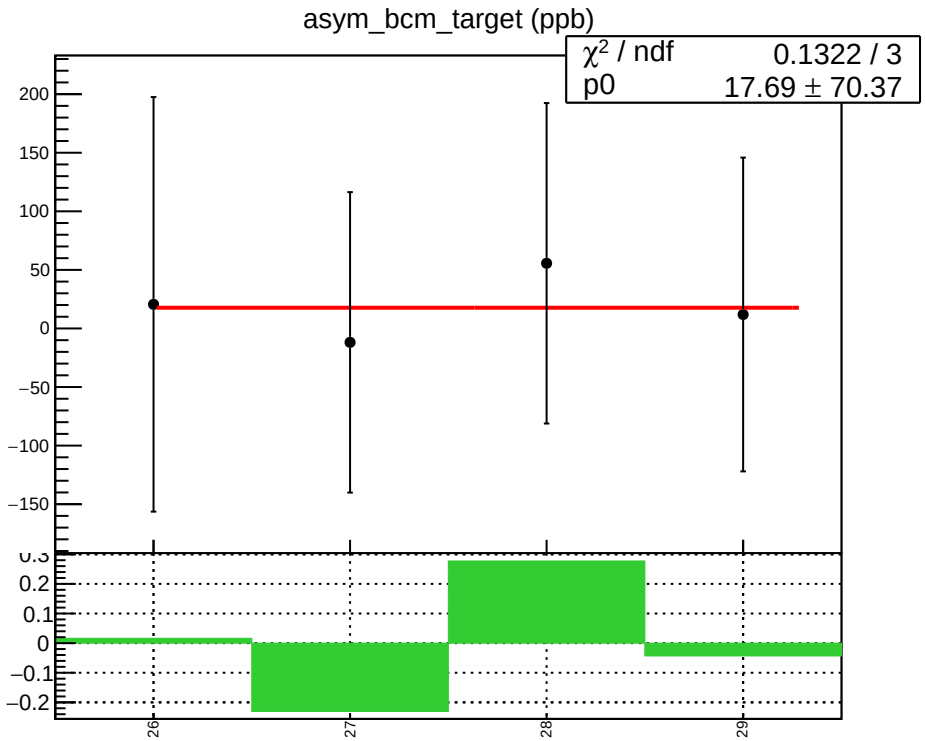
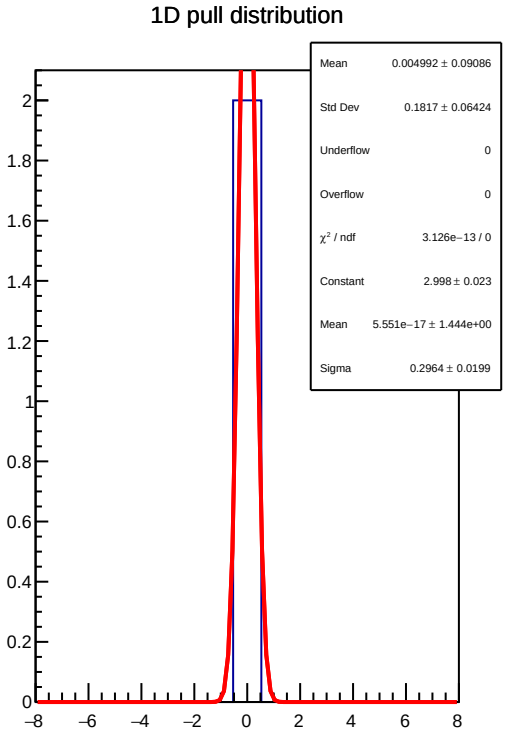
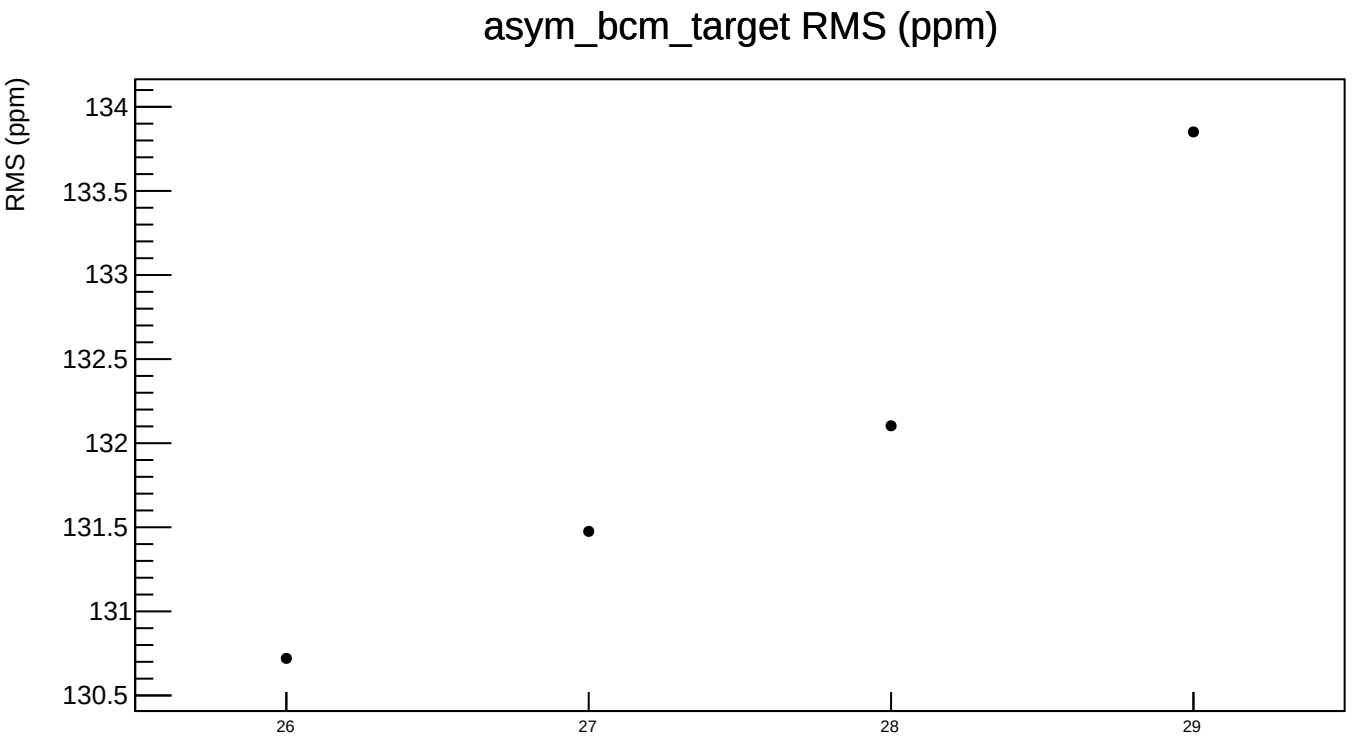
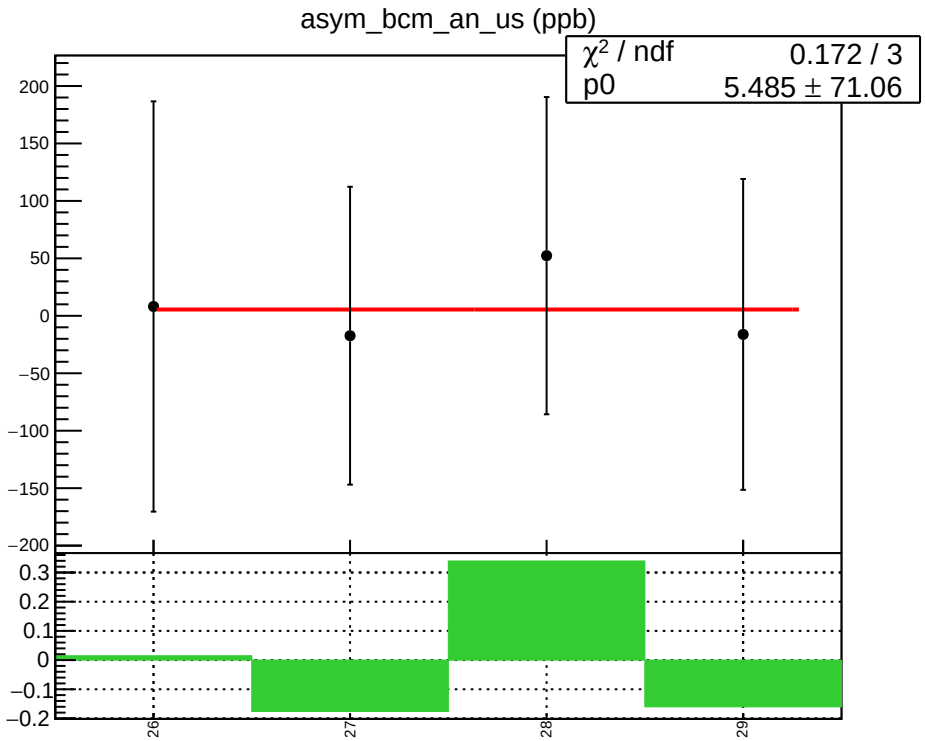
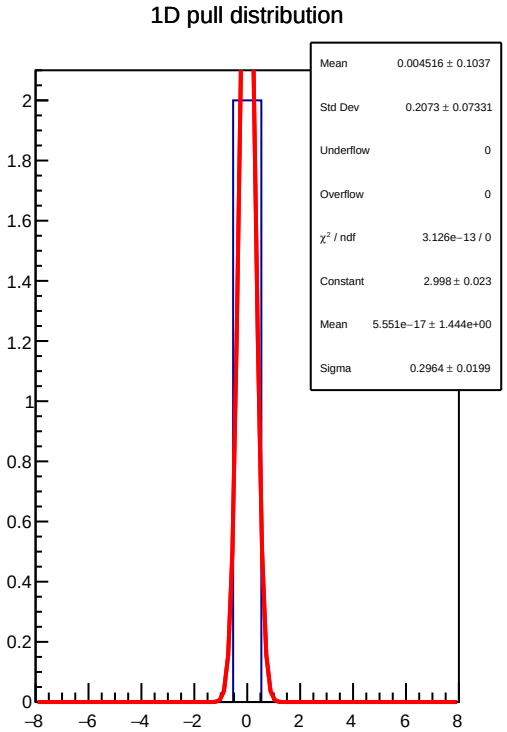
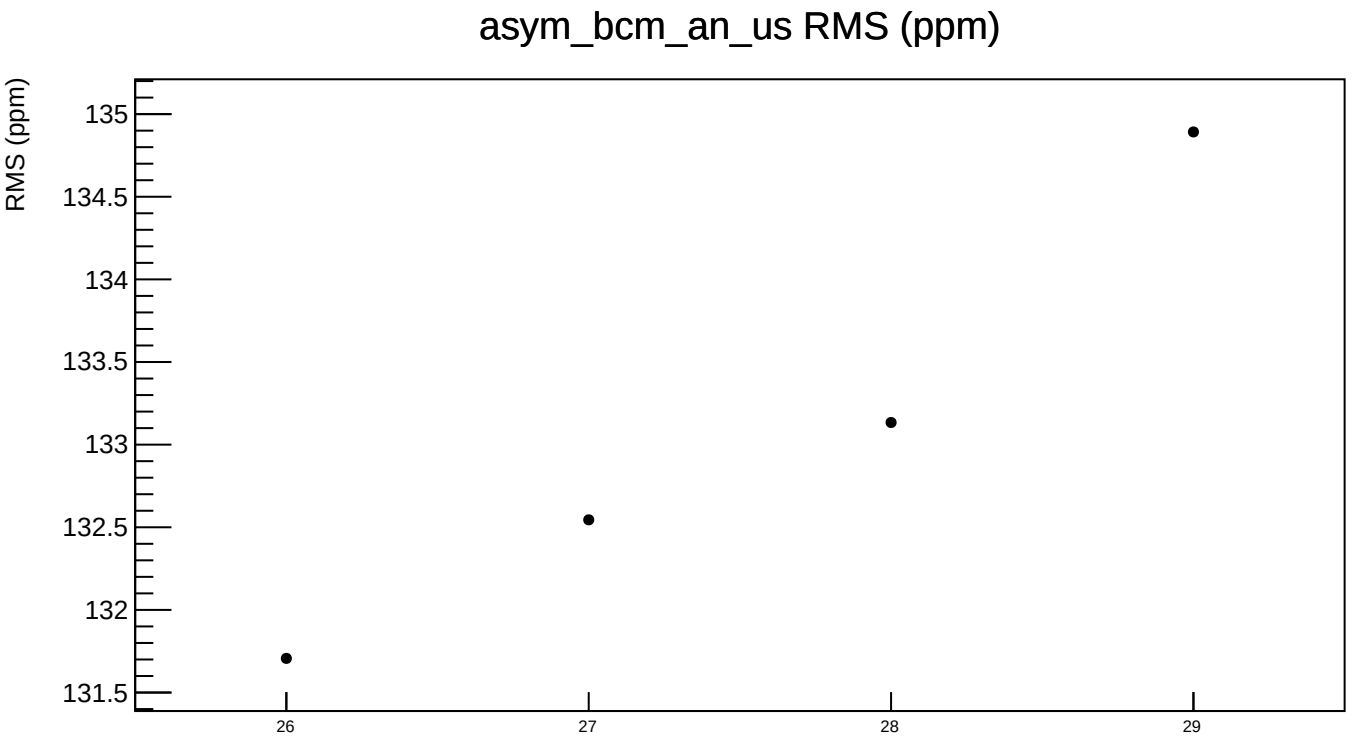

asym_bcm_target (ppb)
χ² / ndf 0.1322 / 3
p0 17.69 ± 70.37
200
150
100
50
0
−50
−100
−150
0.3
0.2
0.1
0
−0.1
−0.2
26
27
28
29

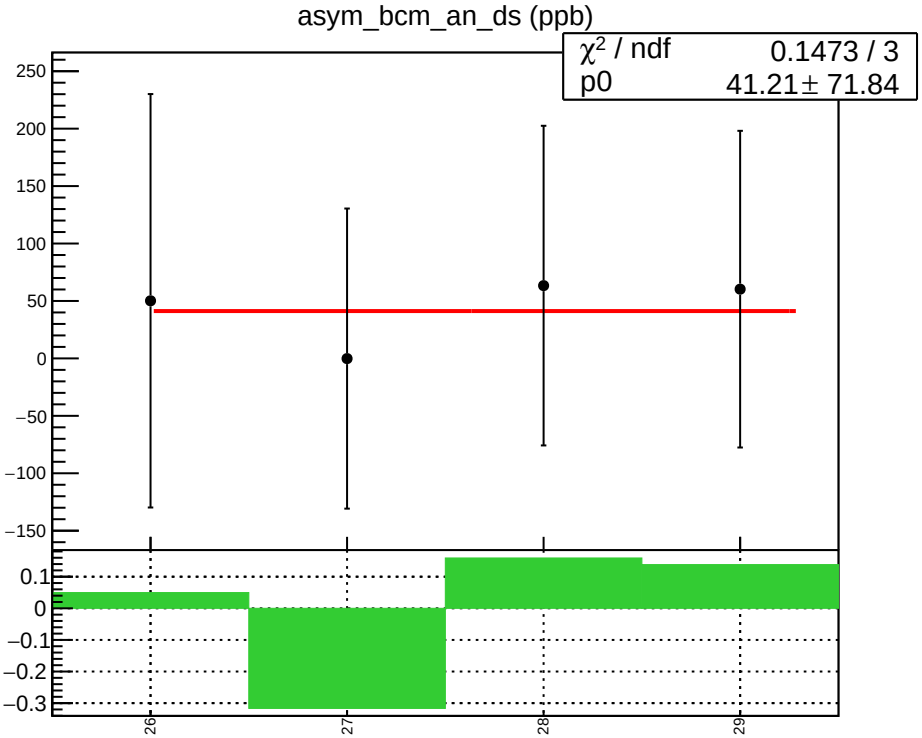

1D pull distribution
Mean 0.004992 ± 0.09086
Std Dev 0.1817 ± 0.06424
Underflow 0
Overflow 0
χ² / ndf 3.126e−13 / 0
Constant 2.998 ± 0.023
Mean 5.551e−17 ± 1.444e+00
Sigma 0.2964 ± 0.0199
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

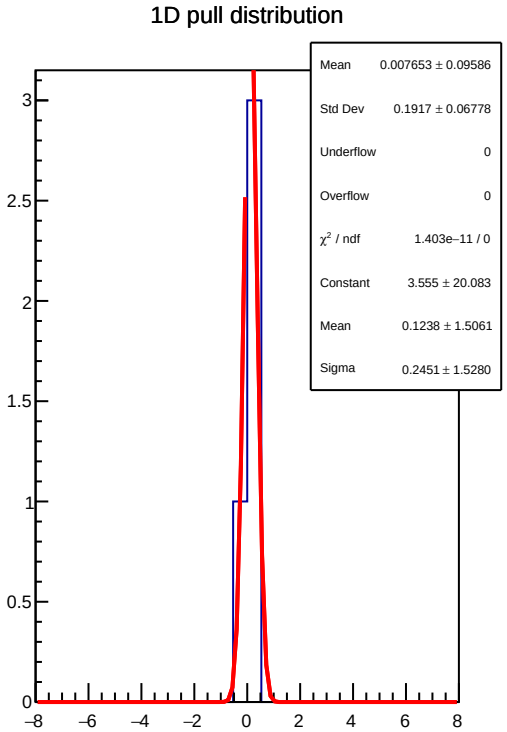

asym_bcm_target RMS (ppm)
RMS (ppm)
134
133.5
133
132.5
132
131.5
131
130.5
26
27
28
29

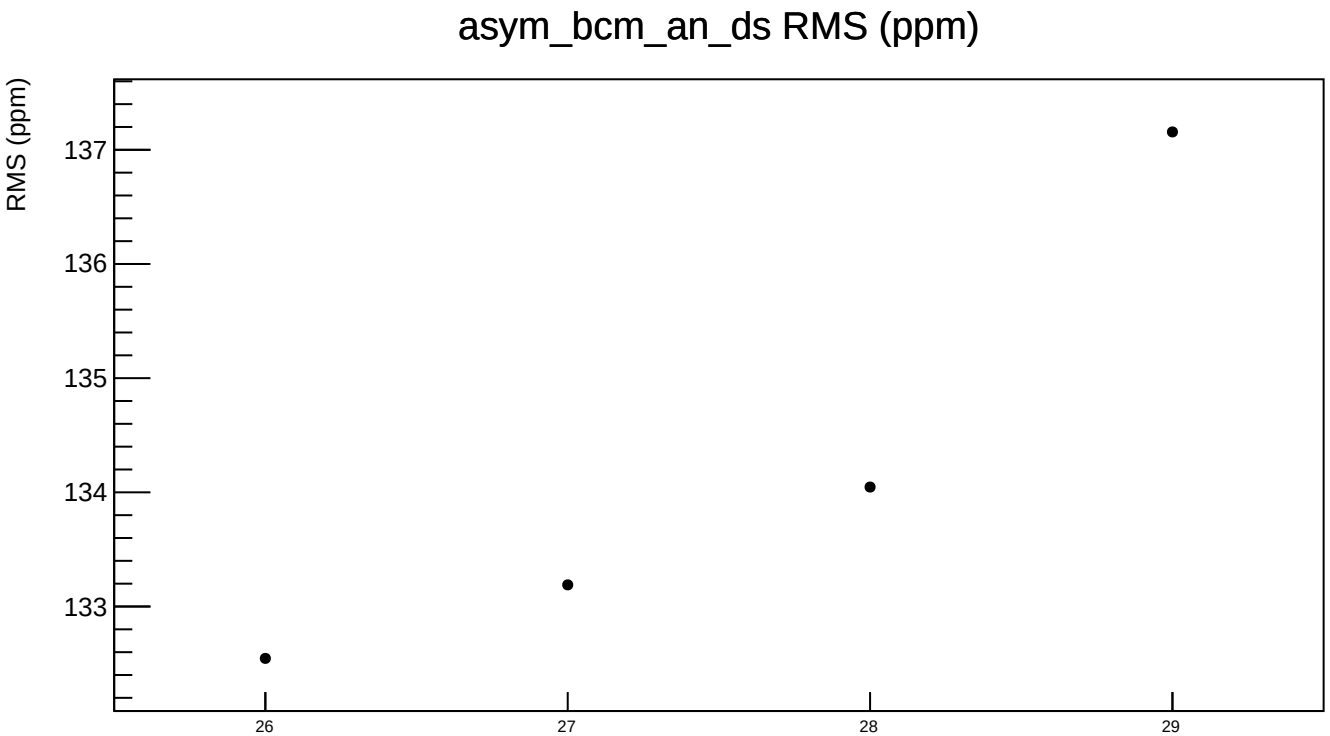

asym_bcm_an_us (ppb)
χ² / ndf 0.172 / 3
p0 5.485 ± 71.06
200
150
100
50
0
−50
−100
−150
−200
0.3
0.2
0.1
0
−0.1
−0.2
26
27
28
29

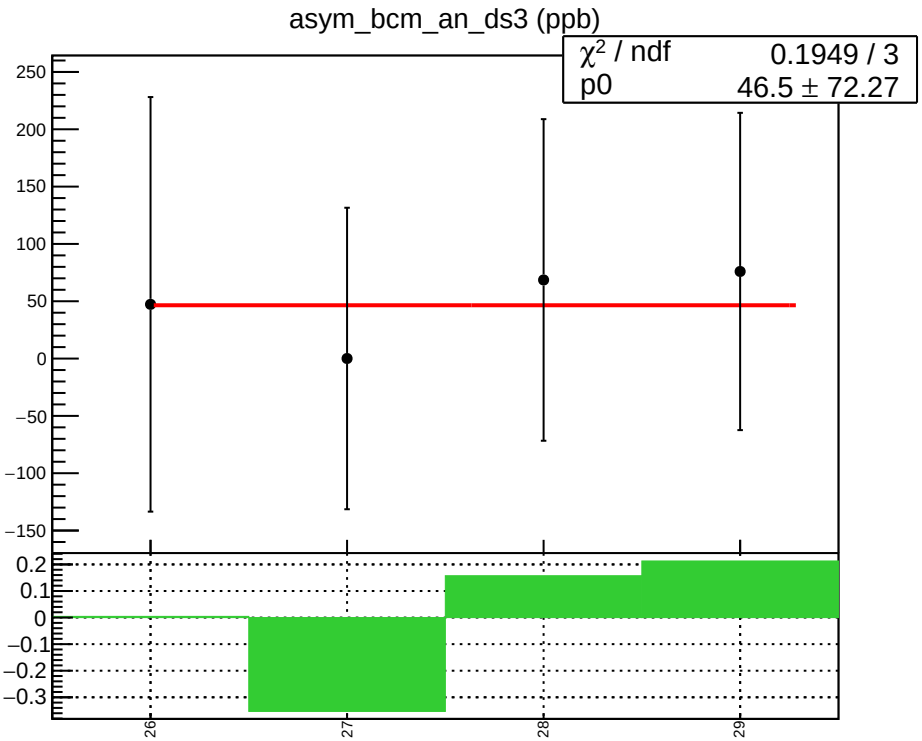

1D pull distribution
Mean 0.004516 ± 0.1037
Std Dev 0.2073 ± 0.07331
Underflow 0
Overflow 0
χ² / ndf 3.126e−13 / 0
Constant 2.998 ± 0.023
Mean 5.551e−17 ± 1.444e+00
Sigma 0.2964 ± 0.0199
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

