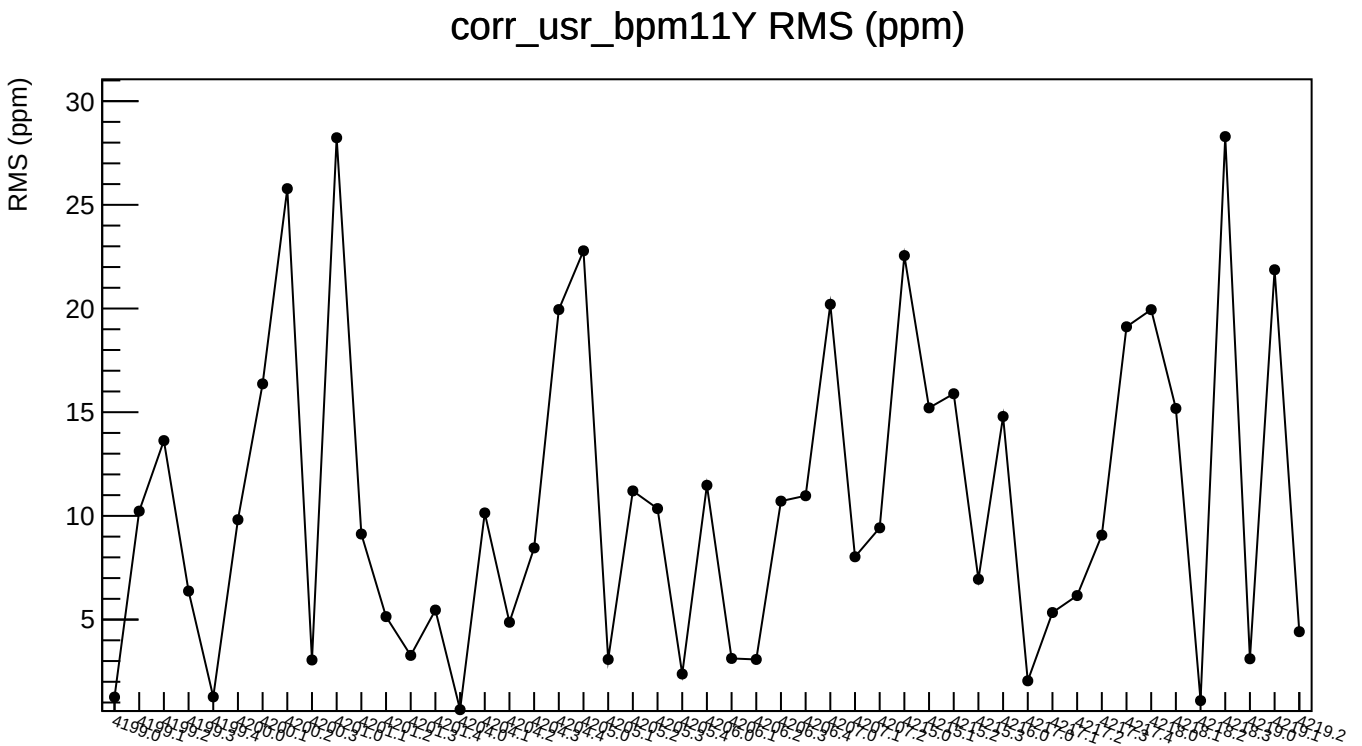

corr_usr_bpm11X (ppb)
χ² / ndf 45.38 / 48
p0 −216.8 ± 398.1

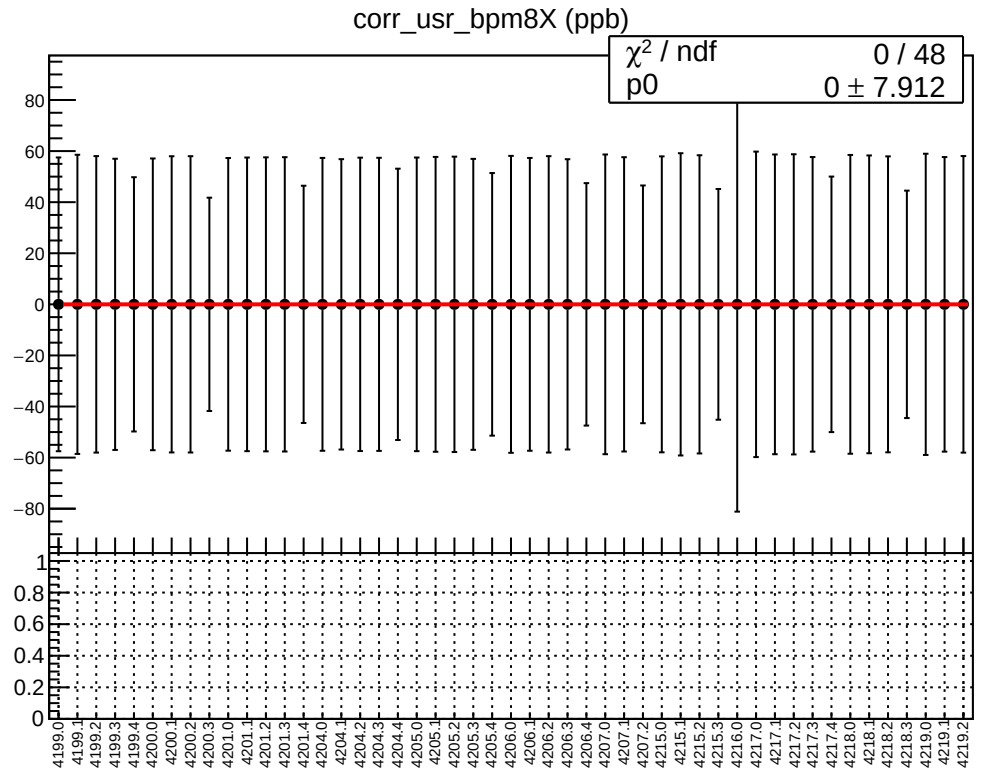

1D pull distribution
Mean 0.007737 ± 0.1375
Std Dev 0.9623 ± 0.0972
Underflow 0
Overflow 0
χ² / ndf 5.167 / 6
Constant 9.825 ± 1.925
Mean 0.06654 ± 0.17278
Sigma 1.007 ± 0.157

