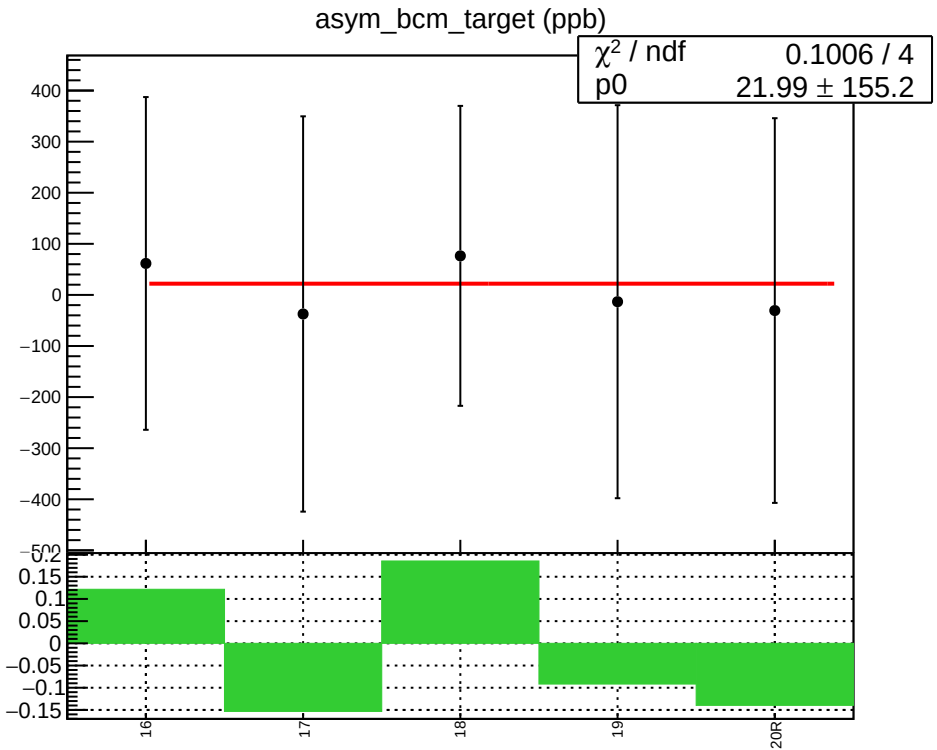
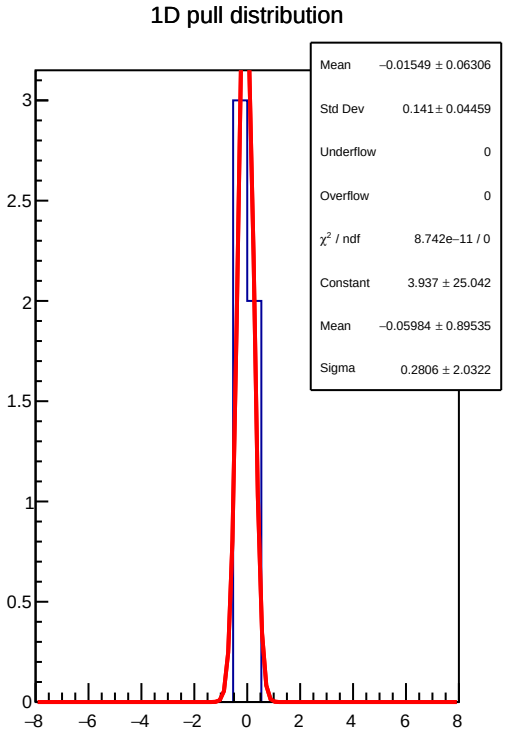
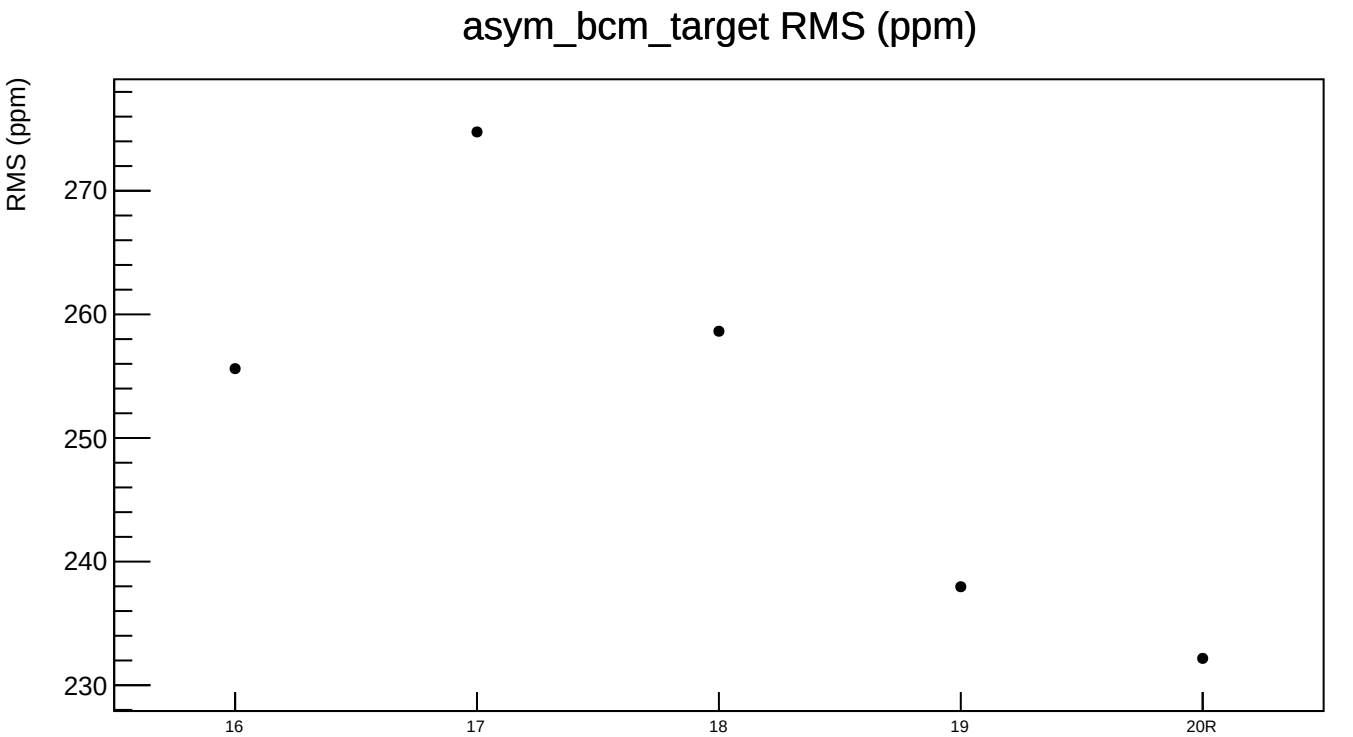
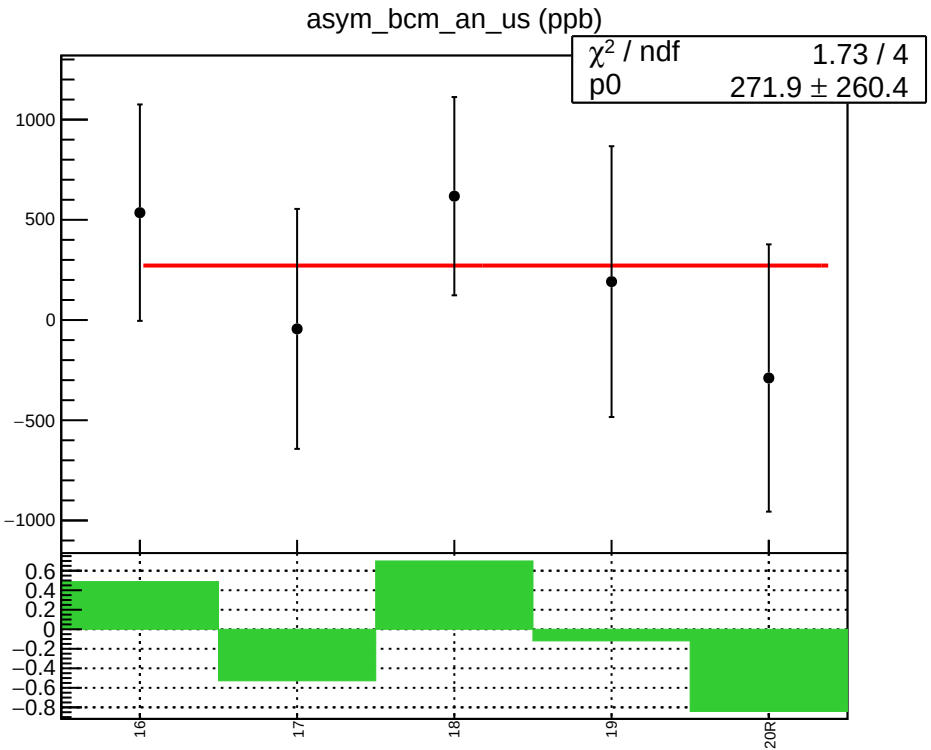
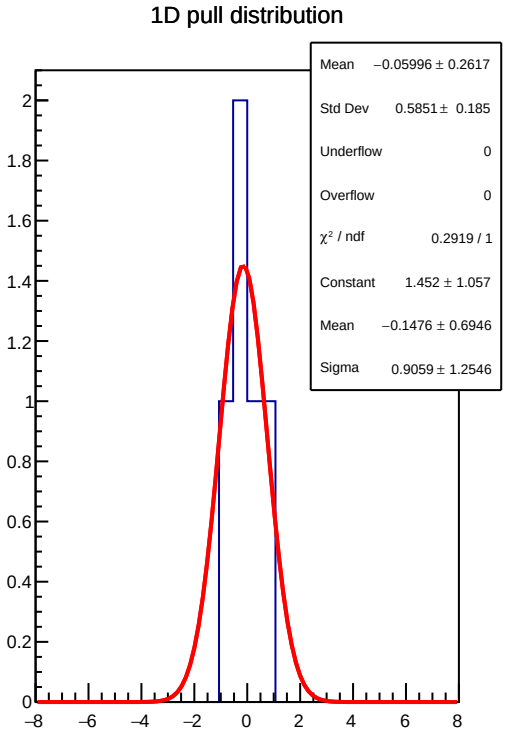