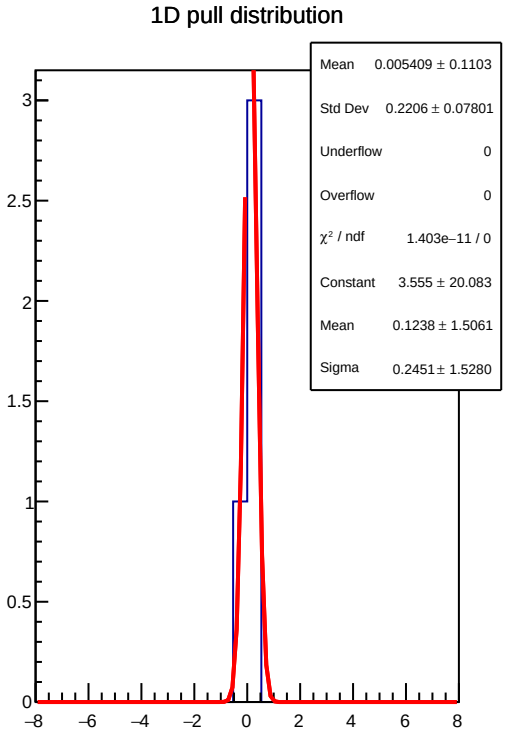

asym_bcm_an_us RMS (ppm)
RMS (ppm)
135
134.5
134
133.5
133
132.5
132
131.5
26
27
28
29

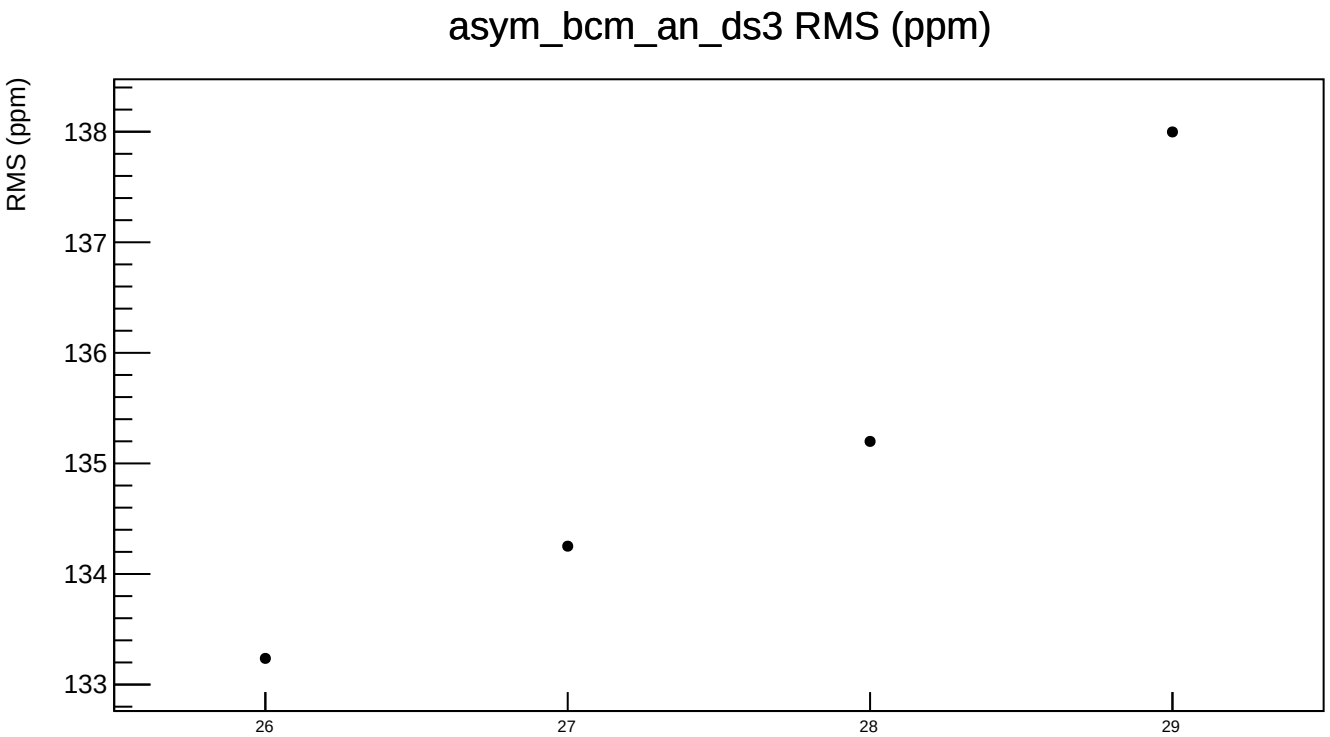

asym_bcm_an_ds (ppb)
χ² / ndf 0.1473 / 3
p0 41.21 ± 71.84
250
200
150
100
50
0
−50
−100
−150
0.1
0
−0.1
−0.2
−0.3
26
27
28
29

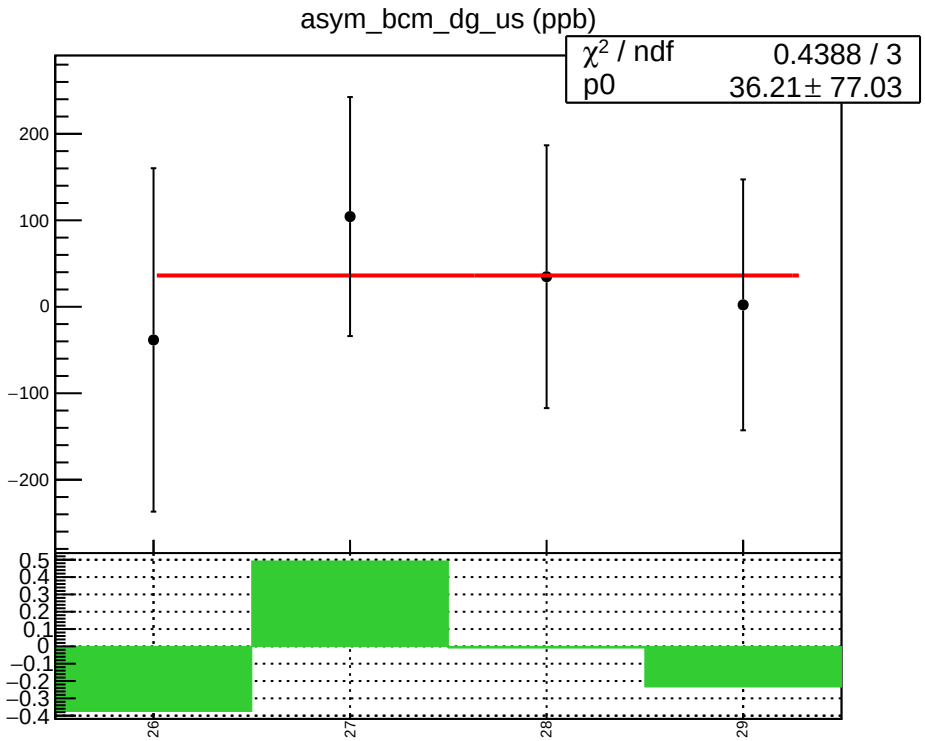

1D pull distribution
Mean 0.007653 ± 0.09586
Std Dev 0.1917 ± 0.06778
Underflow 0
Overflow 0
χ² / ndf 1.403e−11 / 0
Constant 3.555 ± 20.083
Mean 0.1238 ± 1.5061
Sigma 0.2451 ± 1.5280
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

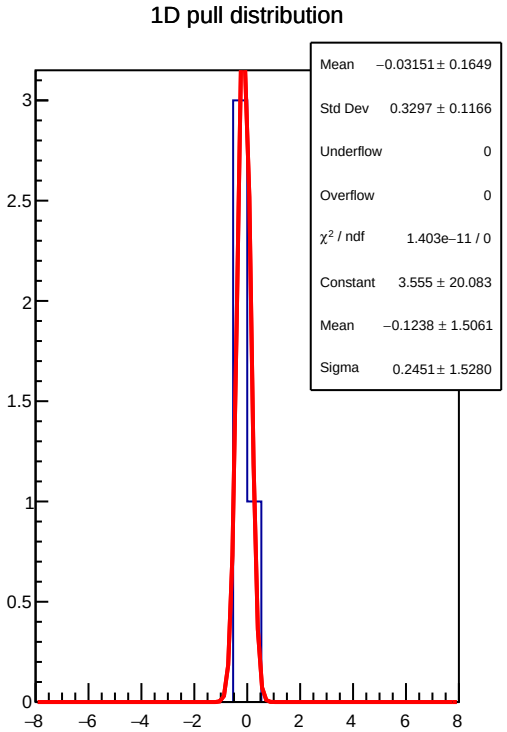

asym_bcm_an_ds RMS (ppm)
RMS (ppm)
137
136
135
134
133
26
27
28
29

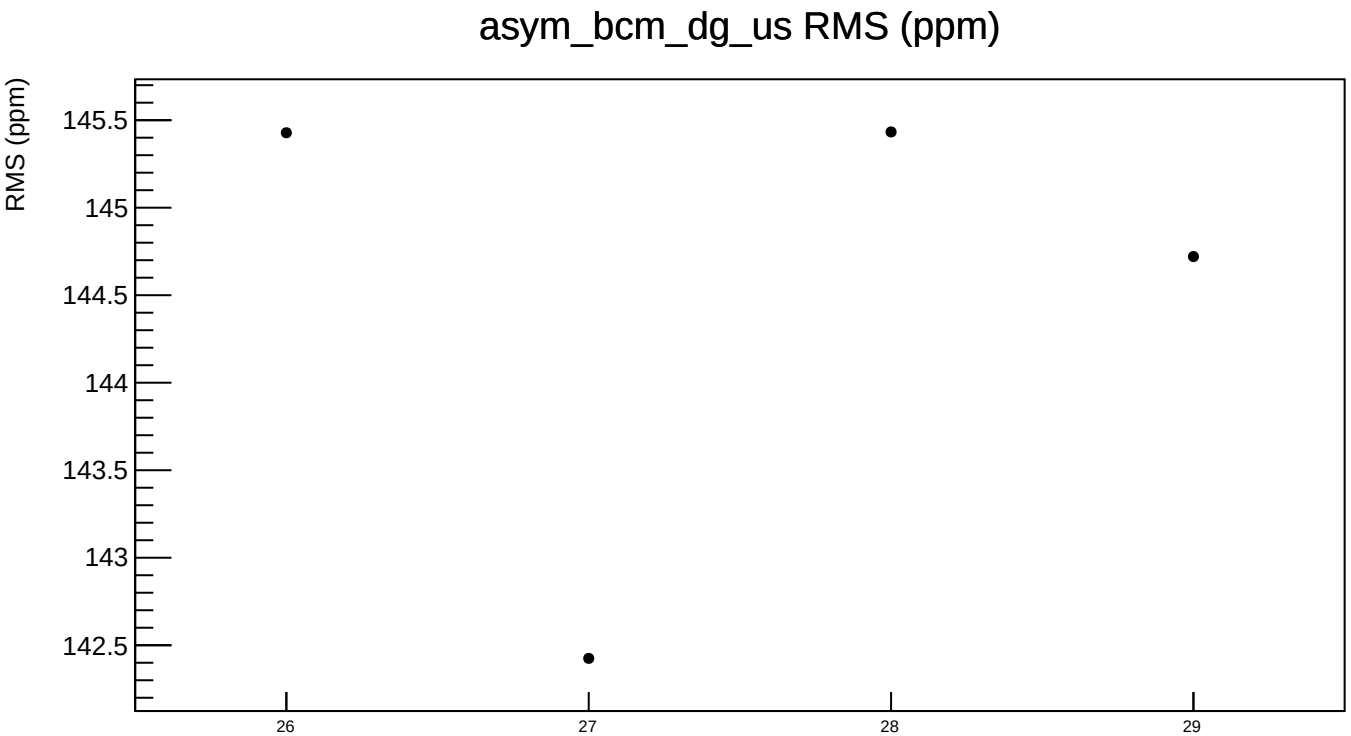

asym_bcm_an_ds3 (ppb)
χ² / ndf 0.1949 / 3
p0 46.5 ± 72.27
250
200
150
100
50
0
−50
−100
−150
0.2
0.1
0
−0.1
−0.2
−0.3
26
27
28
29

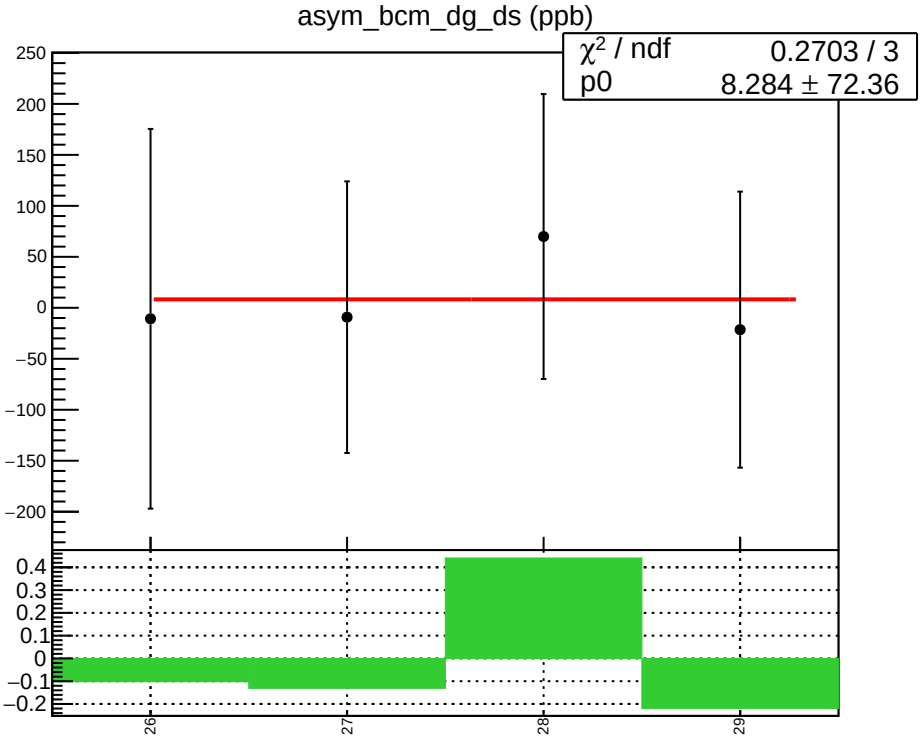

1D pull distribution
Mean 0.005409 ± 0.1103
Std Dev 0.2206 ± 0.07801
Underflow 0
Overflow 0
χ² / ndf 1.403e−11 / 0
Constant 3.555 ± 20.083
Mean 0.1238 ± 1.5061
Sigma 0.2451 ± 1.5280
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

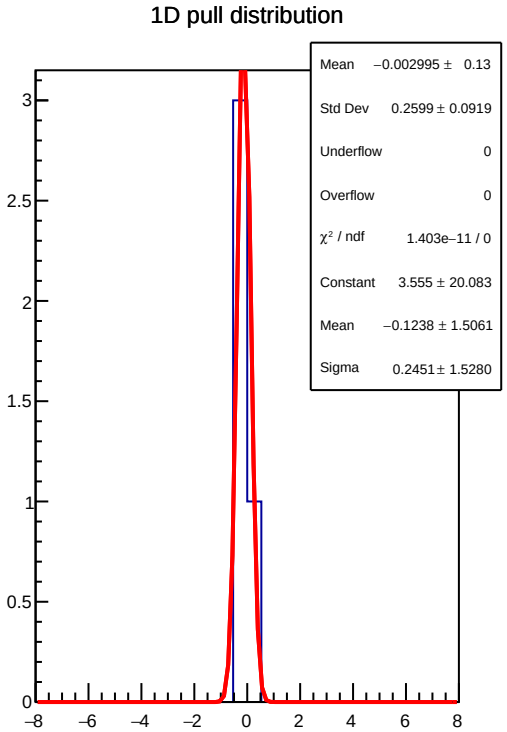

asym_bcm_an_ds3 RMS (ppm)
RMS (ppm)
138
137
136
135
134
133
26
27
28
29

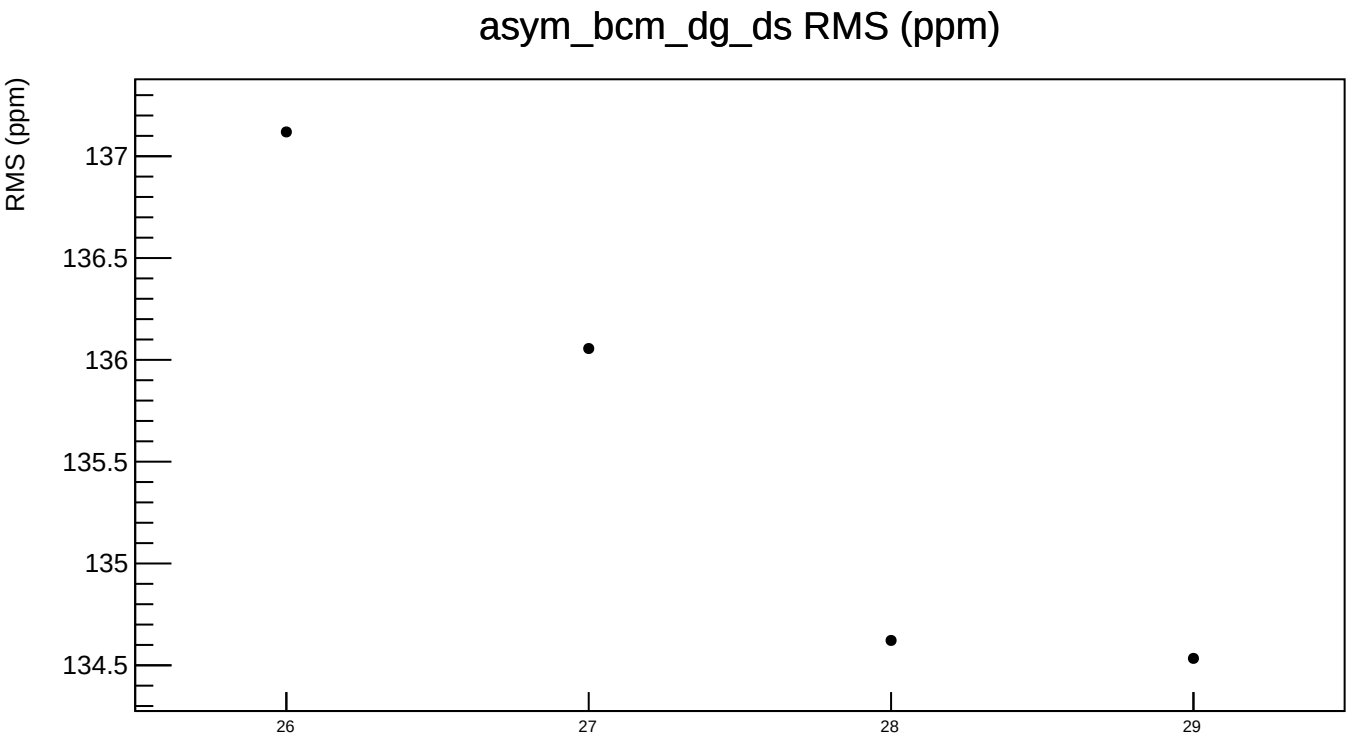

asym_bcm_dg_us (ppb)
χ² / ndf 0.4388 / 3
p0 36.21 ± 77.03
200
100
0
−100
−200
0.5
0.4
0.3
0.2
0.1
0
−0.1
−0.2
−0.3
−0.4
26
27
28
29

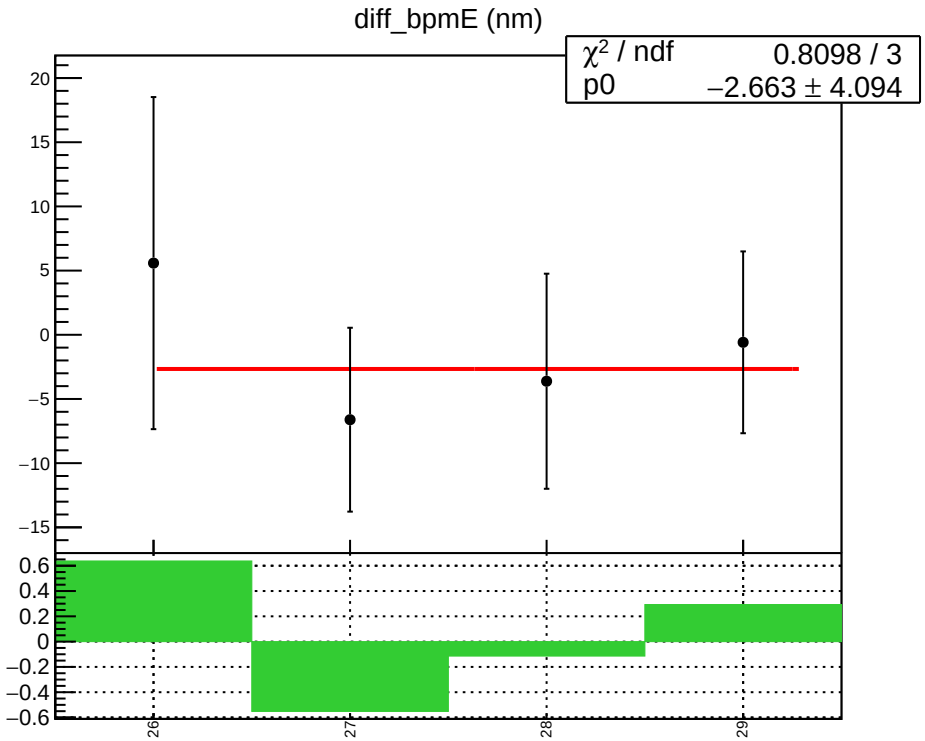

1D pull distribution
Mean −0.03151 ± 0.1649
Std Dev 0.3297 ± 0.1166
Underflow 0
Overflow 0
χ² / ndf 1.403e−11 / 0
Constant 3.555 ± 20.083
Mean −0.1238 ± 1.5061
Sigma 0.2451 ± 1.5280
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