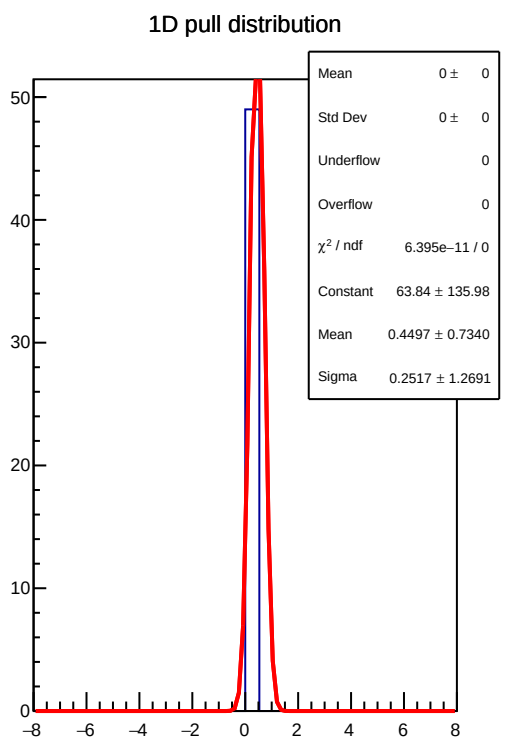

corr_usr_bpm11X RMS (ppm)
RMS (ppm)
340
320
300
280
260
240
220
200

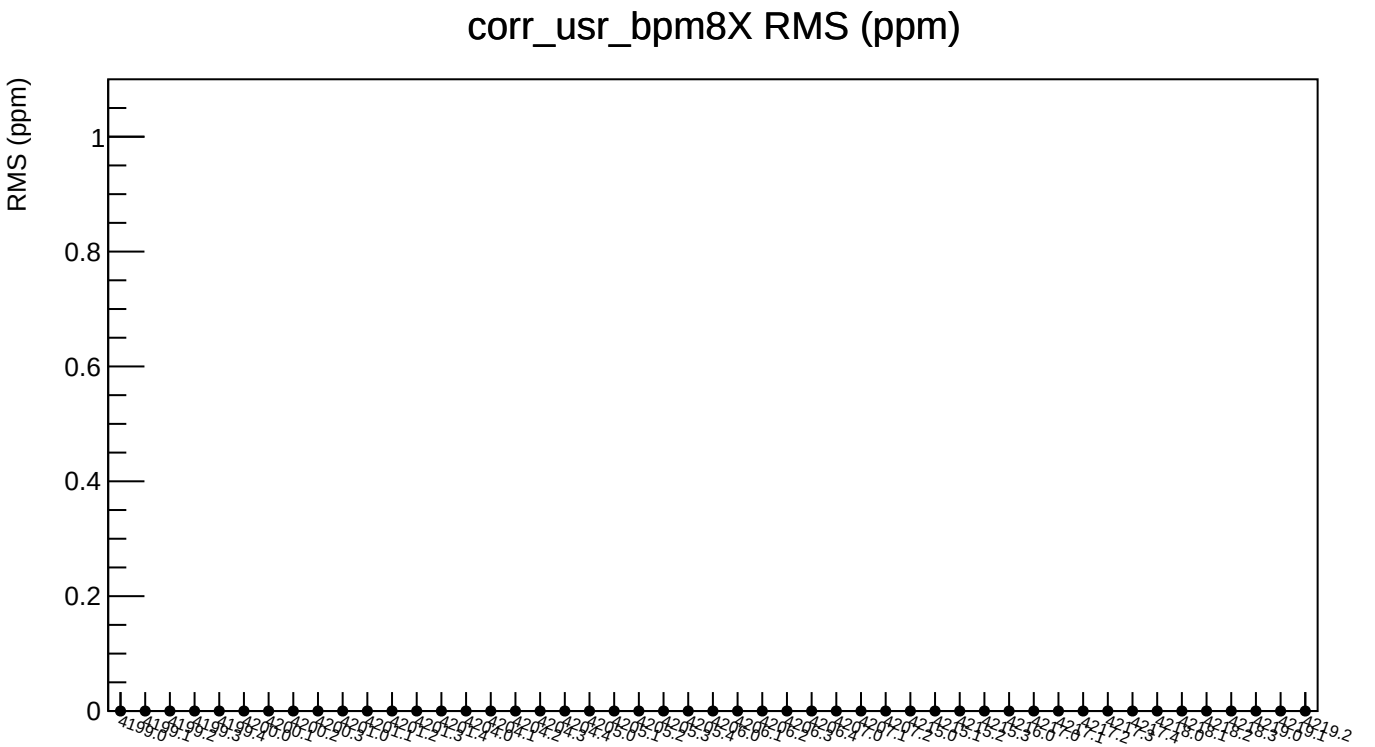

corr_usr_bpm11Y (ppb)
χ² / ndf 56.11 / 48
p0 −13.27 ± 20.66