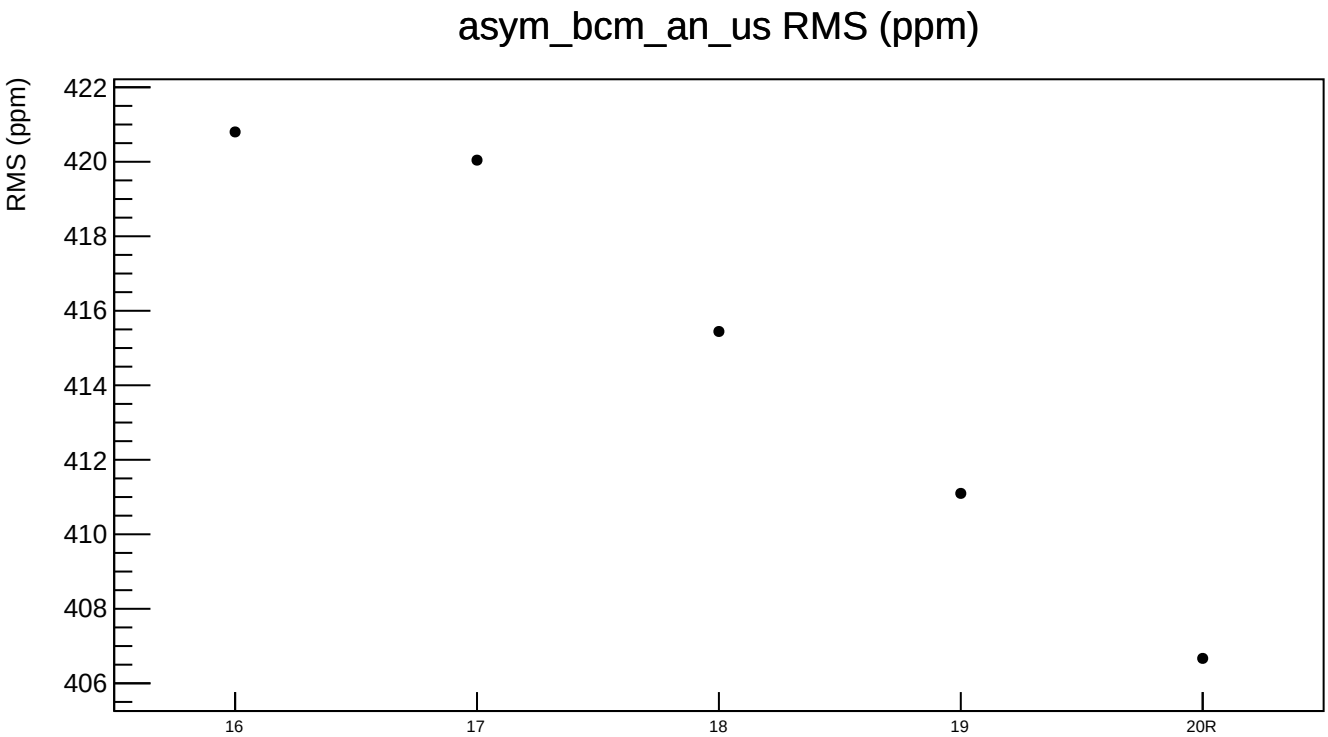

asym_bcm_target (ppb)
χ² / ndf 0.1006 / 4
p0 21.99 ± 155.2
400
300
200
100
0
−100
−200
−300
−400
−500
0.2
0.15
0.1
0.05
0
−0.05
−0.1
−0.15
16
17
18
19