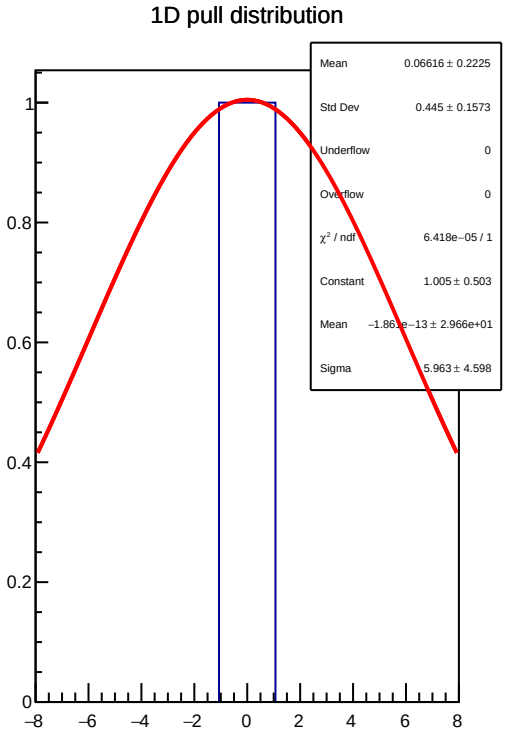

asym_bcm_dg_us RMS (ppm)
RMS (ppm)
145.5
145
144.5
144
143.5
143
142.5
26
27
28
29

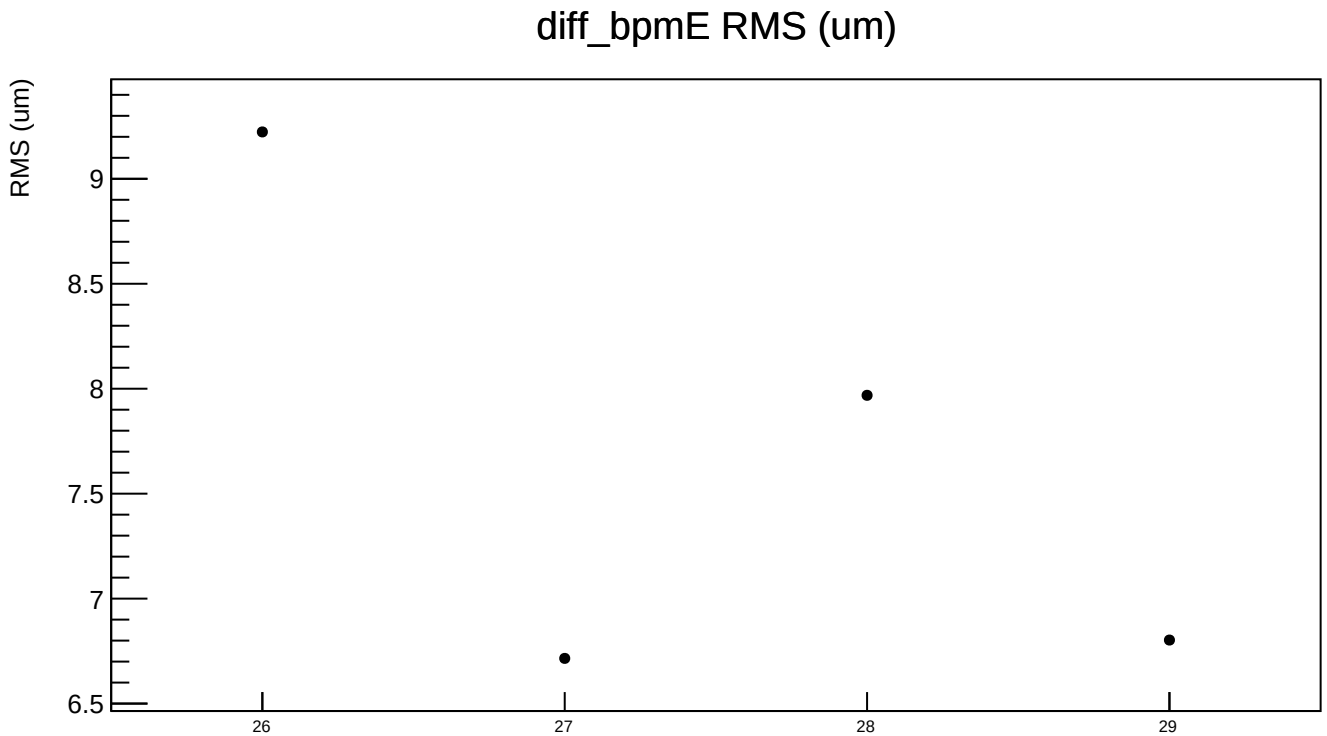

asym_bcm_dg_ds (ppb)
χ² / ndf 0.2703 / 3
p0 8.284 ± 72.36
250
200
150
100
50
0
−50
−100
−150
−200
0.4
0.3
0.2
0.1
0
−0.1
−0.2
26
27
28
29

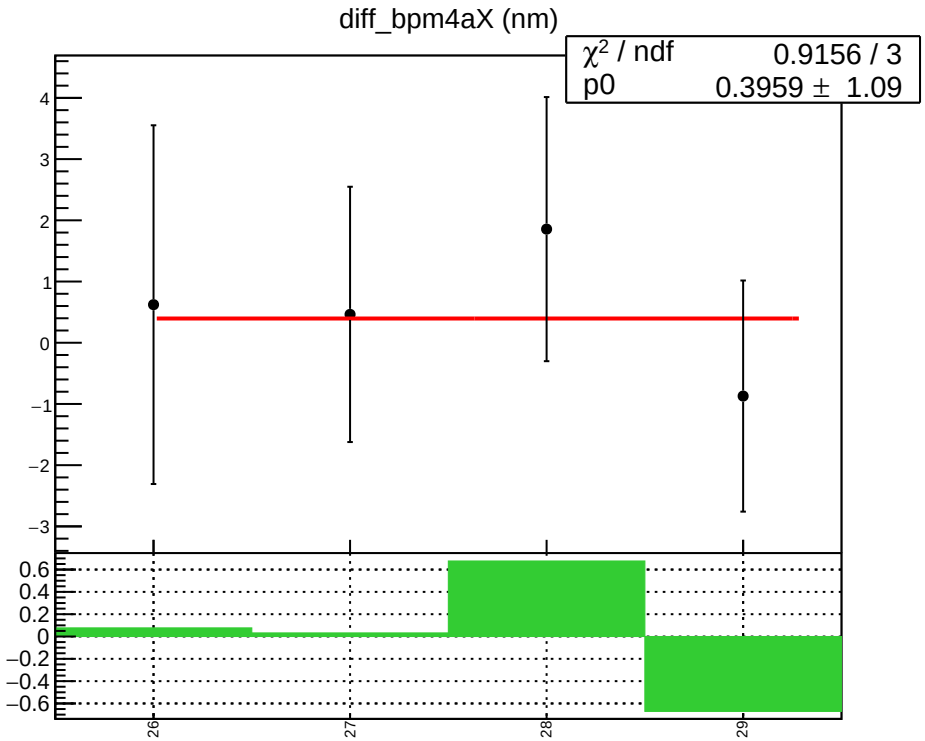

1D pull distribution
Mean −0.002995 ± 0.13
Std Dev 0.2599 ± 0.0919
Underflow 0
Overflow 0
χ² / ndf 1.403e−11 / 0
Constant 3.555 ± 20.083
Mean −0.1238 ± 1.5061
Sigma 0.2451 ± 1.5280
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

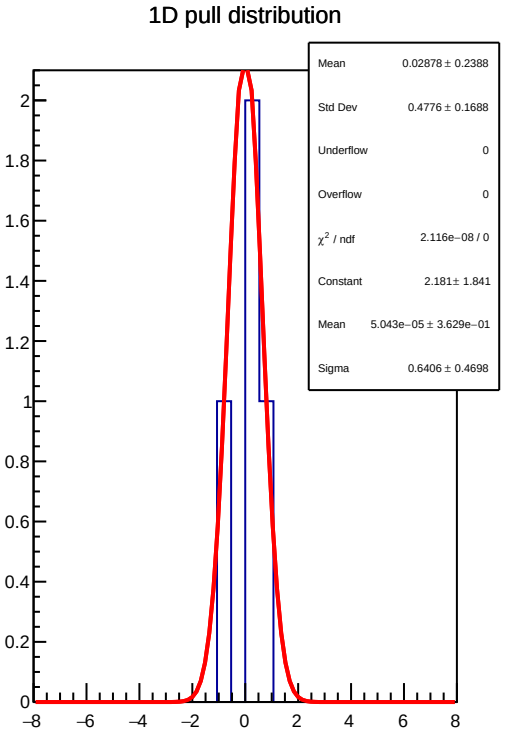

asym_bcm_dg_ds RMS (ppm)
RMS (ppm)
137
136.5
136
135.5
135
134.5
26
27
28
29

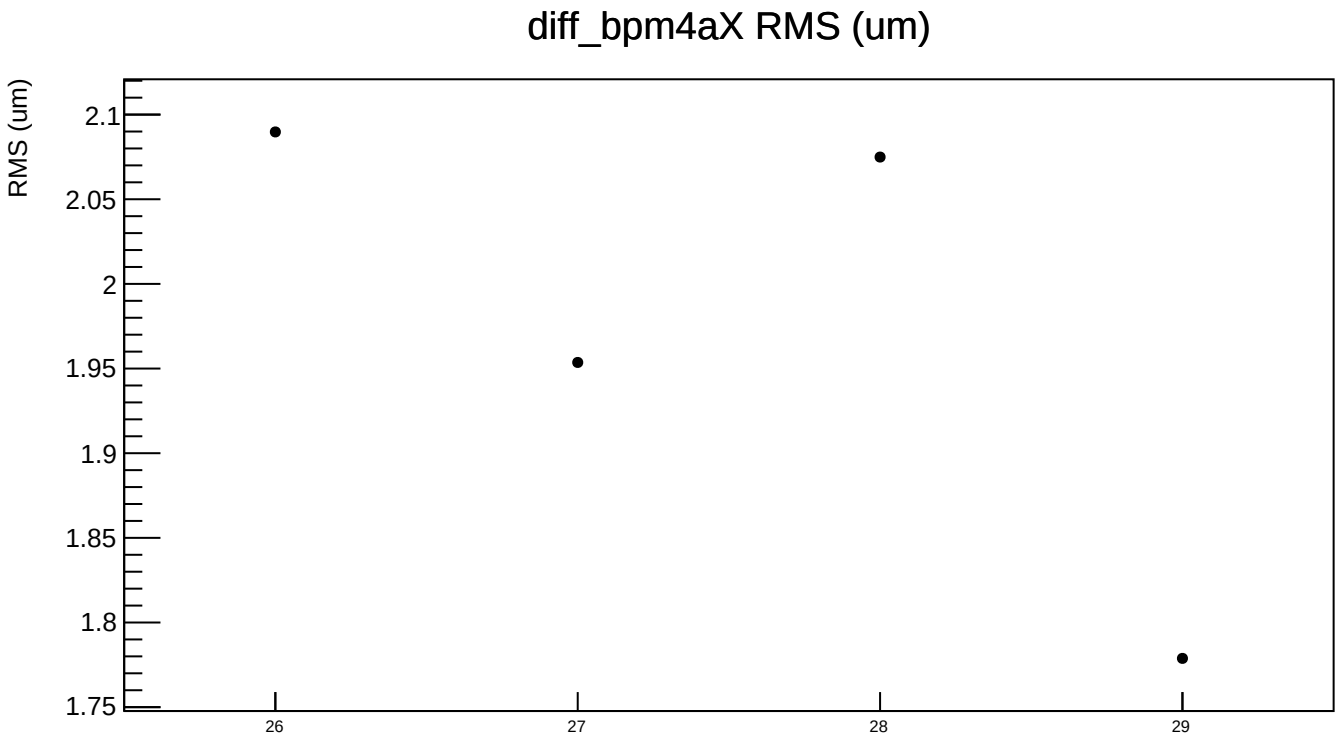

diff_bpmE (nm)
χ² / ndf 0.8098 / 3
p0 −2.663 ± 4.094
20
15
10
5
0
−5
−10
−15
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
26
27
28
29

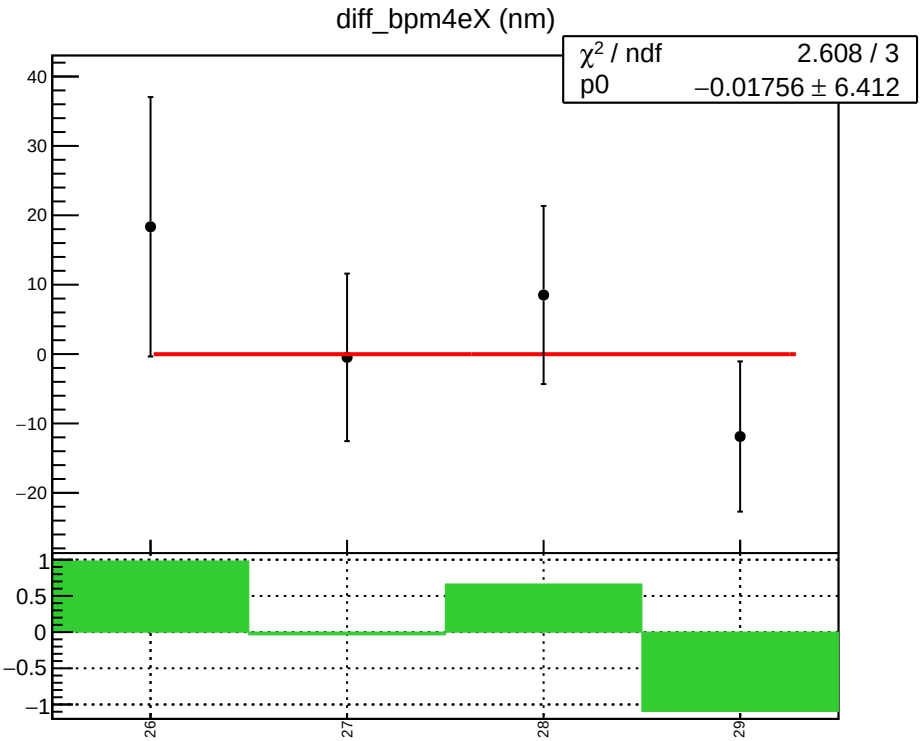

1D pull distribution
Mean 0.06616 ± 0.2225
Std Dev 0.445 ± 0.1573
Underflow 0
Overflow 0
χ² / ndf 6.418e−05 / 1
Constant 1.005 ± 0.503
Mean −1.861e−13 ± 2.966e+01
Sigma 5.963 ± 4.598
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

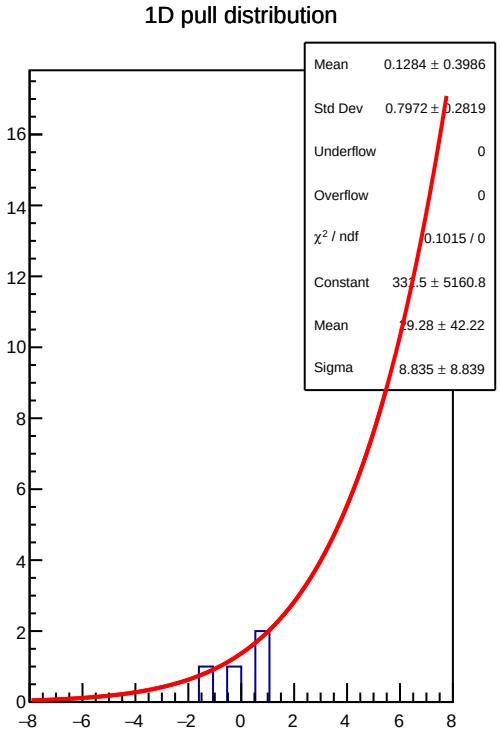

diff_bpmE RMS (um)
RMS (um)
9
8.5
8
7.5
7
6.5
26
27
28
29


diff_bpm4aX (nm)
χ² / ndf 0.9156 / 3
p0 0.3959 ± 1.09
4
3
2
1
0
−1
−2
−3
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
26
27
28
29

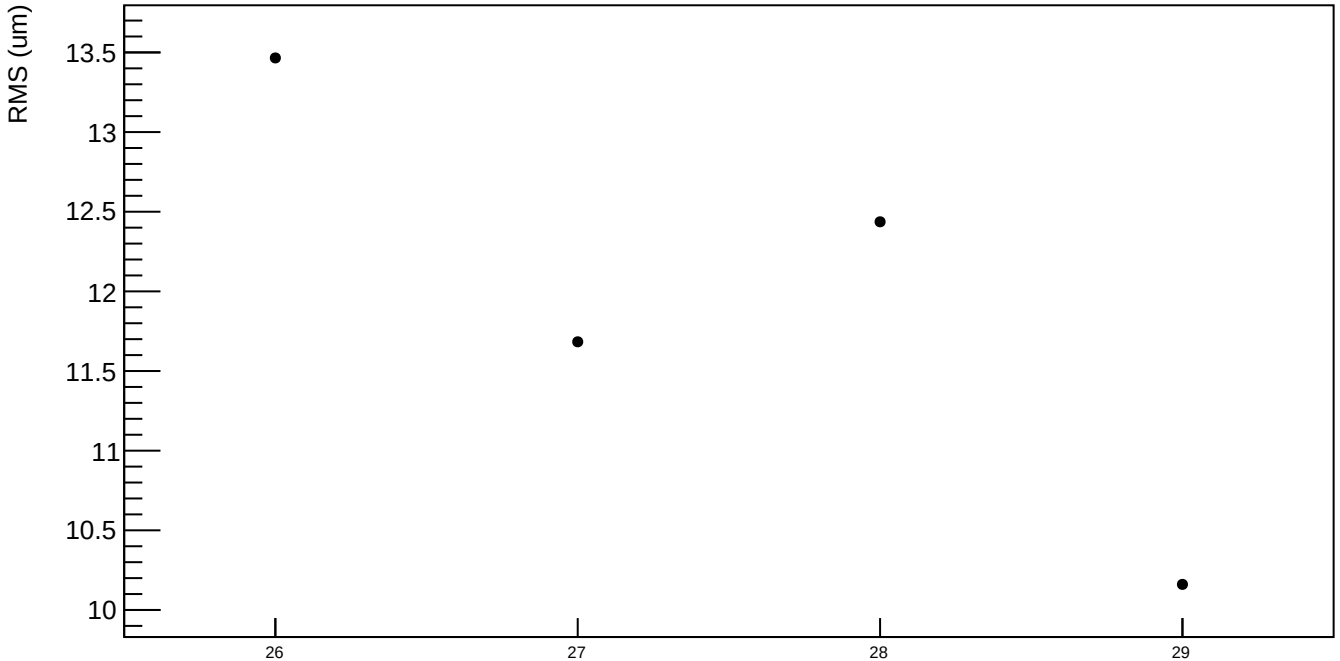

1D pull distribution
Mean 0.02878 ± 0.2388
Std Dev 0.4776 ± 0.1688
Underflow 0
Overflow 0
χ² / ndf 2.116e−08 / 0
Constant 2.181 ± 1.841
Mean 5.043e−05 ± 3.629e−01
Sigma 0.6406 ± 0.4698
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

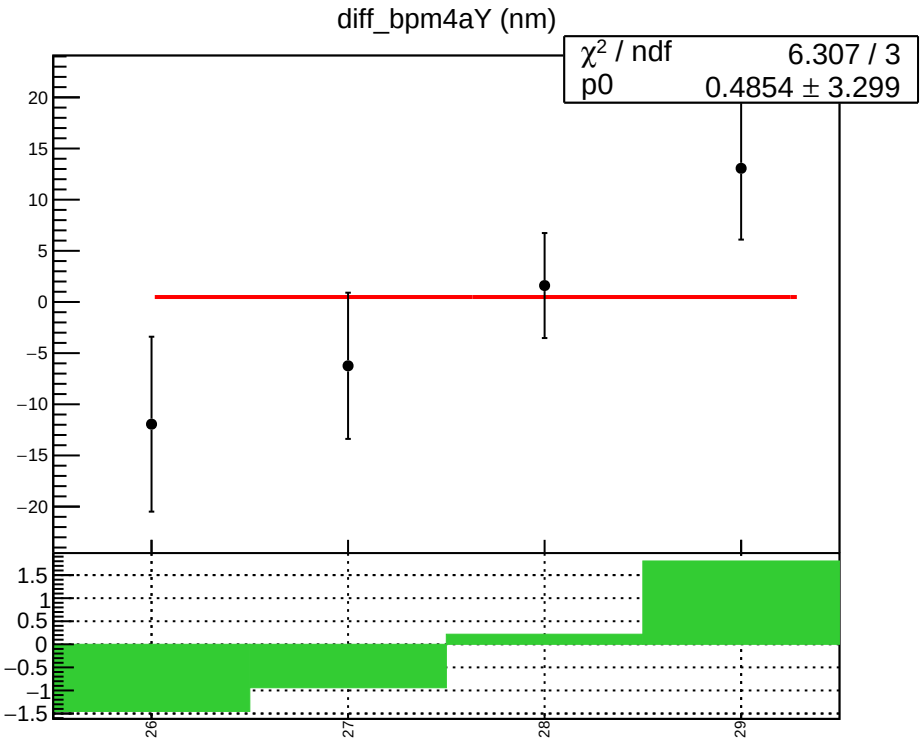

diff_bpm4aX RMS (um)
RMS (um)
2.1
2.05
2
1.95
1.9
1.85
1.8
1.75
26
27
28
29

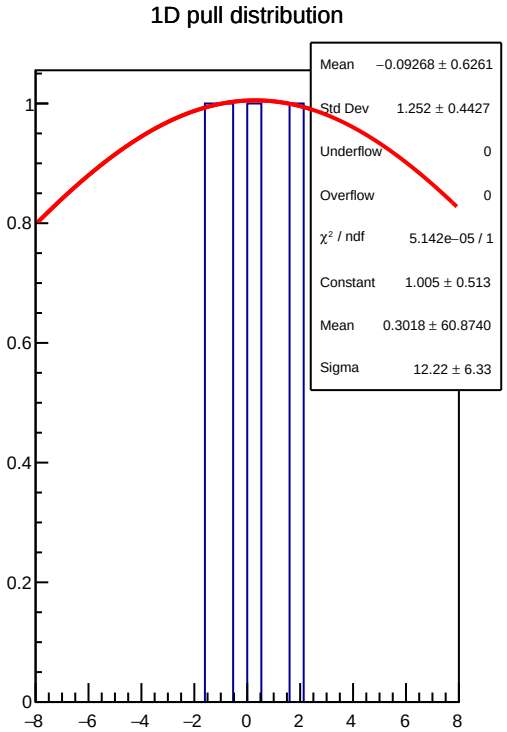

diff_bpm4eX (nm)
χ^2 / ndf 2.608 / 3
p0 −0.01756 ± 6.412
40
30
20
10
0
−10
−20
1
0.5
0
−0.5
−1
26
27
28
29