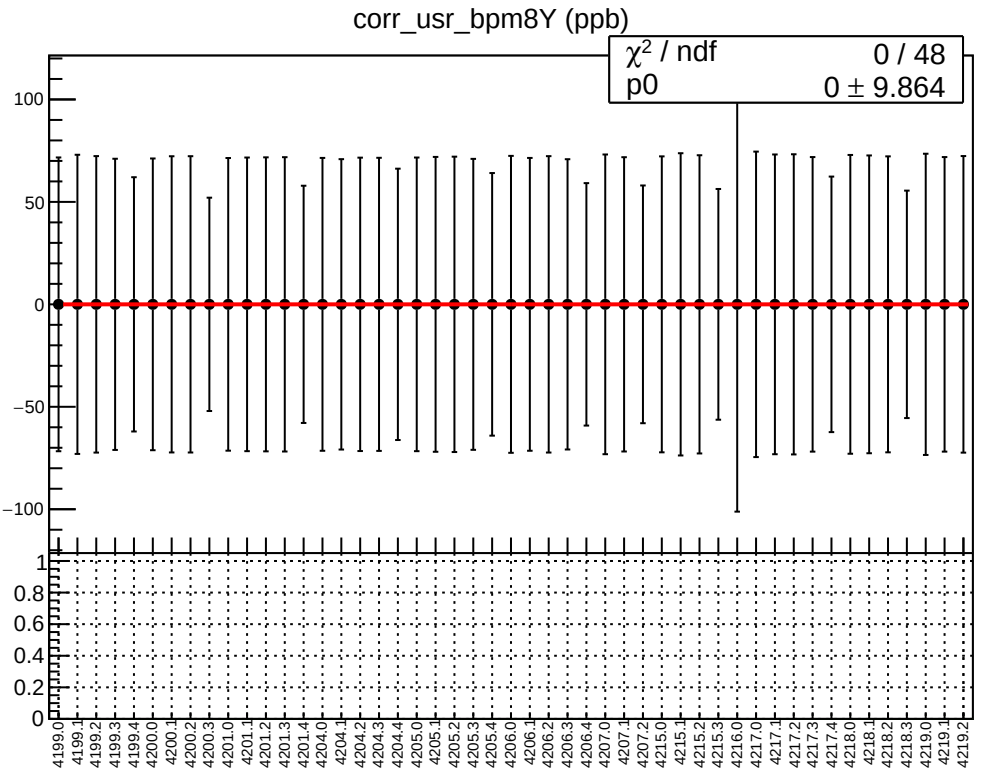

1D pull distribution
Mean −0.01759 ± 0.1529
Std Dev 1.07 ± 0.1081
Underflow 0
Overflow 0
χ² / ndf 6.022 / 6
Constant 16.73 ± 3.61
Mean 0.04484 ± 0.08531
Sigma 0.547 ± 0.084