20R

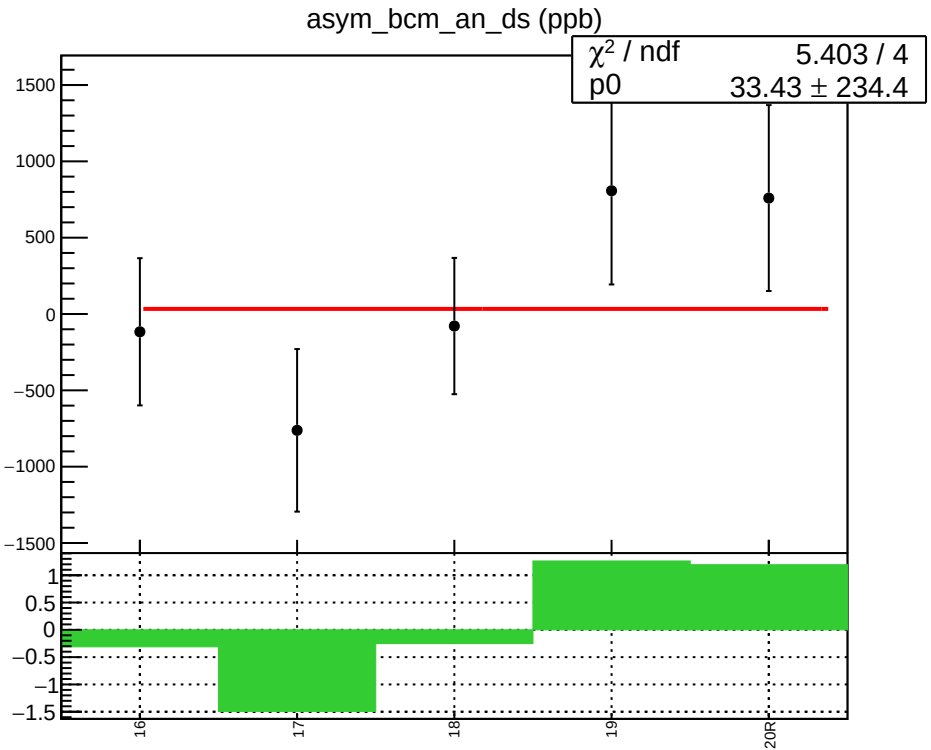

1D pull distribution
Mean −0.01549 ± 0.06306
Std Dev 0.141 ± 0.04459
Underflow 0
Overflow 0
χ² / ndf 8.742e−11 / 0
Constant 3.937 ± 25.042
Mean −0.05984 ± 0.89535