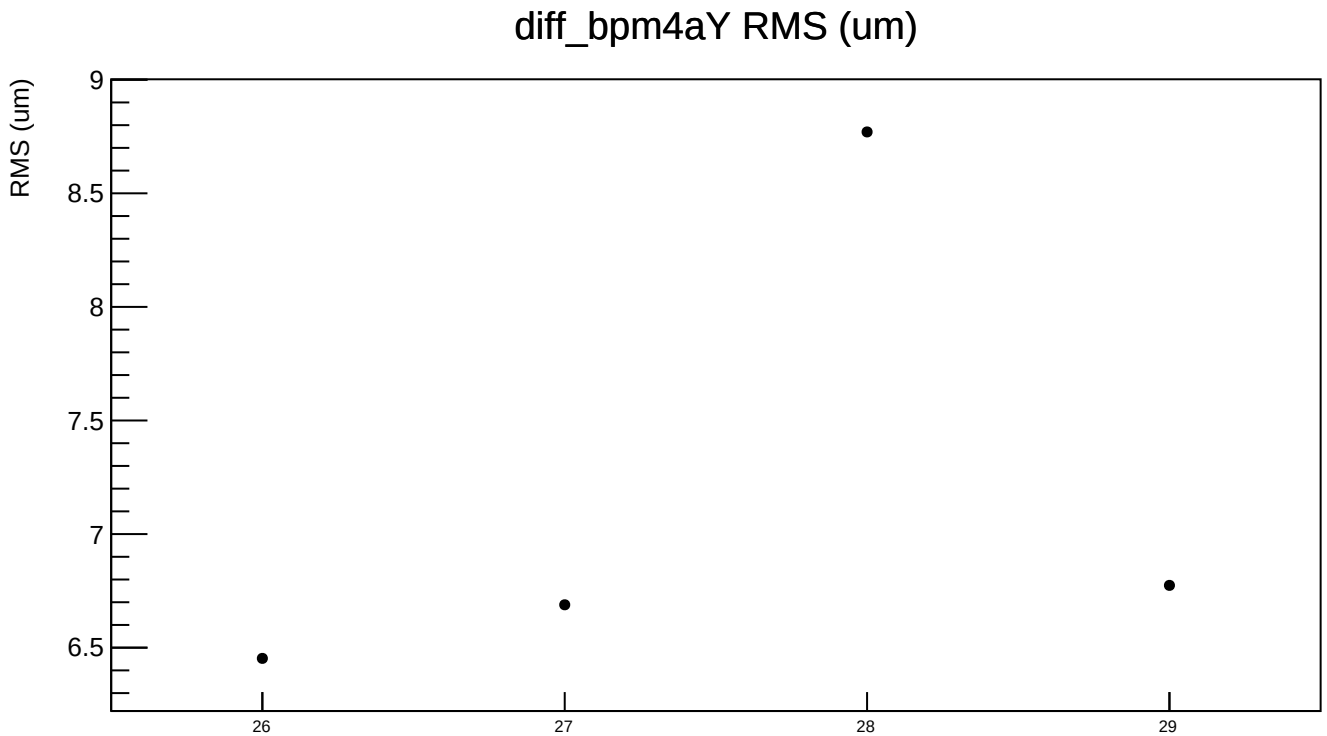

1D pull distribution
Mean 0.1284 ± 0.3986
Std Dev 0.7972 ± 0.2819
Underflow 0
Overflow 0
χ^2 / ndf 0.1015 / 0
Constant 331.5 ± 5160.8
Mean 29.28 ± 42.22
Sigma 8.835 ± 8.839
16
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

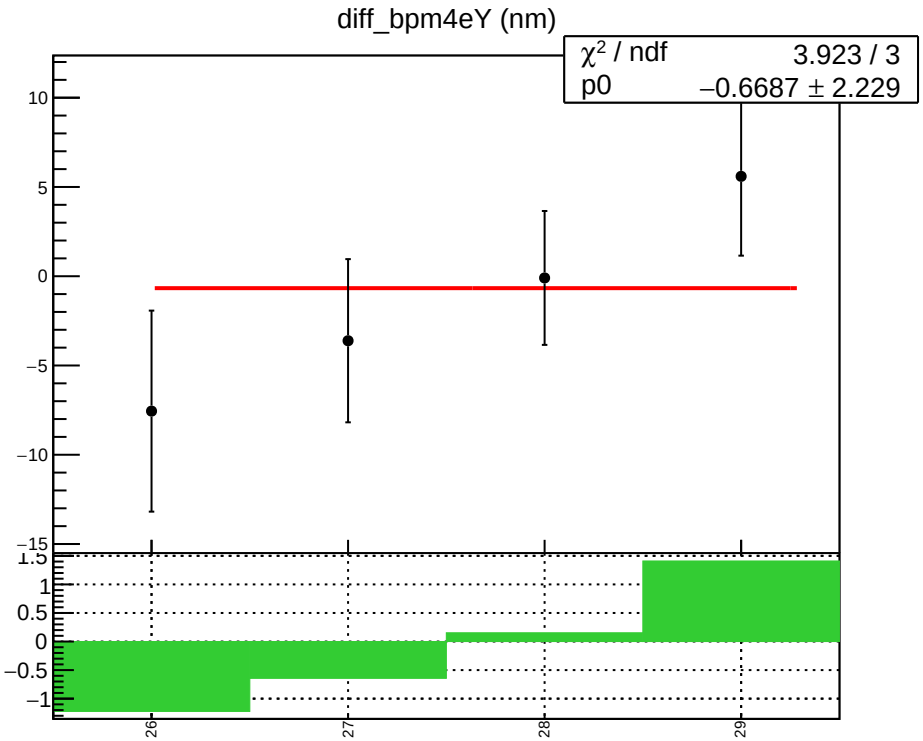
diff_bpm4eX RMS (um)

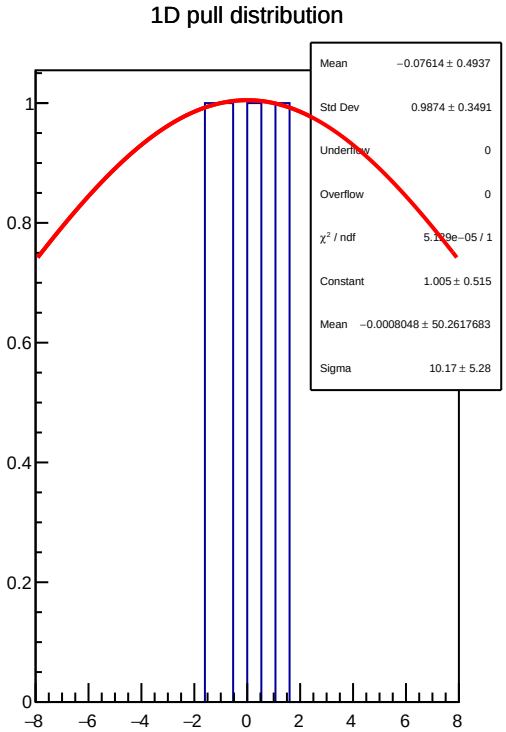


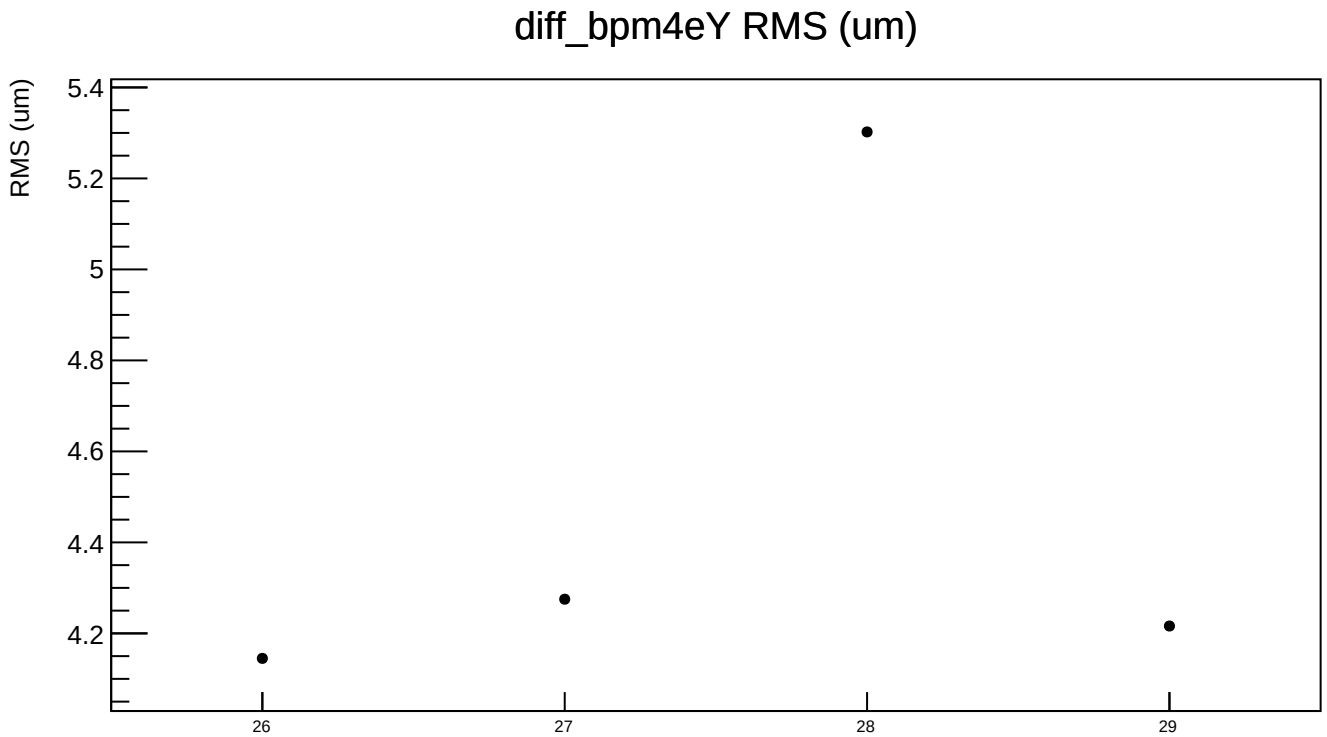

diff_bpm4aY (nm)
χ² / ndf 6.307 / 3
p0 0.4854 ± 3.299
20
15
10
5
0
−5
−10
−15
−20
1.5
1
0.5
0
−0.5
−1
−1.5
26
27
28
29

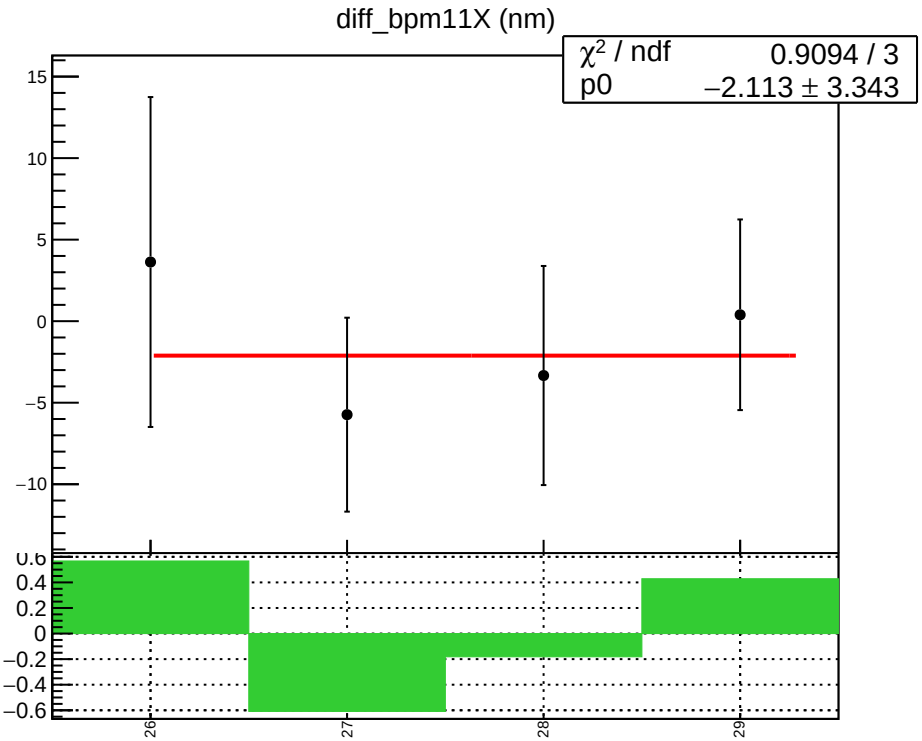

1D pull distribution
Mean −0.09268 ± 0.6261
Std Dev 1.252 ± 0.4427
Underflow 0
Overflow 0
χ² / ndf 5.142e−05 / 1
Constant 1.005 ± 0.513
Mean 0.3018 ± 60.8740
Sigma 12.22 ± 6.33
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

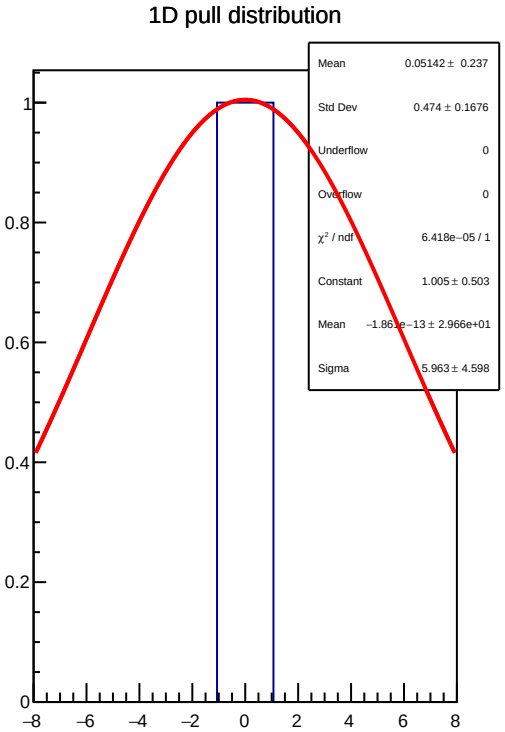

diff_bpm4aY RMS (um)
RMS (um)
9
8.5
8
7.5
7
6.5
26
27
28
29


diff_bpm4eY (nm)
χ² / ndf 3.923 / 3
p0 −0.6687 ± 2.229
10
5
0
−5
−10
−15
1.5
1
0.5
0
−0.5
−1
26
27
28
29

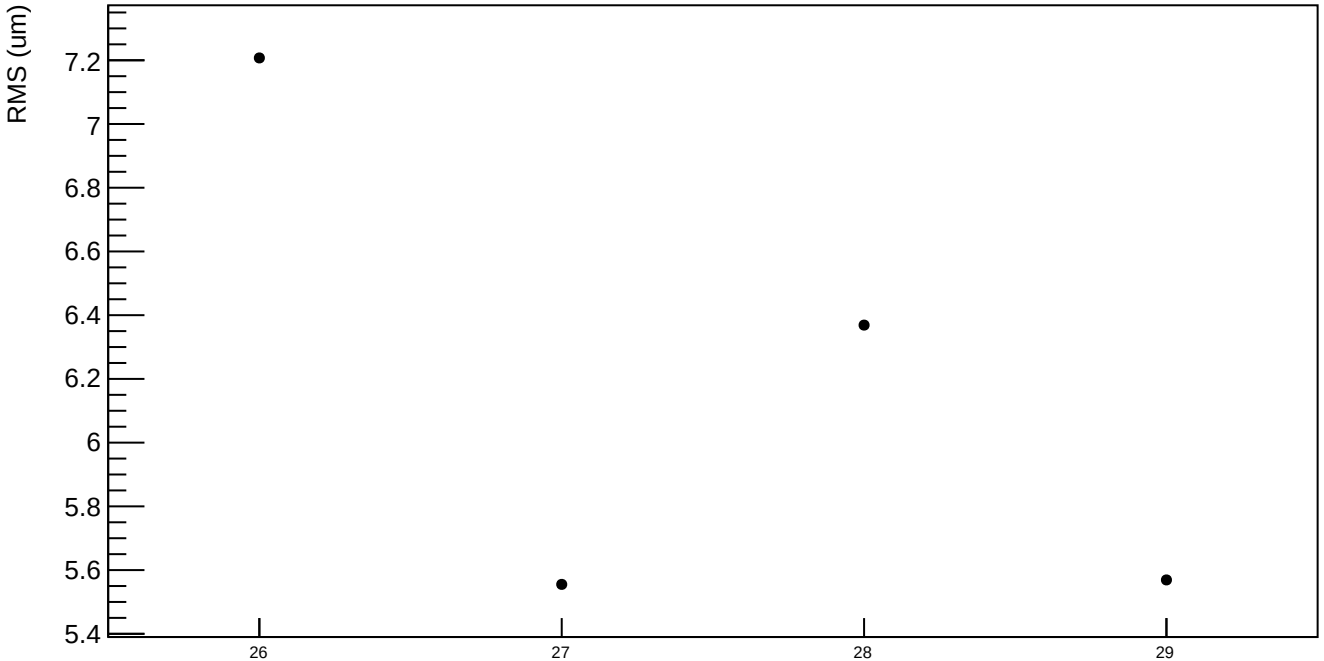

1D pull distribution
Mean −0.07614 ± 0.4937
Std Dev 0.9874 ± 0.3491
Underflow 0
Overflow 0
χ² / ndf 5.179e−05 / 1
Constant 1.005 ± 0.515
Mean −0.0008048 ± 50.2617683
Sigma 10.17 ± 5.28
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

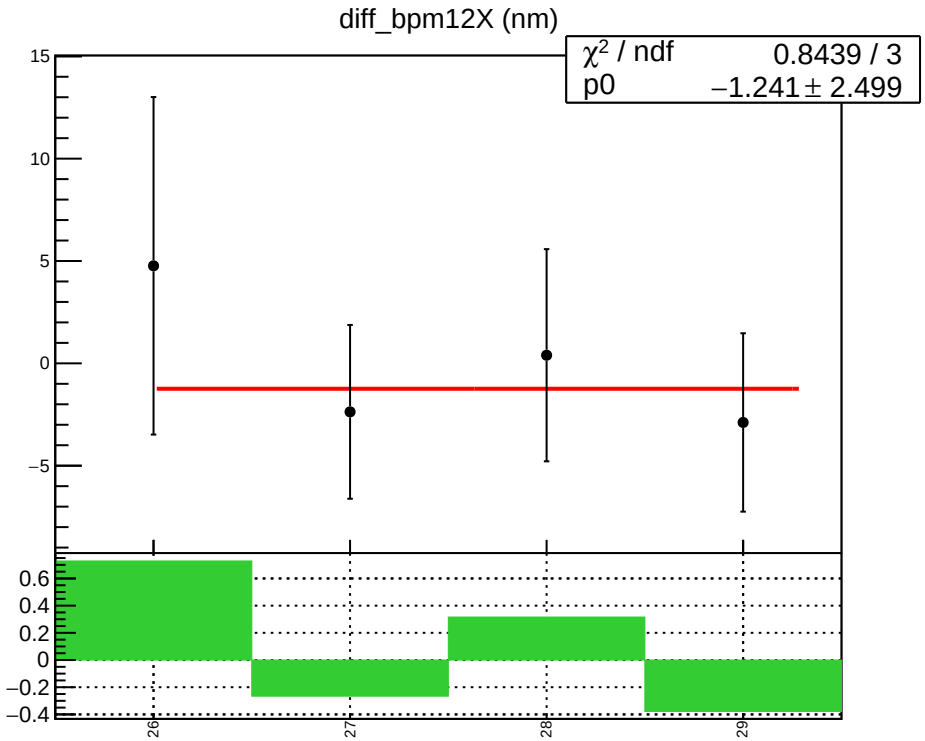

diff_bpm4eY RMS (um)
RMS (um)
5.4
5.2
5
4.8
4.6
4.4
4.2
26
27
28
29

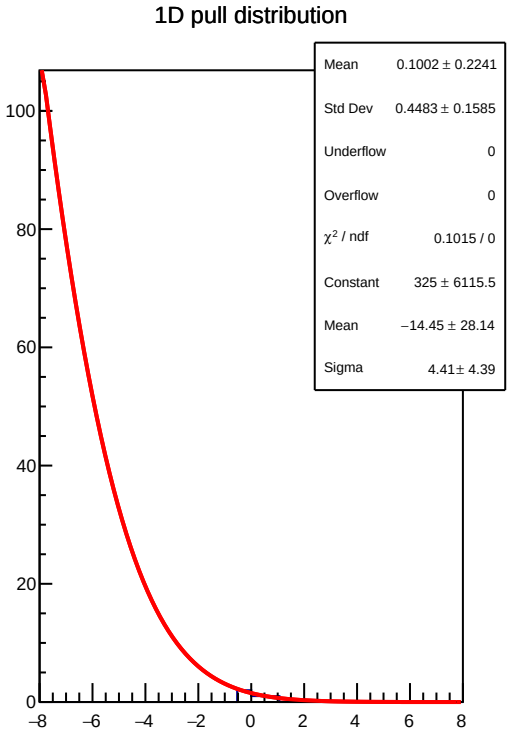

diff_bpm11X (nm)
χ² / ndf 0.9094 / 3
p0 −2.113 ± 3.343
15
10
5
0
−5
−10
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
26
27
28
29