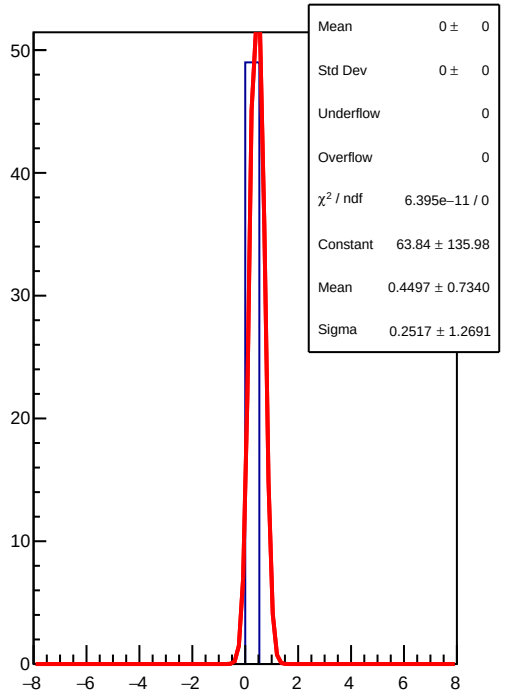

corr_usr_bpm11Y RMS (ppm)
RMS (ppm)
30
25
20
15
10
5

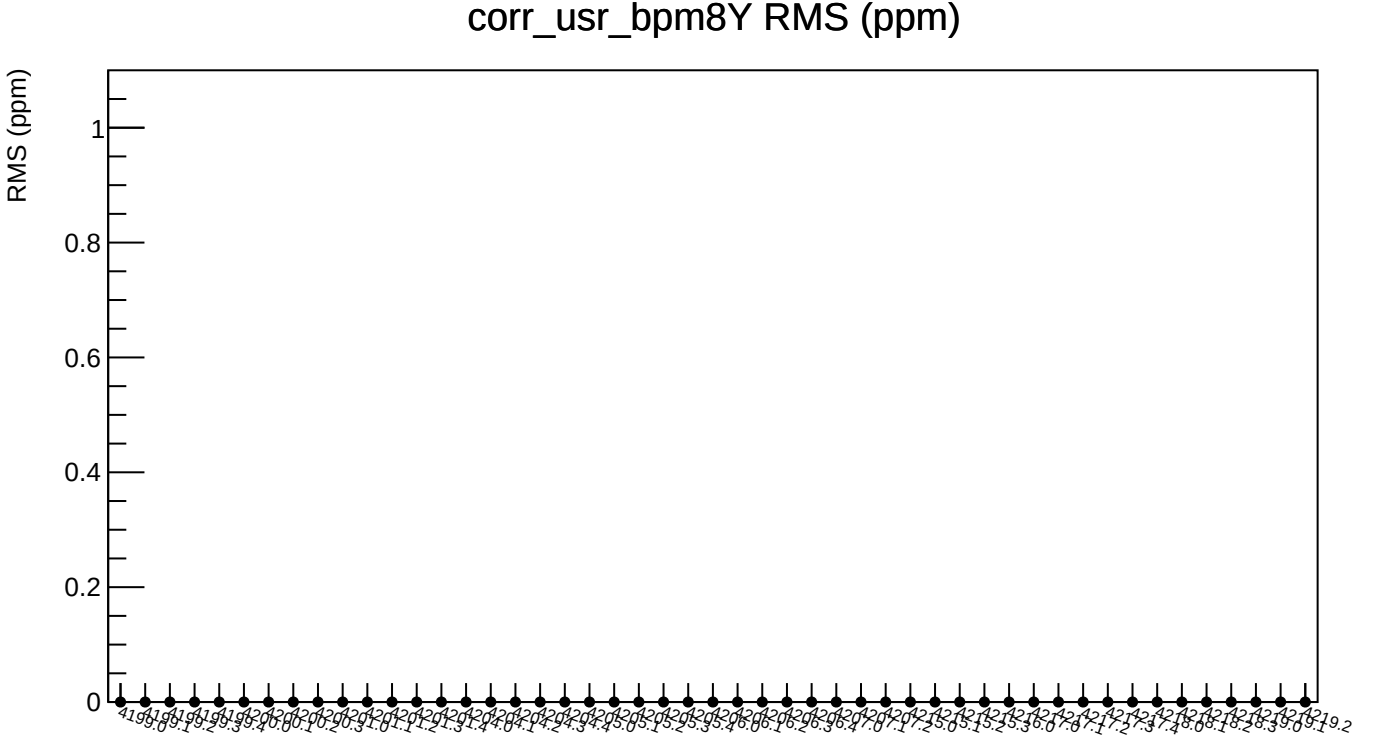

corr_usr_bpm8X (ppb)
χ² / ndf 0 / 48
p0 0 ± 7.912


1D pull distribution
Mean 0 ± 0
Std Dev 0 ± 0
Underflow 0
Overflow 0
χ² / ndf 6.395e−11 / 0
Constant 63.84 ± 135.98
Mean 0.4497 ± 0.7340
Sigma 0.2517 ± 1.2691


corr_usr_bpm8X RMS (ppm)
RMS (ppm)
1
0.8
0.6
0.4
0.2
0


corr_usr_bpm8Y (ppb)
χ² / ndf 0 / 48
p0 0 ± 9.864
100
50
0
−50
−100
1
0.8
0.6
0.4
0.2
0
4199.0
4199.1
4199.2
4199.3
4199.4
4200.0
4200.1
4200.2
4200.3
4201.0
4201.1
4201.2
4201.3
4201.4
4204.0
4204.1
4204.2
4204.3
4204.4
4205.0
4205.1
4205.2
4205.3
4205.4
4206.0
4206.1
4206.2
4206.3
4206.4
4207.0
4207.1
4207.2
4215.0
4215.1
4215.2
4215.3
4216.0
4217.0
4217.1
4217.2
4217.3
4217.4
4218.0
4218.1
4218.2
4218.3
4219.0
4219.1
4219.2


1D pull distribution
Mean 0 ± 0
Std Dev 0 ± 0
Underflow 0
Overflow 0
χ² / ndf 6.395e−11 / 0
Constant 63.84 ± 135.98
Mean 0.4497 ± 0.7340
Sigma 0.2517 ± 1.2691
50
40
30
20
10
0
−8
−6
−4
−2
0
2
4
6
8


corr_usr_bpm8Y RMS (ppm)
RMS (ppm)
0
0.2
0.4
0.6
0.8
1