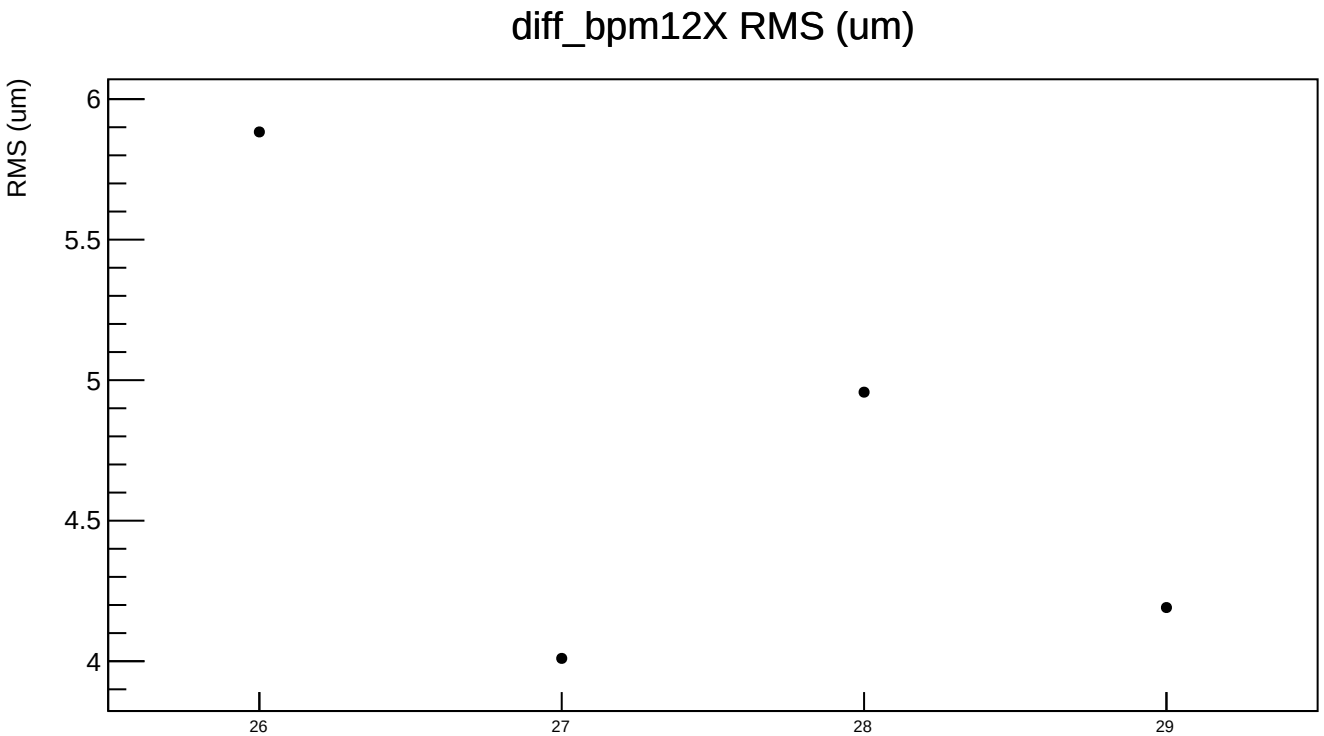

1D pull distribution
Mean 0.05142 ± 0.237
Std Dev 0.474 ± 0.1676
Underflow 0
Overflow 0
χ² / ndf 6.418e−05 / 1
Constant 1.005 ± 0.503
Mean −1.861e−13 ± 2.966e+01
Sigma 5.963 ± 4.598
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

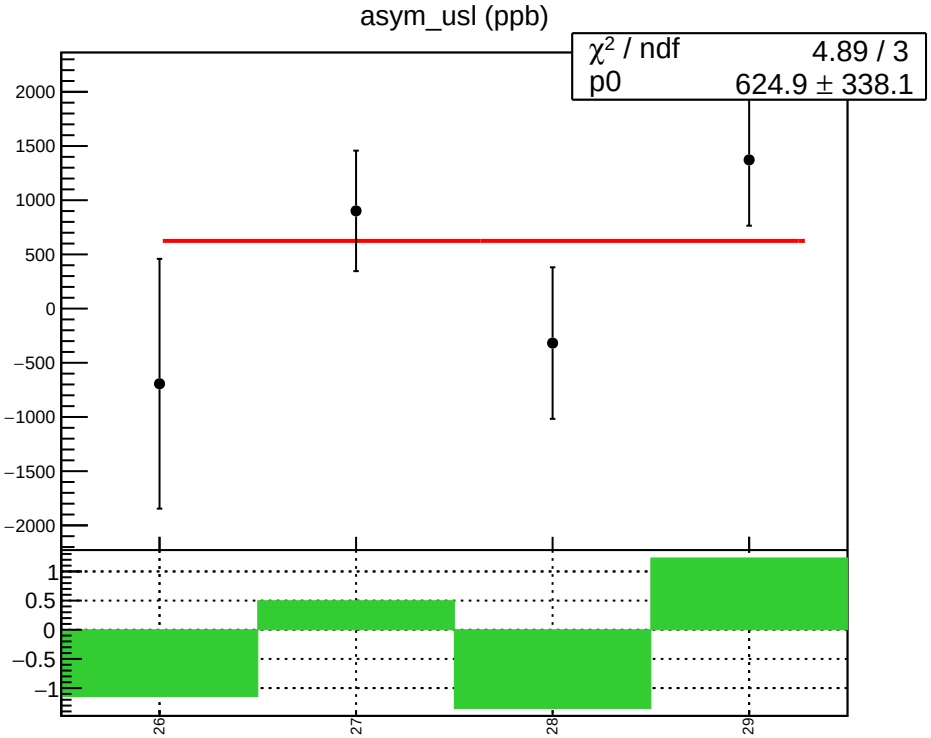
diff_bpm11X RMS (um)

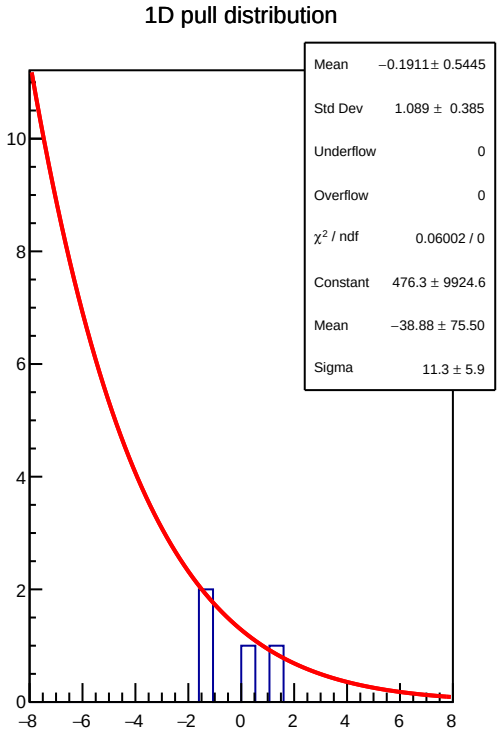



diff_bpm12X (nm)
χ² / ndf 0.8439 / 3
p0 −1.241 ± 2.499
15
10
5
0
−5
0.6
0.4
0.2
0
−0.2
−0.4
26
27
28
29

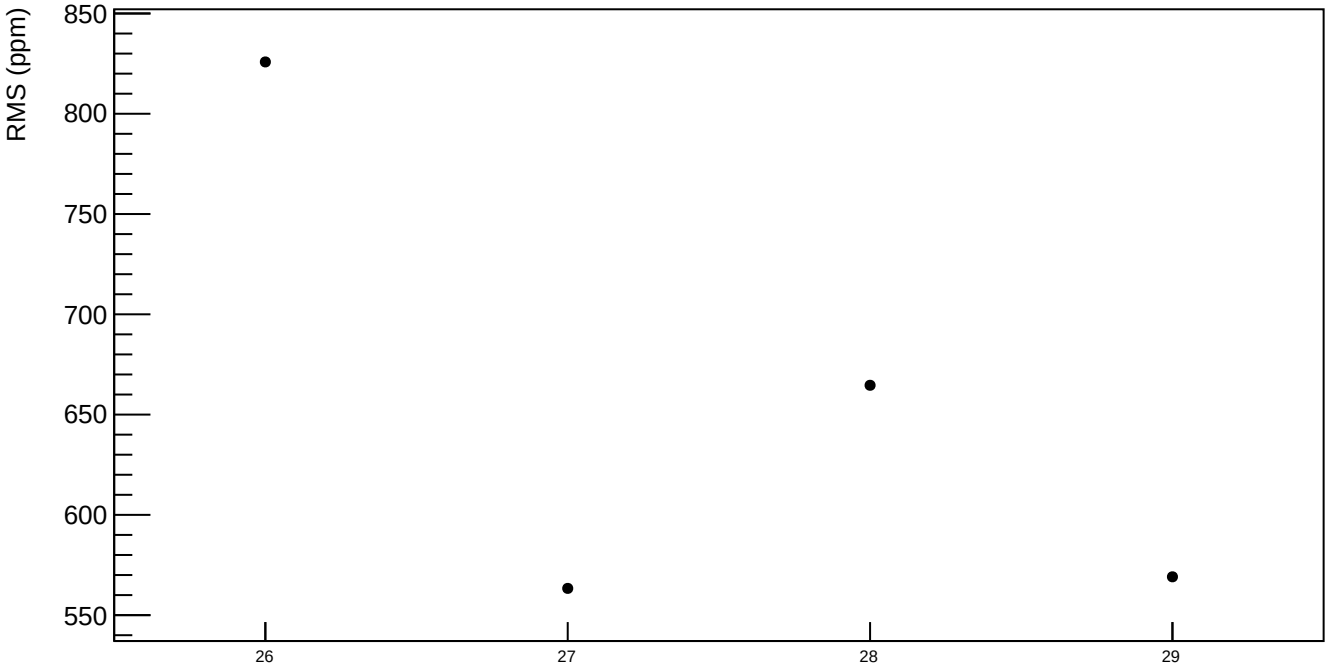

1D pull distribution
Mean 0.1002 ± 0.2241
Std Dev 0.4483 ± 0.1585
Underflow 0
Overflow 0
χ² / ndf 0.1015 / 0
Constant 325 ± 6115.5
Mean −14.45 ± 28.14
Sigma 4.41± 4.39
100
80
60
40
20
0
−8
−6
−4
−2
0
2
4
6
8

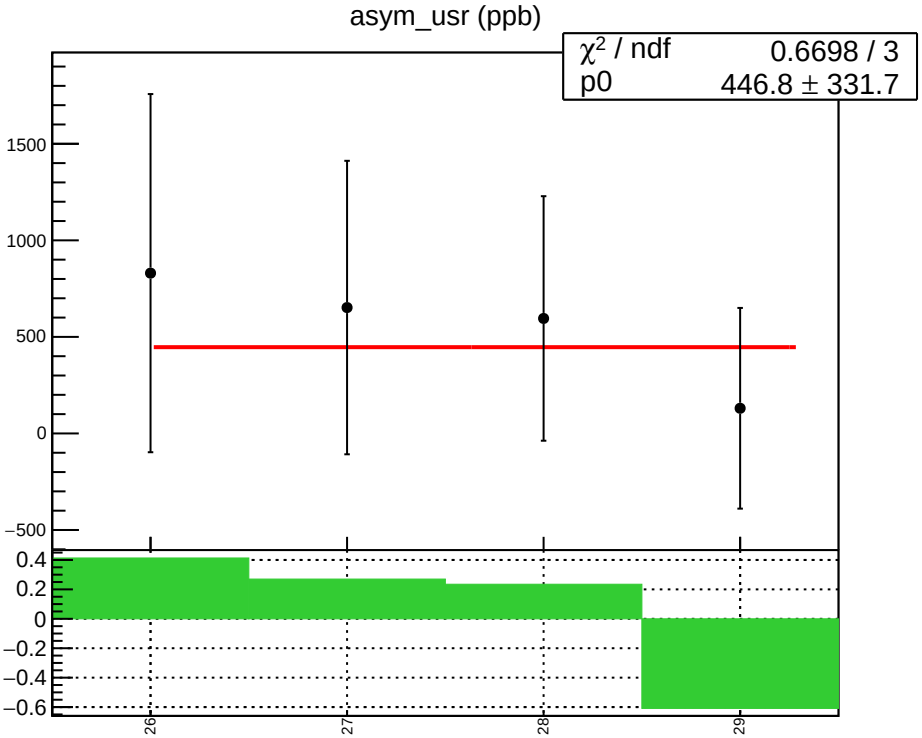

diff_bpm12X RMS (um)
RMS (um)
6
5.5
5
4.5
4
26
27
28
29

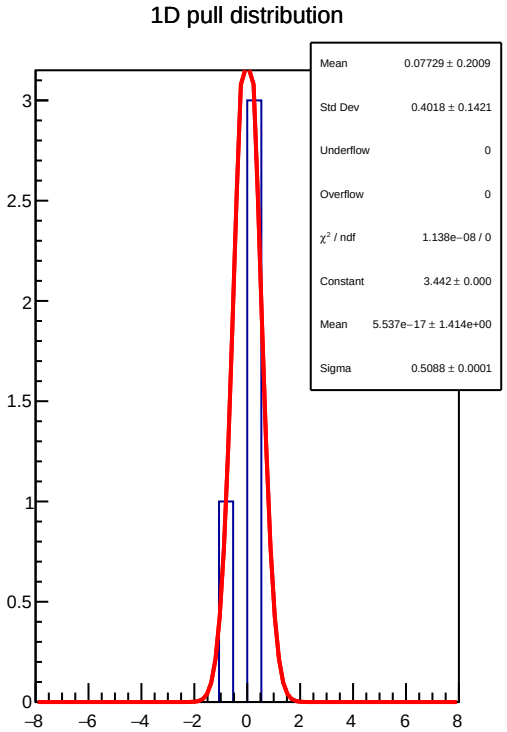

asym_usl (ppb)
χ² / ndf 4.89 / 3
p0 624.9 ± 338.1
2000
1500
1000
500
0
−500
−1000
−1500
−2000
1
0.5
0
−0.5
−1
26
27
28
29

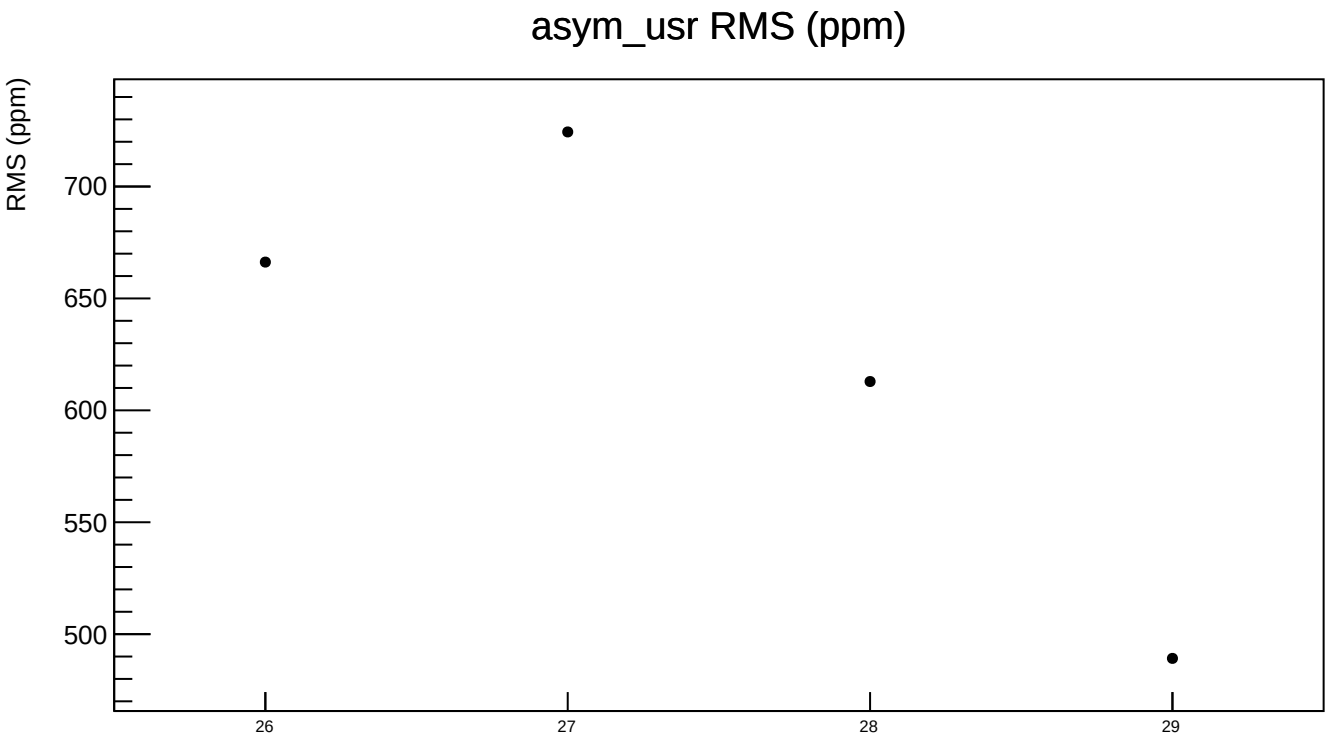

1D pull distribution
Mean −0.1911 ± 0.5445
Std Dev 1.089 ± 0.385
Underflow 0
Overflow 0
χ² / ndf 0.06002 / 0
Constant 476.3 ± 9924.6
Mean −38.88 ± 75.50
Sigma 11.3 ± 5.9
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

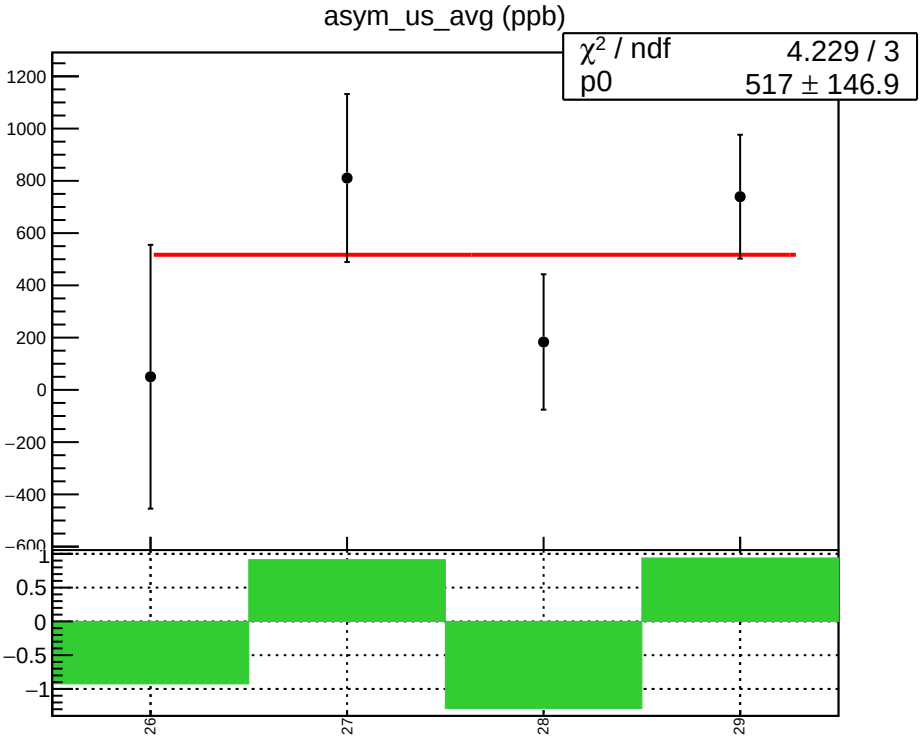
asym_usl RMS (ppm)

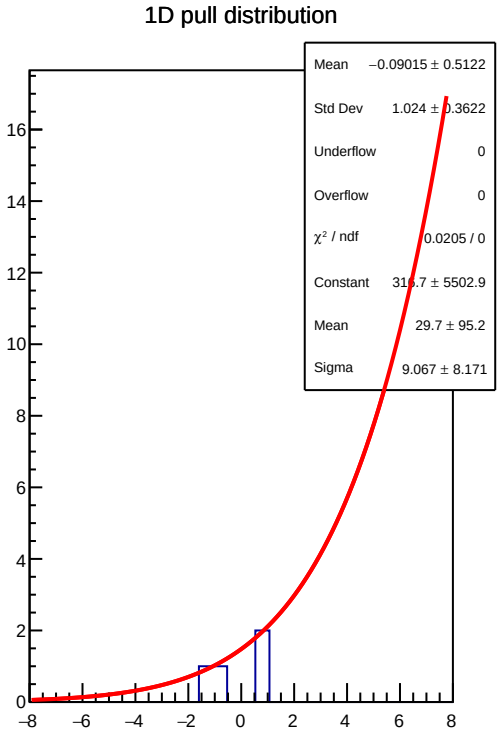


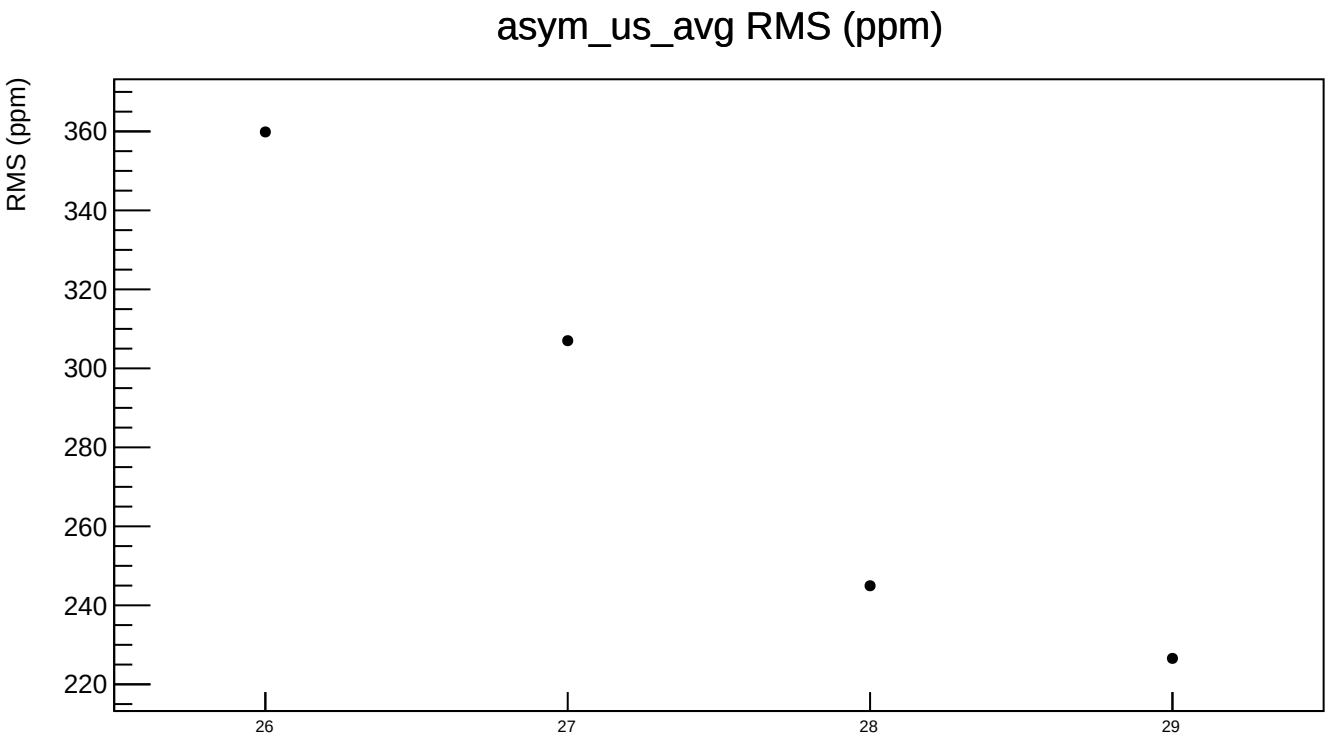

asym_usr (ppb)
χ² / ndf 0.6698 / 3
p0 446.8 ± 331.7
1500
1000
500
0
−500
0.4
0.2
0
−0.2
−0.4
−0.6
26
27
28
29

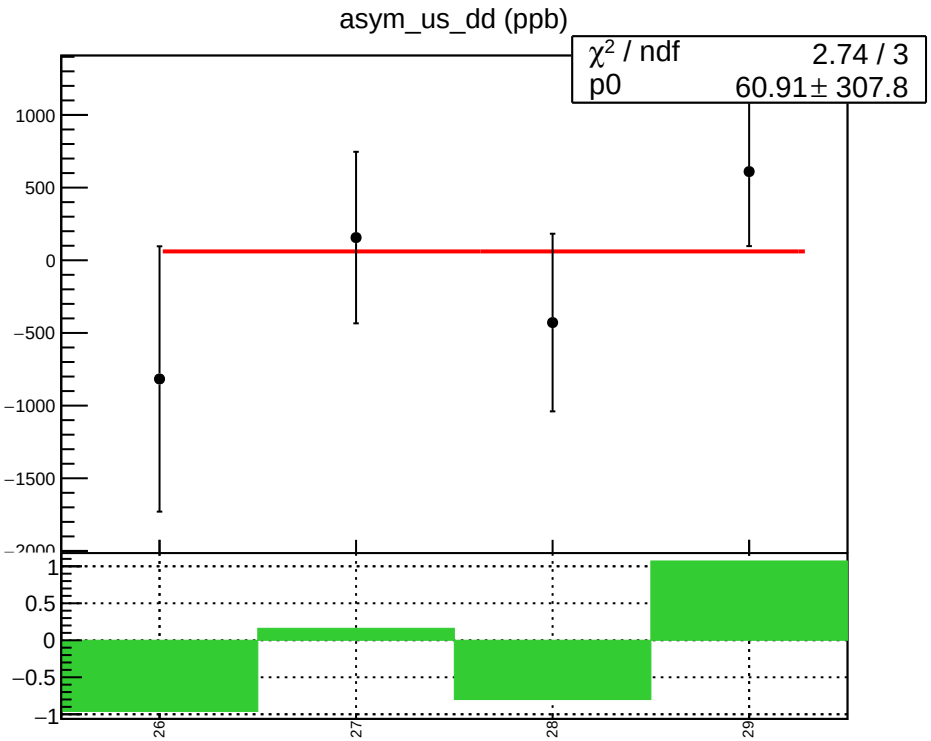

1D pull distribution
Mean 0.07729 ± 0.2009
Std Dev 0.4018 ± 0.1421
Underflow 0
Overflow 0
χ² / ndf 1.138e−08 / 0
Constant 3.442 ± 0.000
Mean 5.537e−17 ± 1.414e+00
Sigma 0.5088 ± 0.0001
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

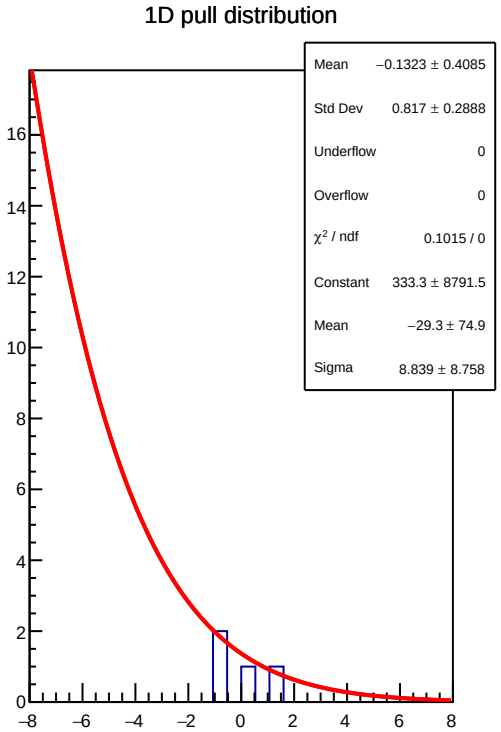

asym_usr RMS (ppm)
RMS (ppm)
700
650
600
550
500
26
27
28
29

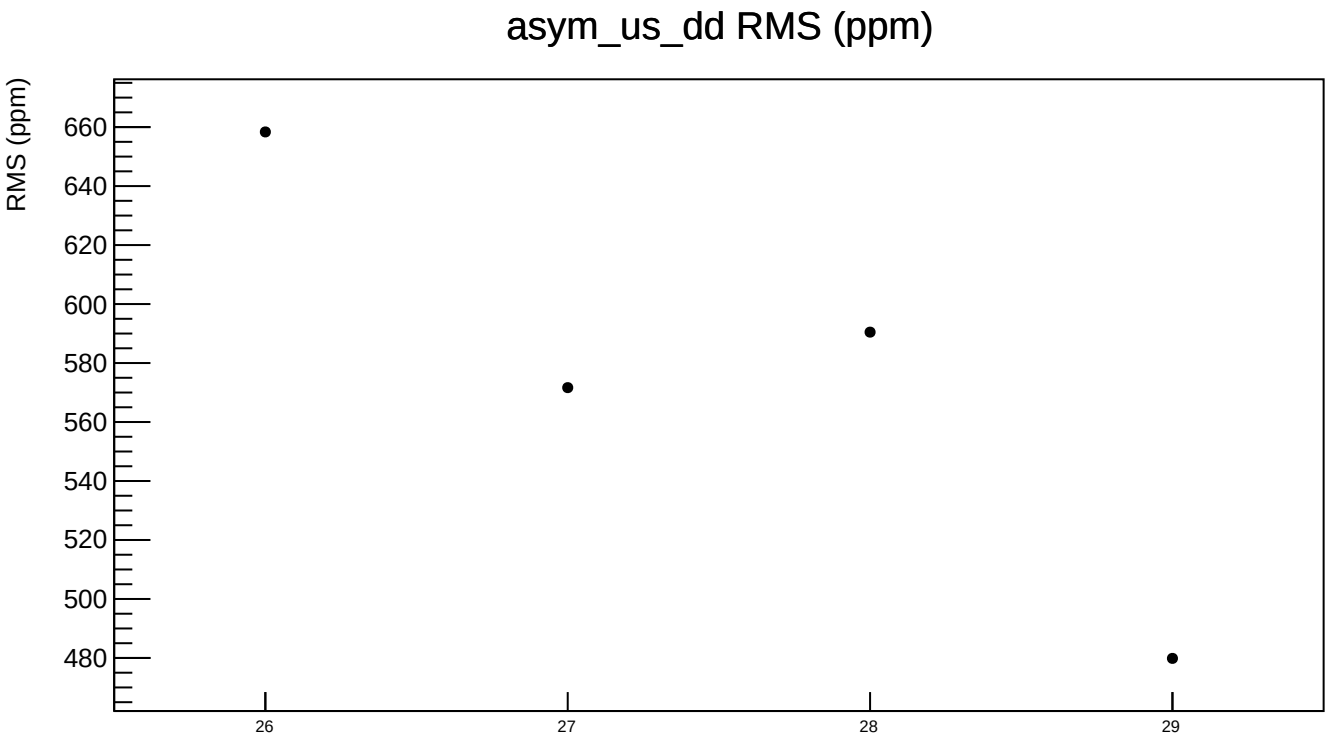

asym_us_avg (ppb)
χ² / ndf 4.229 / 3
p0 517 ± 146.9
1200
1000
800
600
400
200
0
−200
−400
−600
1
0.5
0
−0.5
−1
26
27
28
29

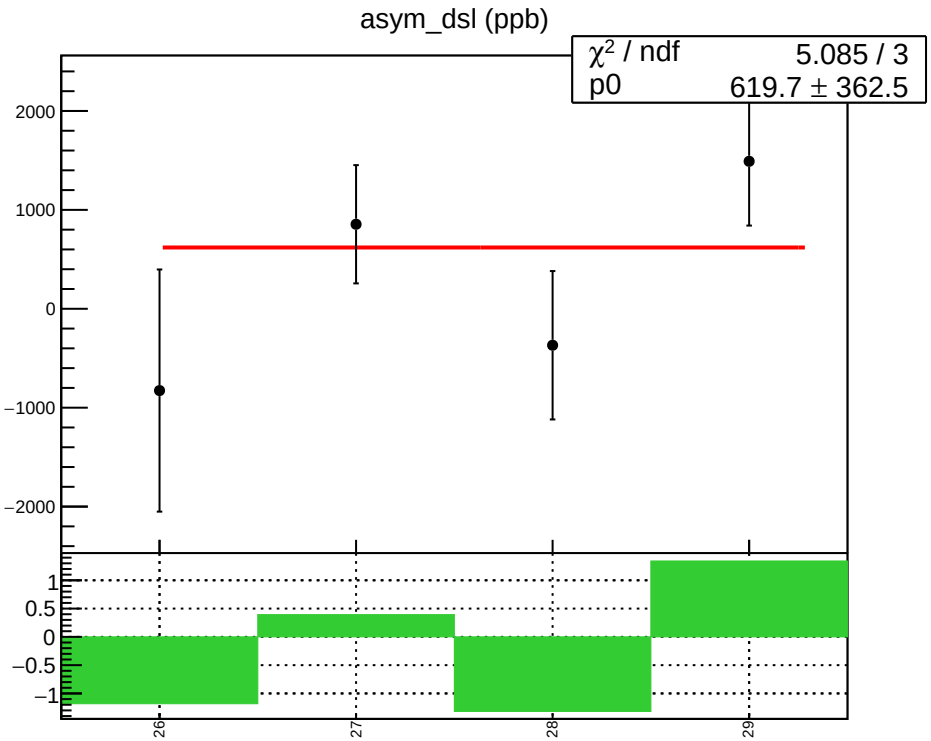

1D pull distribution
Mean −0.09015 ± 0.5122
Std Dev 1.024 ± 0.3622
Underflow 0
Overflow 0
χ² / ndf 0.0205 / 0
Constant 316.7 ± 5502.9
Mean 29.7 ± 95.2
Sigma 9.067 ± 8.171
16
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

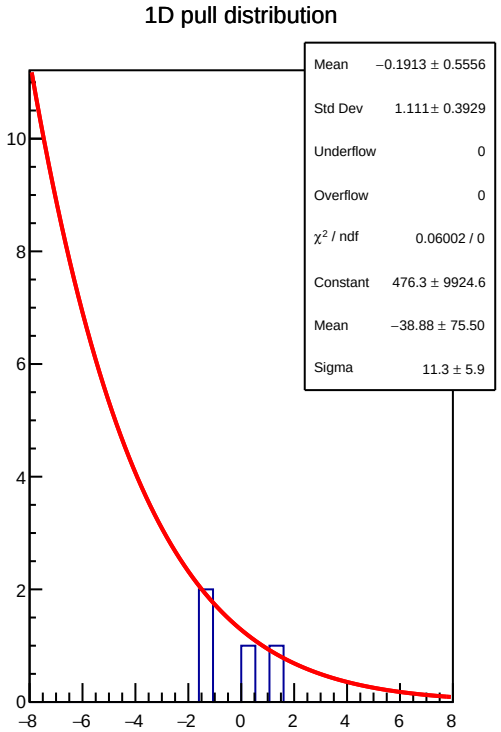

asym_us_avg RMS (ppm)
RMS (ppm)
360
340
320
300
280
260
240
220
26
27
28
29


asym_us_dd (ppb)
χ² / ndf 2.74 / 3
p0 60.91 ± 307.8
1000
500
0
−500
−1000
−1500
−2000
1
0.5
0
−0.5
−1
26
27
28
29

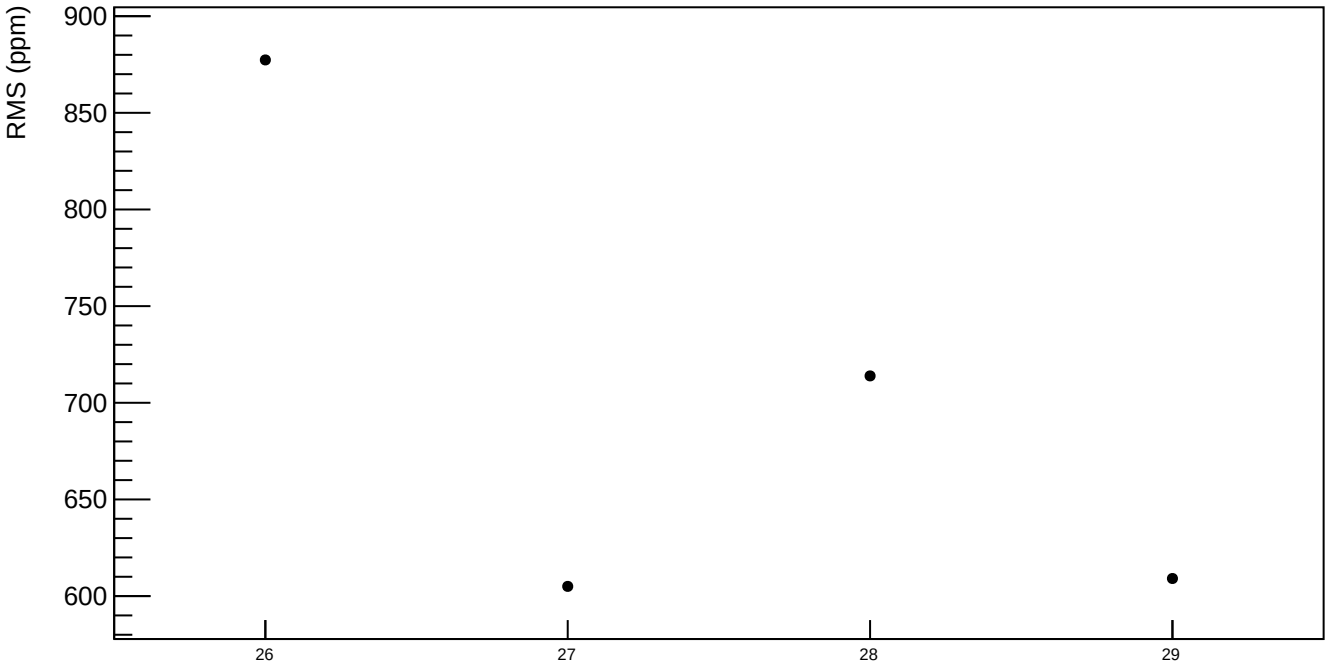

1D pull distribution
Mean −0.1323 ± 0.4085
Std Dev 0.817 ± 0.2888
Underflow 0
Overflow 0
χ² / ndf 0.1015 / 0
Constant 333.3 ± 8791.5
Mean −29.3 ± 74.9
Sigma 8.839 ± 8.758
16
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

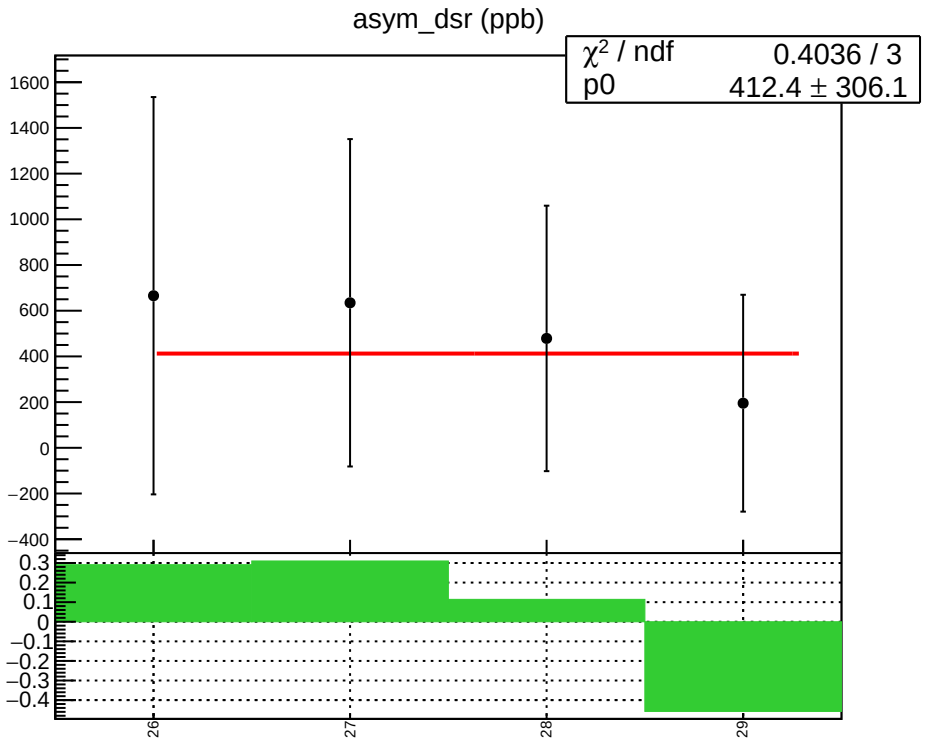

asym_us_dd RMS (ppm)
RMS (ppm)
660
640
620
600
580
560
540
520
500
480
26
27
28
29

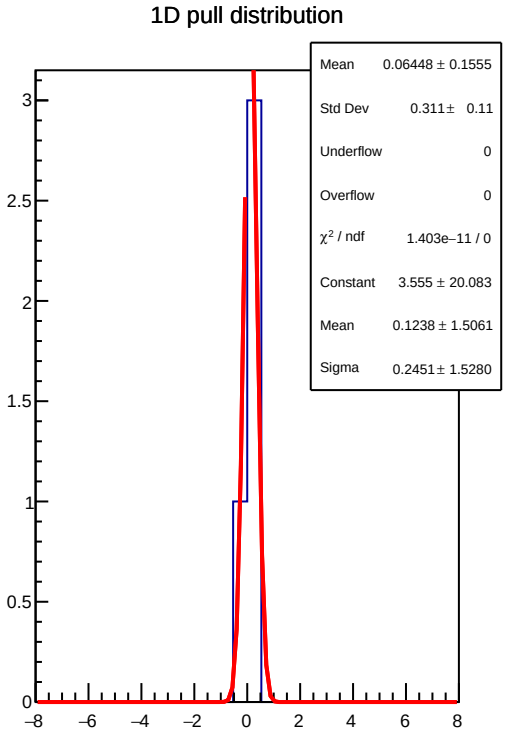

asym_dsl (ppb)
χ² / ndf 5.085 / 3
p0 619.7 ± 362.5
2000
1000
0
−1000
−2000
1
0.5
0
−0.5
−1
26
27
28
29


1D pull distribution
Mean −0.1913 ± 0.5556
Std Dev 1.111± 0.3929
Underflow 0
Overflow 0
χ² / ndf 0.06002 / 0
Constant 476.3 ± 9924.6
Mean −38.88 ± 75.50
Sigma 11.3 ± 5.9
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

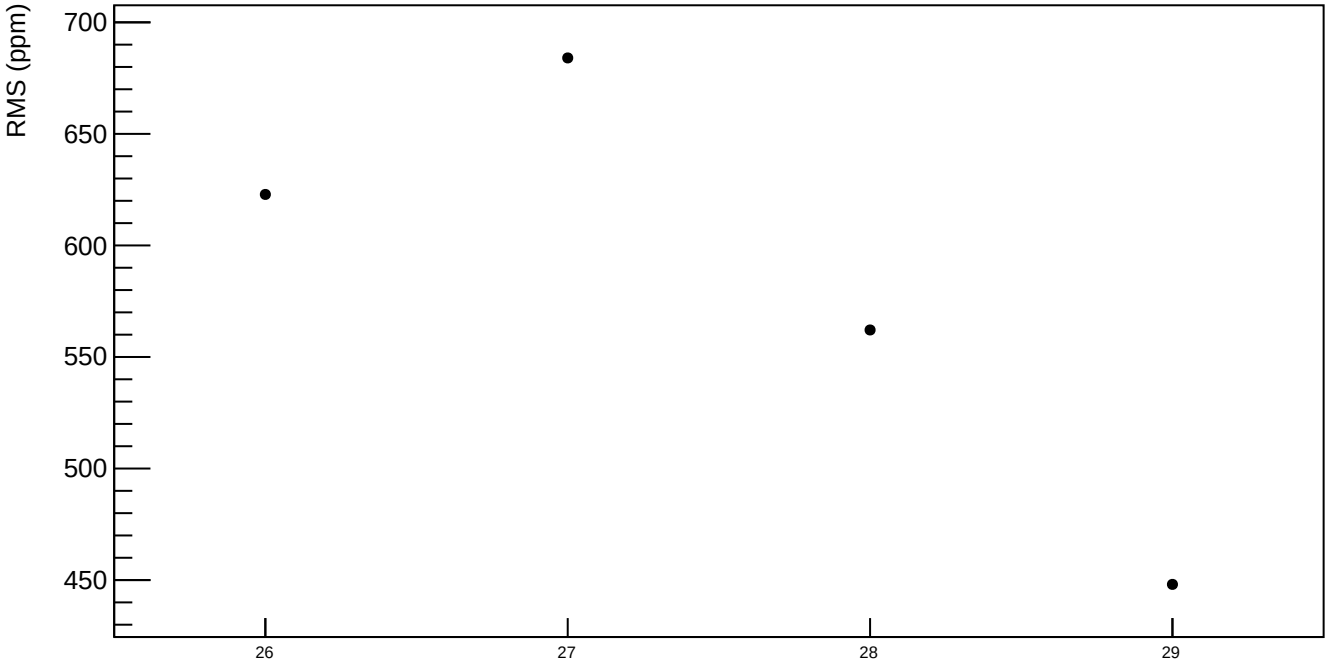
asym_dsl RMS (ppm)

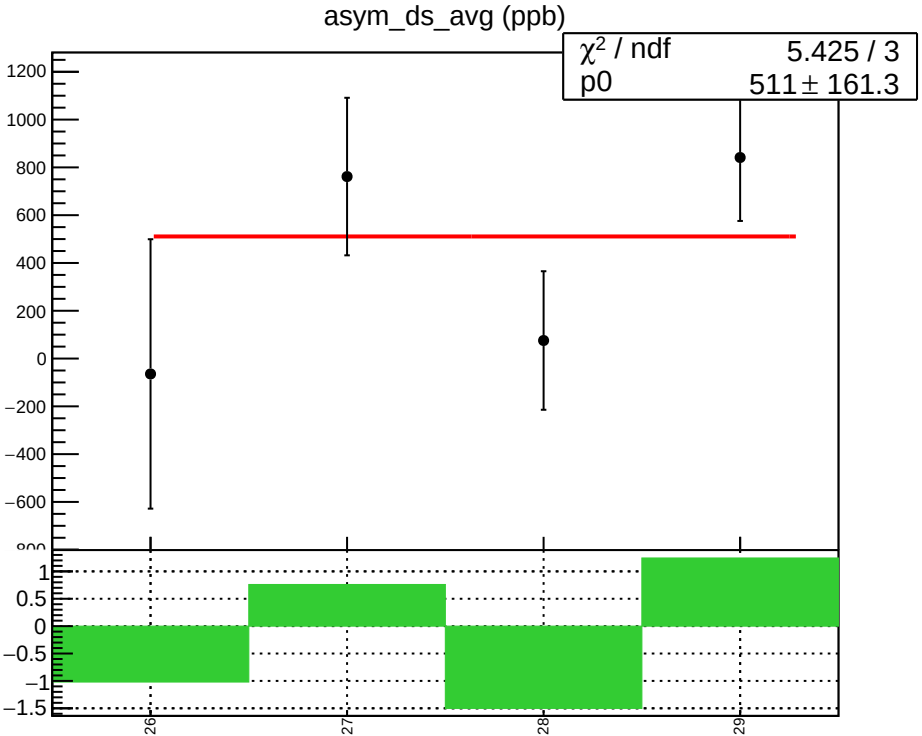


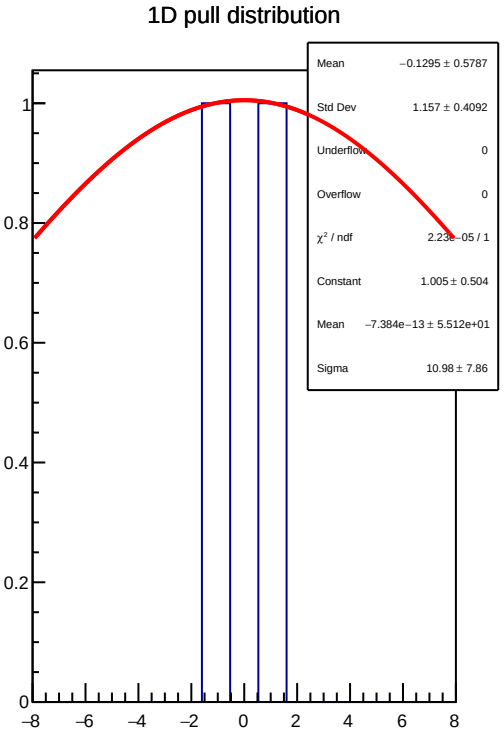

asym_dsr (ppb)
χ² / ndf 0.4036 / 3
p0 412.4 ± 306.1
1600
1400
1200
1000
800
600
400
200
0
−200
−400
0.3
0.2
0.1
0
−0.1
−0.2
−0.3
−0.4
26
27
28
29

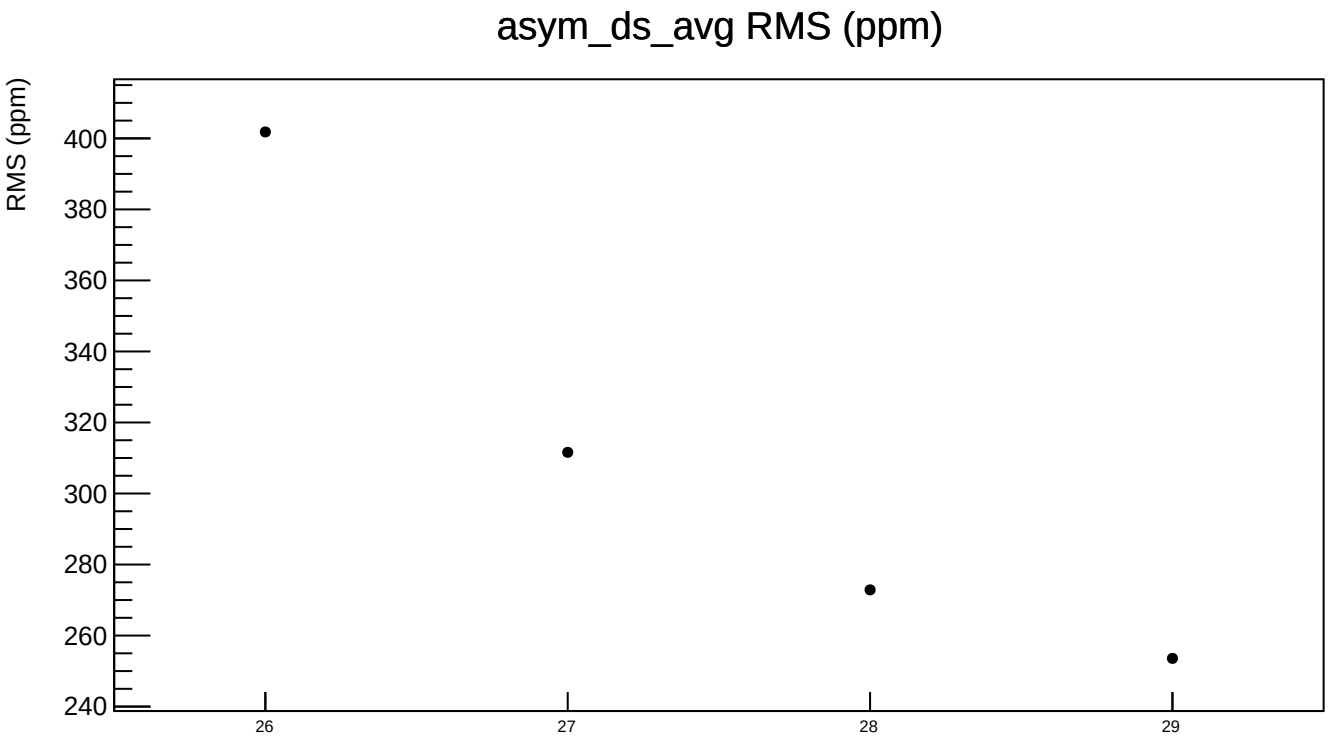

1D pull distribution
Mean 0.06448 ± 0.1555
Std Dev 0.311± 0.11
Underflow 0
Overflow 0
χ² / ndf 1.403e−11 / 0
Constant 3.555 ± 20.083
Mean 0.1238 ± 1.5061
Sigma 0.2451± 1.5280
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

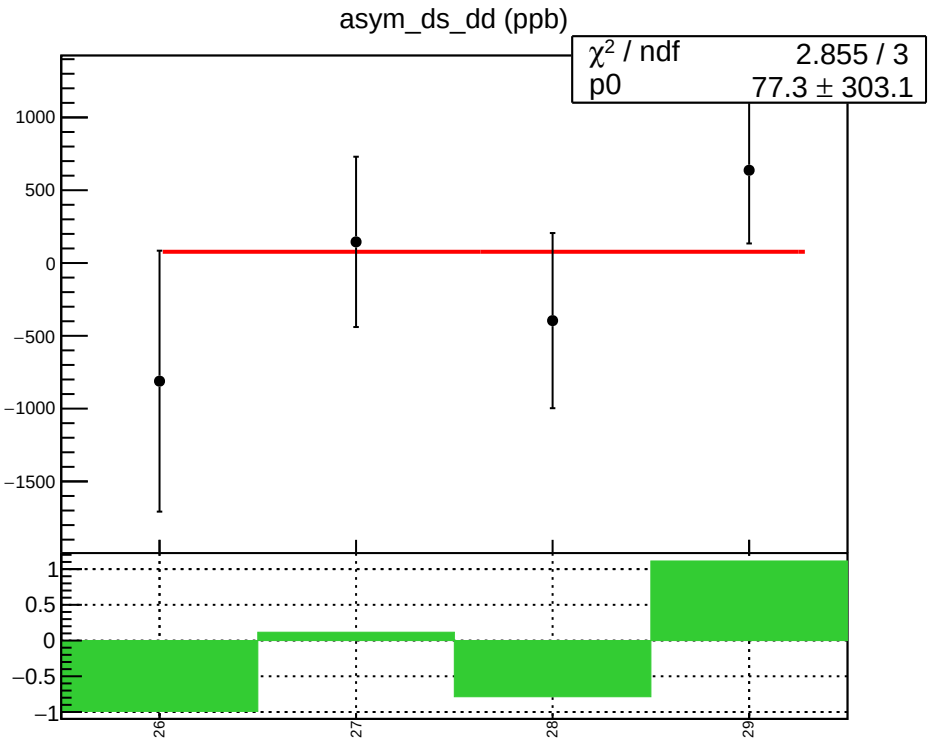
asym_dsr RMS (ppm)

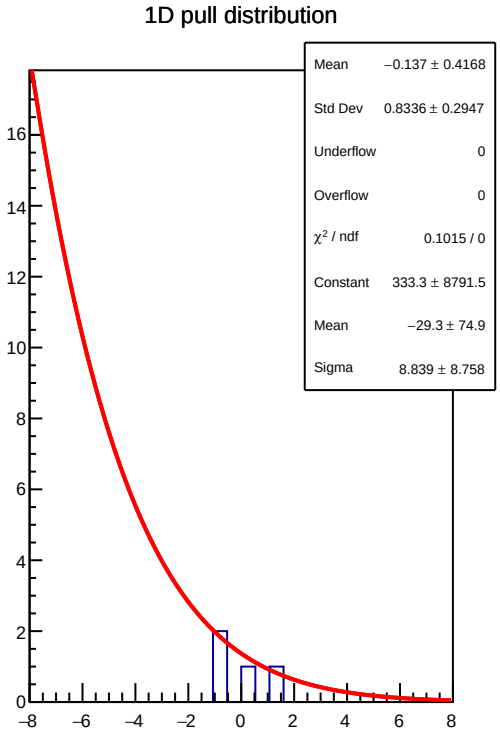


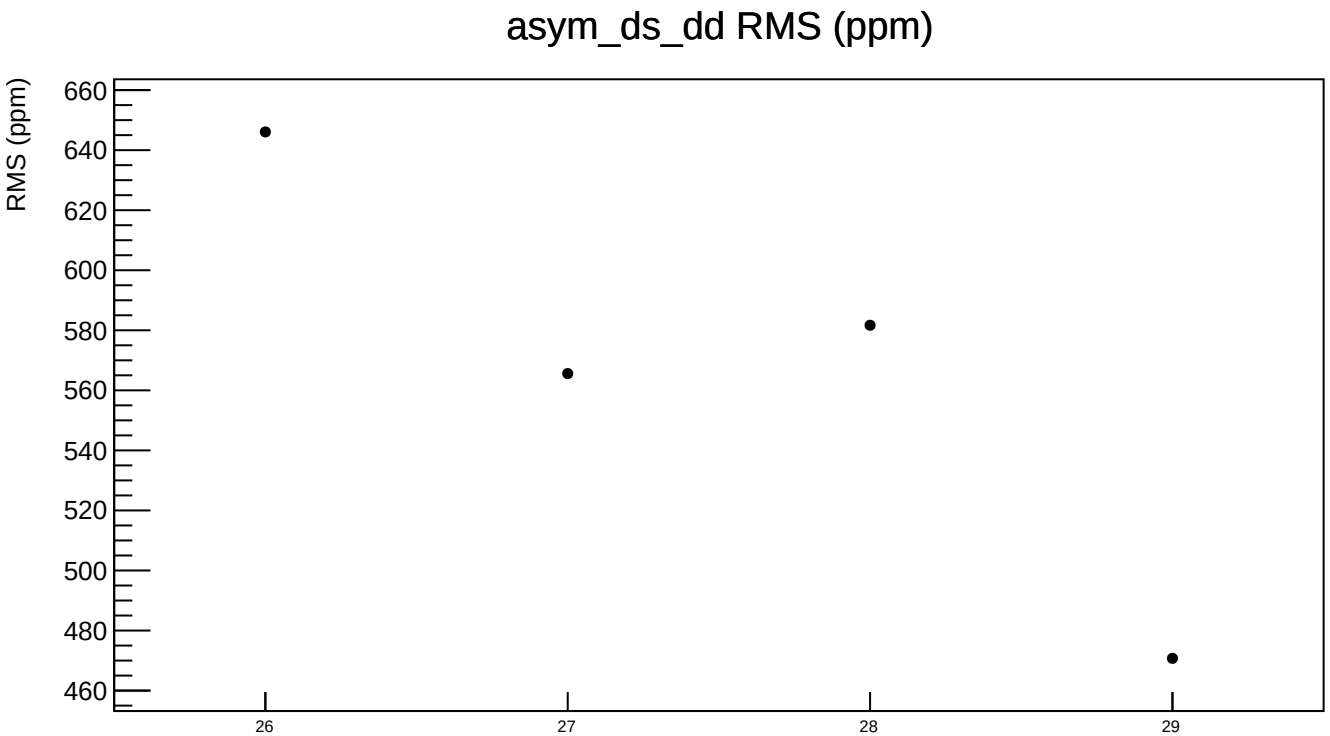

asym_ds_avg (ppb)
χ² / ndf 5.425 / 3
p0 511 ± 161.3
1200
1000
800
600
400
200
0
−200
−400
−600
1
0.5
0
−0.5
−1
−1.5
26
27
28
29

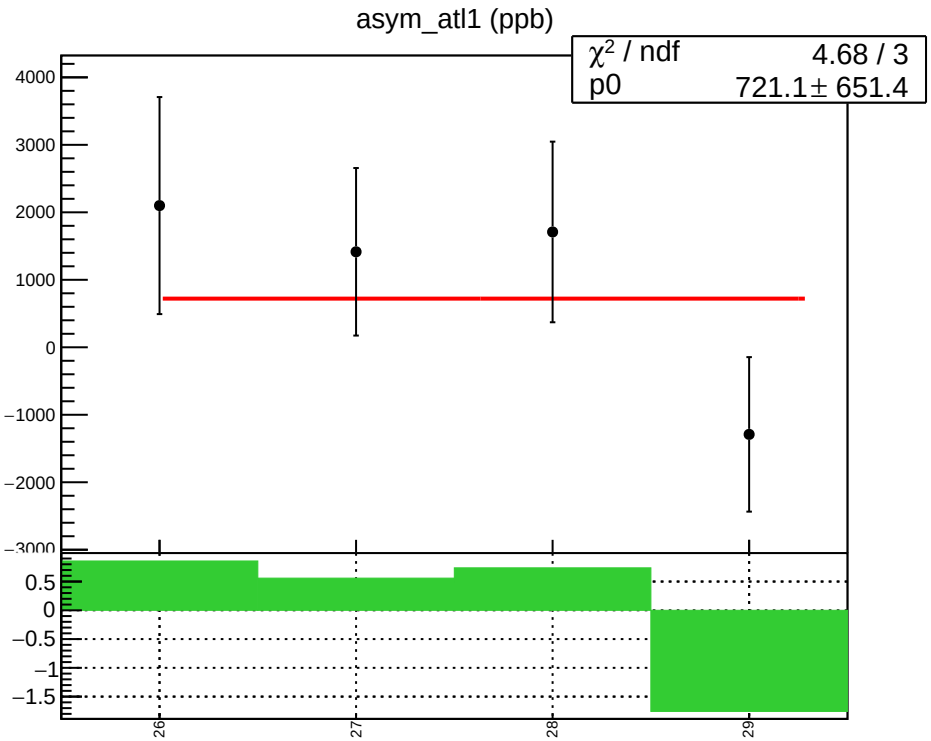

1D pull distribution
Mean −0.1295 ± 0.5787
Std Dev 1.157 ± 0.4092
Underflow 0
Overflow 0
χ² / ndf 2.23e−05 / 1
Constant 1.005 ± 0.504
Mean −7.384e−13 ± 5.512e+01
Sigma 10.98 ± 7.86
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

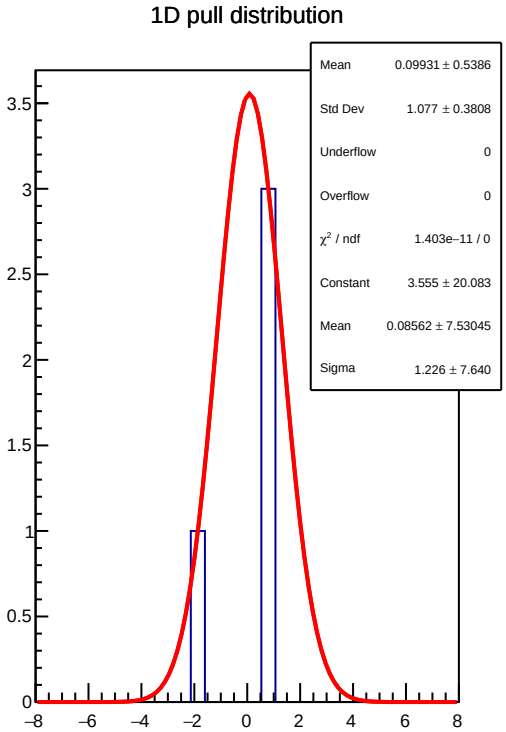

asym_ds_avg RMS (ppm)
RMS (ppm)
400
380
360
340
320
300
280
260
240
26
27
28
29

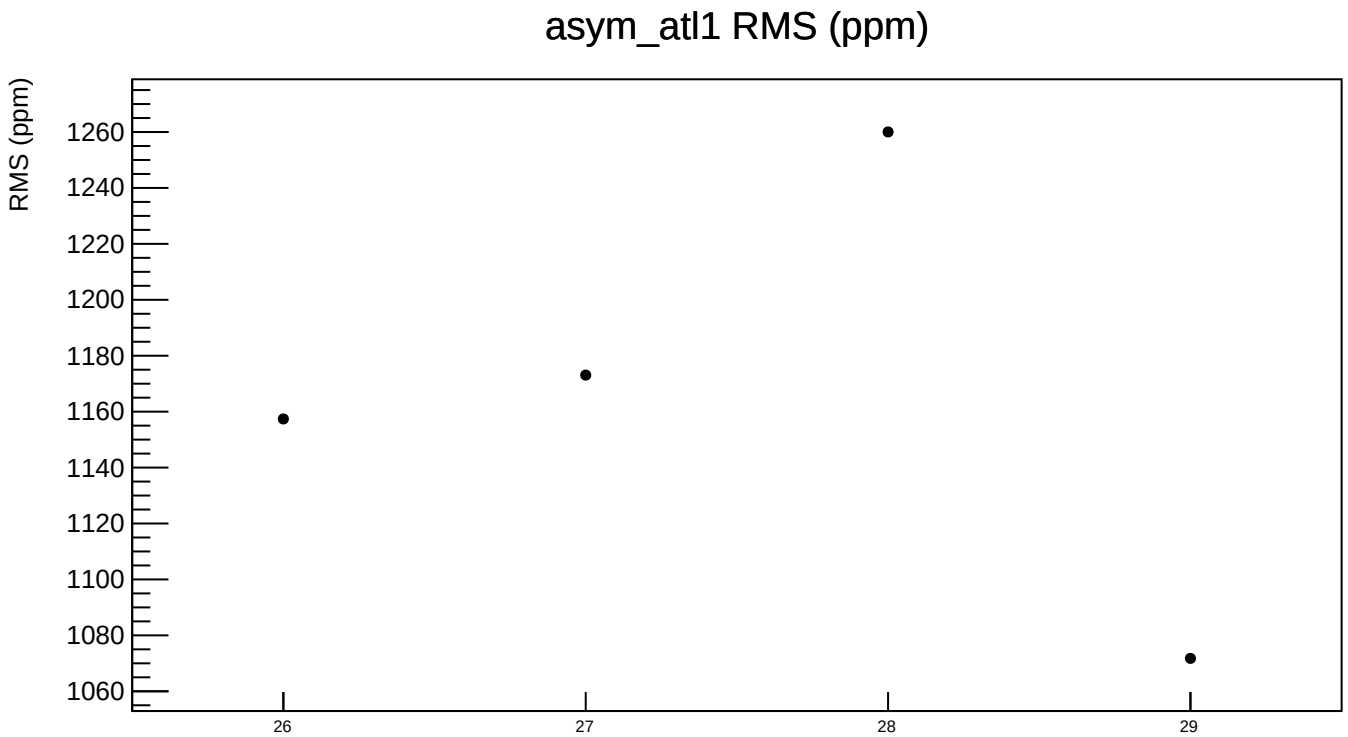

asym_ds_dd (ppb)
χ² / ndf 2.855 / 3
p0 77.3 ± 303.1
1000
500
0
−500
−1000
−1500
1
0.5
0
−0.5
−1
26
27
28
29

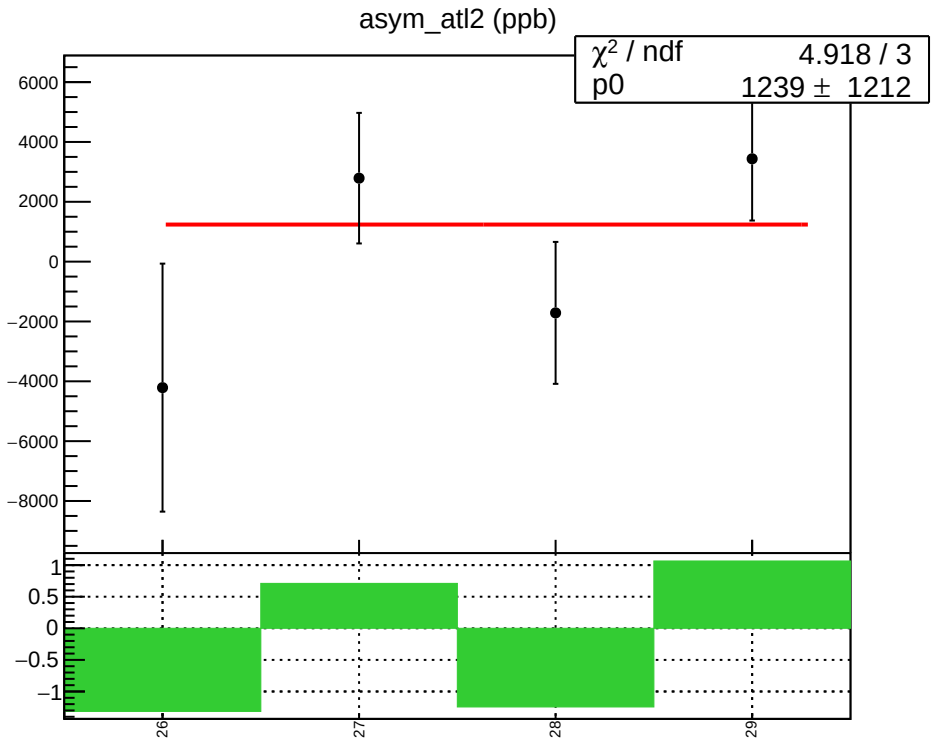

1D pull distribution
Mean −0.137 ± 0.4168
Std Dev 0.8336 ± 0.2947
Underflow 0
Overflow 0
χ² / ndf 0.1015 / 0
Constant 333.3 ± 8791.5
Mean −29.3 ± 74.9
Sigma 8.839 ± 8.758
16
14
12
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

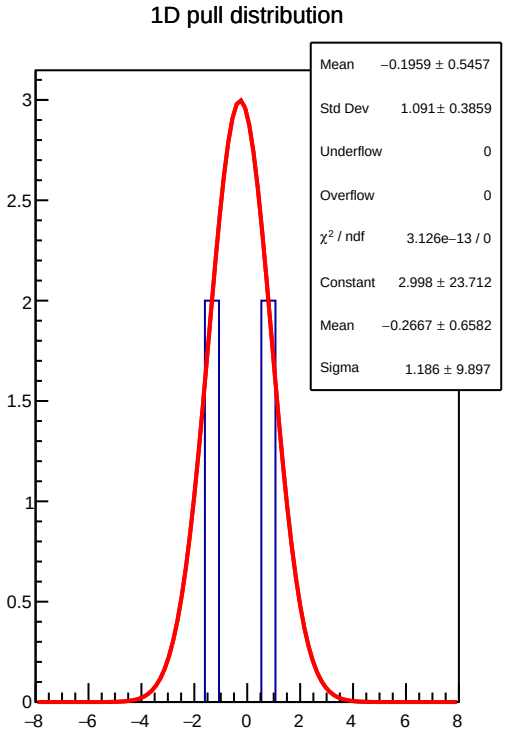

asym_ds_dd RMS (ppm)
RMS (ppm)
660
640
620
600
580
560
540
520
500
480
460
26
27
28
29

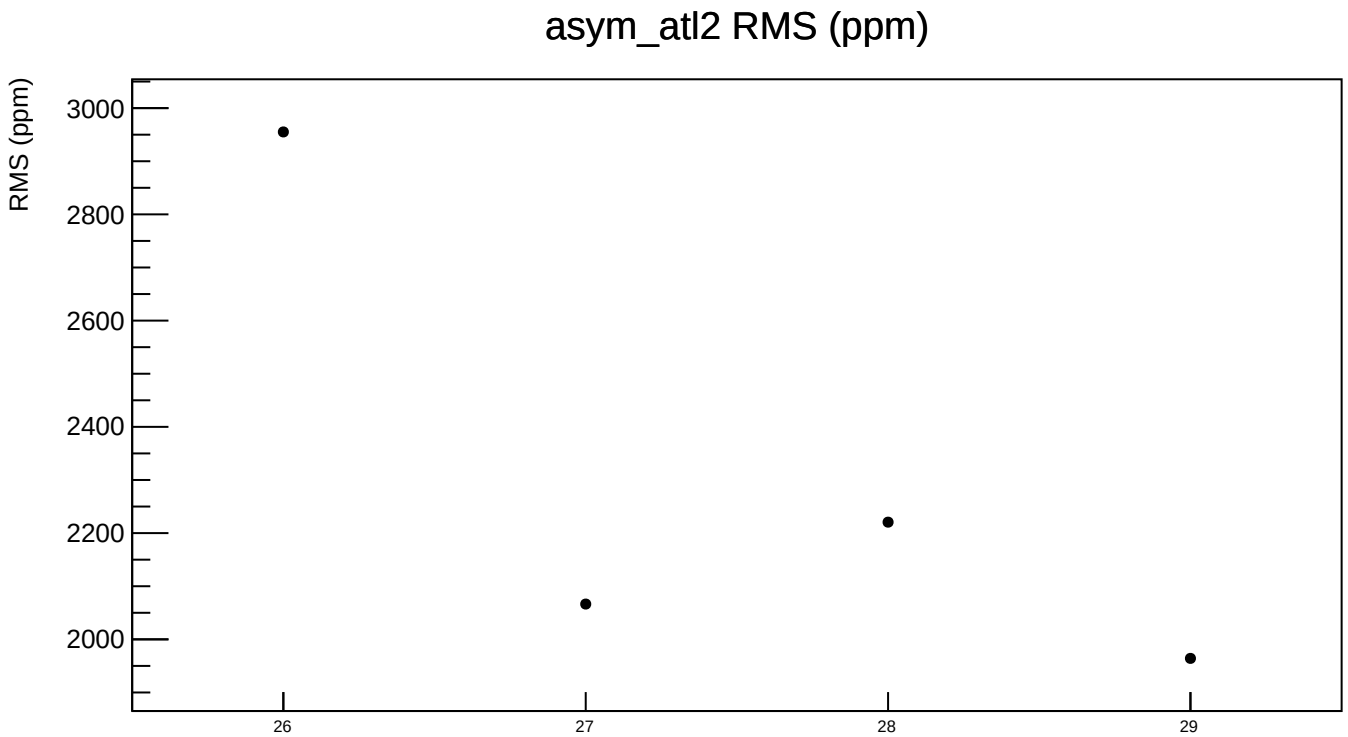

asym_atl1 (ppb)
χ² / ndf 4.68 / 3
p0 721.1 ± 651.4
4000
3000
2000
1000
0
−1000
−2000
−3000
0.5
0
−0.5
−1
−1.5
26
27
28
29

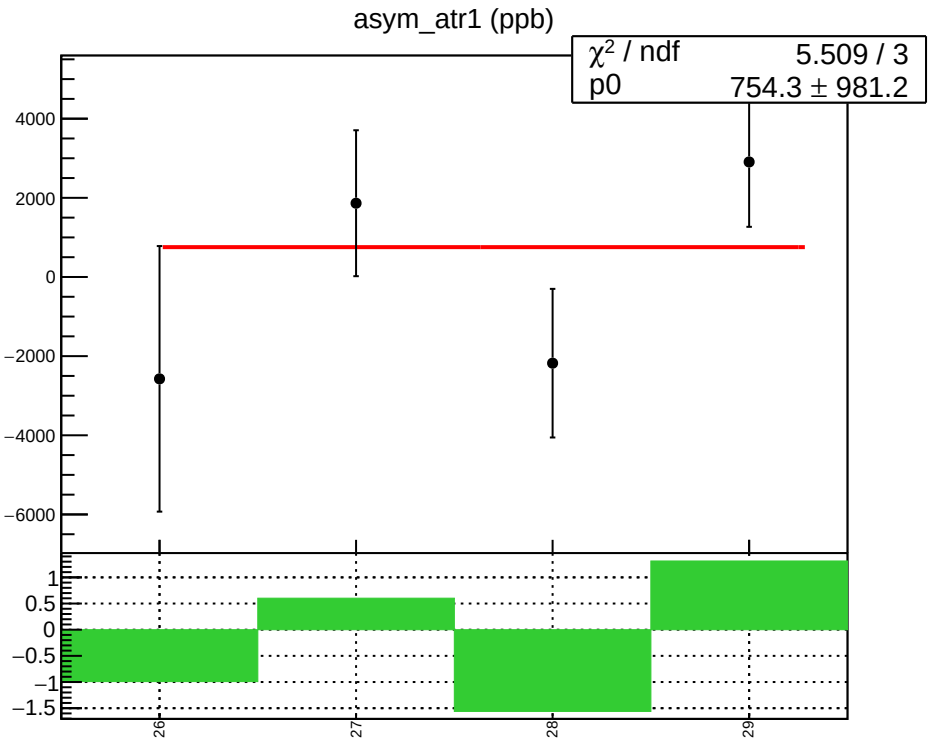

1D pull distribution
Mean 0.09931 ± 0.5386
Std Dev 1.077 ± 0.3808
Underflow 0
Overflow 0
χ² / ndf 1.403e−11 / 0
Constant 3.555 ± 20.083
Mean 0.08562 ± 7.53045
Sigma 1.226 ± 7.640
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

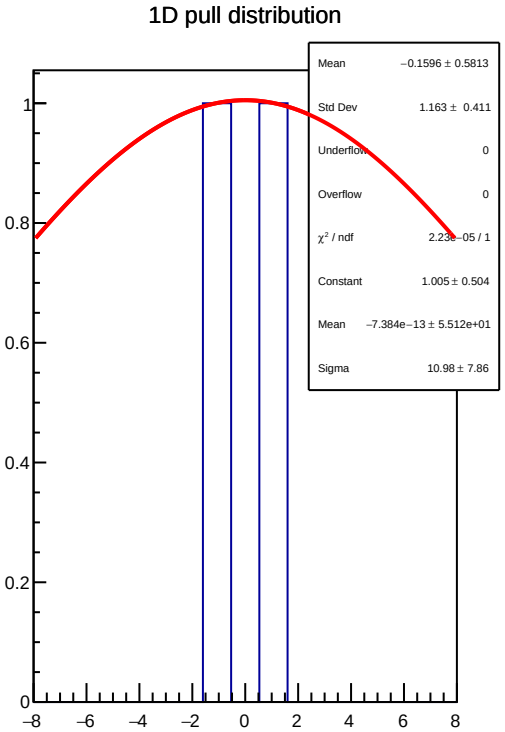

asym_atl1 RMS (ppm)
RMS (ppm)
1260
1240
1220
1200
1180
1160
1140
1120
1100
1080
1060
26
27
28
29

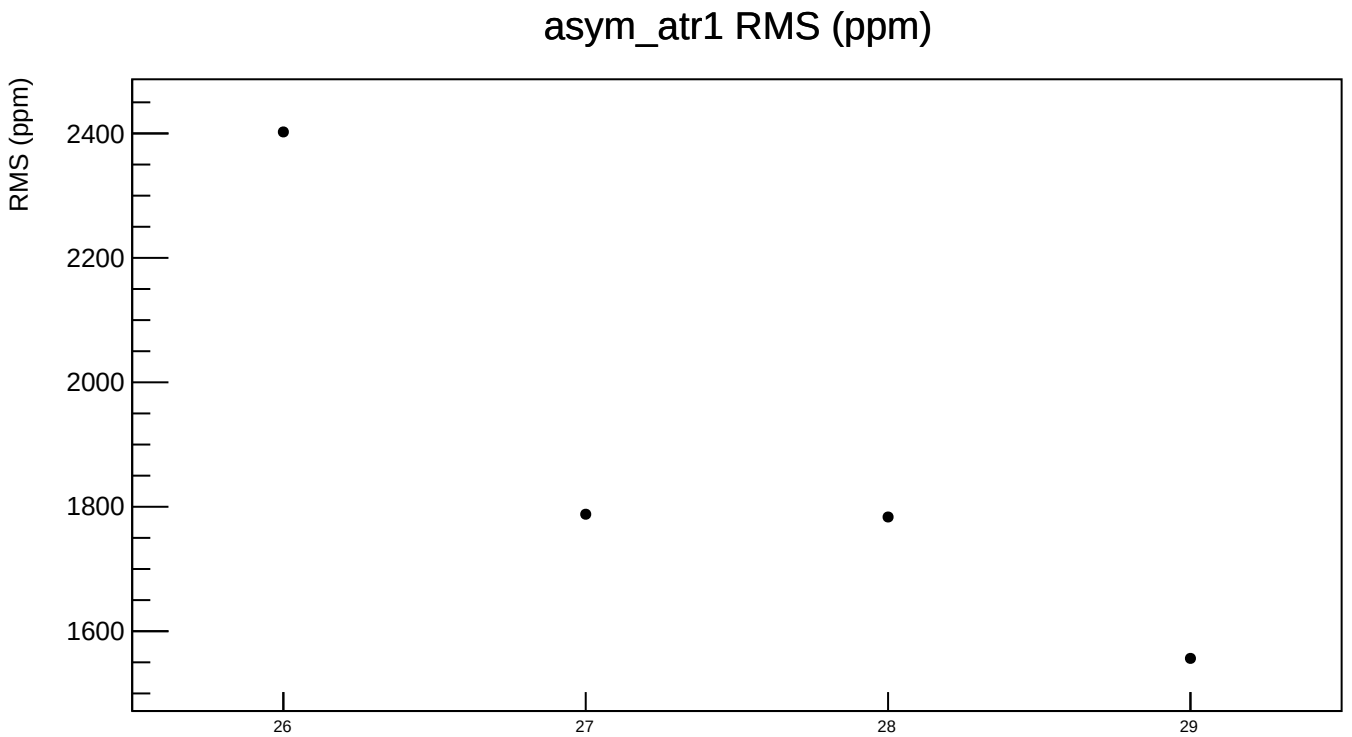

asym_atl2 (ppb)
χ² / ndf 4.918 / 3
p0 1239 ± 1212
6000
4000
2000
0
−2000
−4000
−6000
−8000
1
0.5
0
−0.5
−1
26
27
28
29

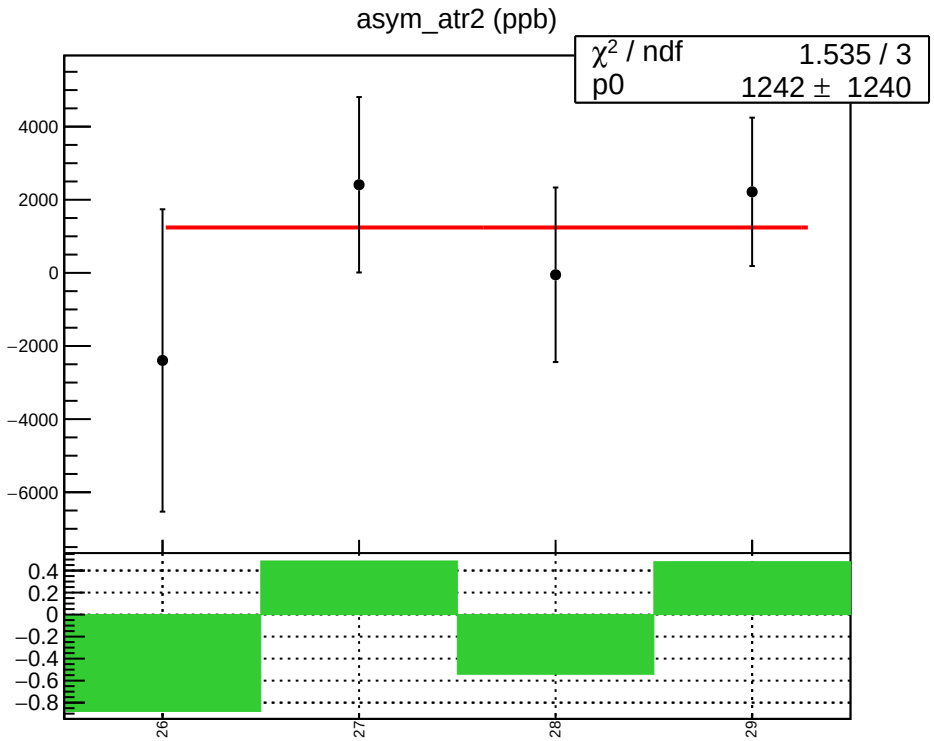

1D pull distribution
Mean −0.1959 ± 0.5457
Std Dev 1.091± 0.3859
Underflow 0
Overflow 0
χ² / ndf 3.126e−13 / 0
Constant 2.998 ± 23.712
Mean −0.2667 ± 0.6582
Sigma 1.186 ± 9.897
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

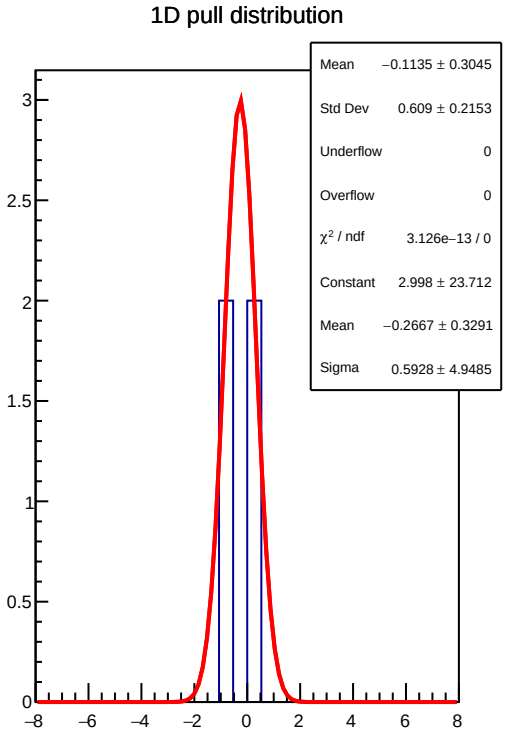
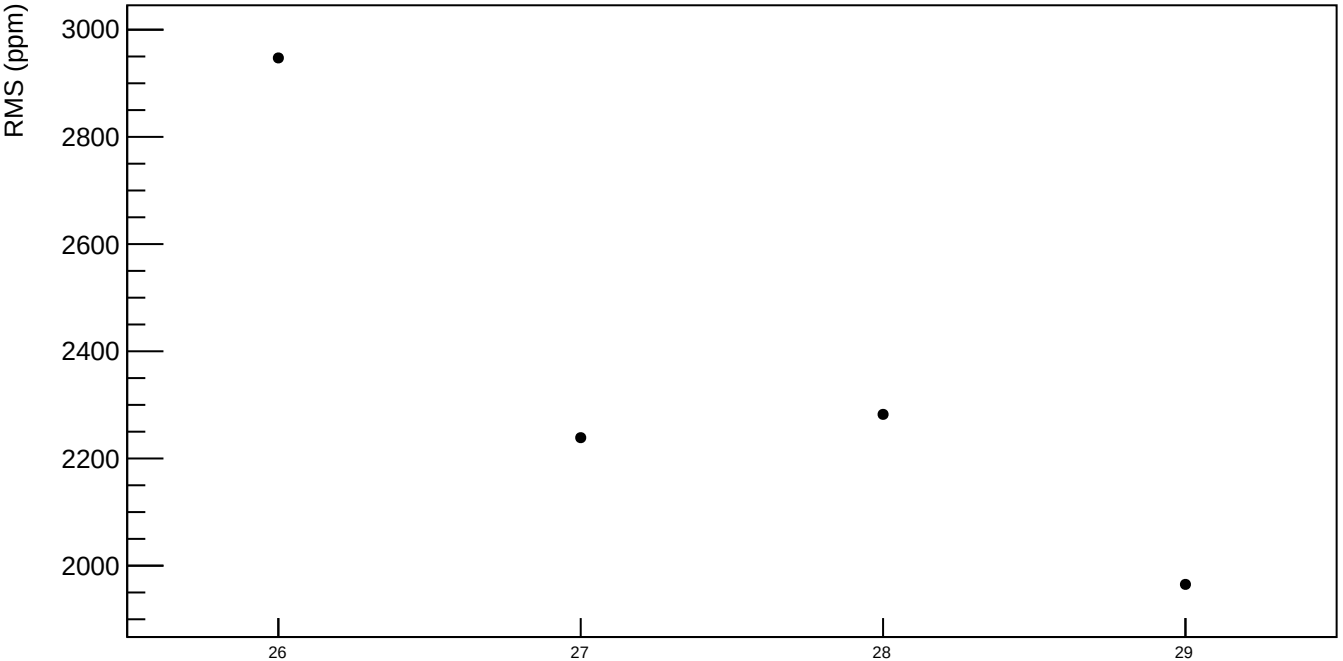

asym_atl2 RMS (ppm)
RMS (ppm)
3000
2800
2600
2400
2200
2000
26
27
28
29


asym_atr1 (ppb)
χ² / ndf 5.509 / 3
p0 754.3 ± 981.2
4000
2000
0
−2000
−4000
−6000
1
0.5
0
−0.5
−1
−1.5
26
27
28
29


1D pull distribution
Mean −0.1596 ± 0.5813
Std Dev 1.163 ± 0.411
Underflow 0
Overflow 0
χ² / ndf 2.23e−05 / 1
Constant 1.005 ± 0.504
Mean −7.384e−13 ± 5.512e+01
Sigma 10.98 ± 7.86
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8


asym_atr1 RMS (ppm)
RMS (ppm)
2400
2200
2000
1800
1600
26
27
28
29


asym_atr2 (ppb)
χ² / ndf 1.535 / 3
p0 1242 ± 1240
4000
2000
0
−2000
−4000
−6000
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
26
27
28
29


1D pull distribution
Mean −0.1135 ± 0.3045
Std Dev 0.609 ± 0.2153
Underflow 0
Overflow 0
χ² / ndf 3.126e−13 / 0
Constant 2.998 ± 23.712
Mean −0.2667 ± 0.3291
Sigma 0.5928 ± 4.9485
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

asym_atr2 RMS (ppm)