Sigma 0.2806 ± 2.0322
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

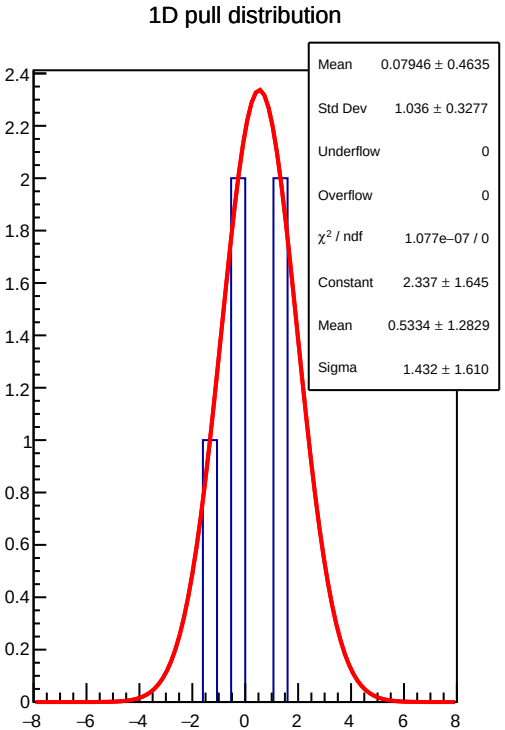

asym_bcm_target RMS (ppm)
RMS (ppm)
270
260
250
240
230
16
17
18
19
20R

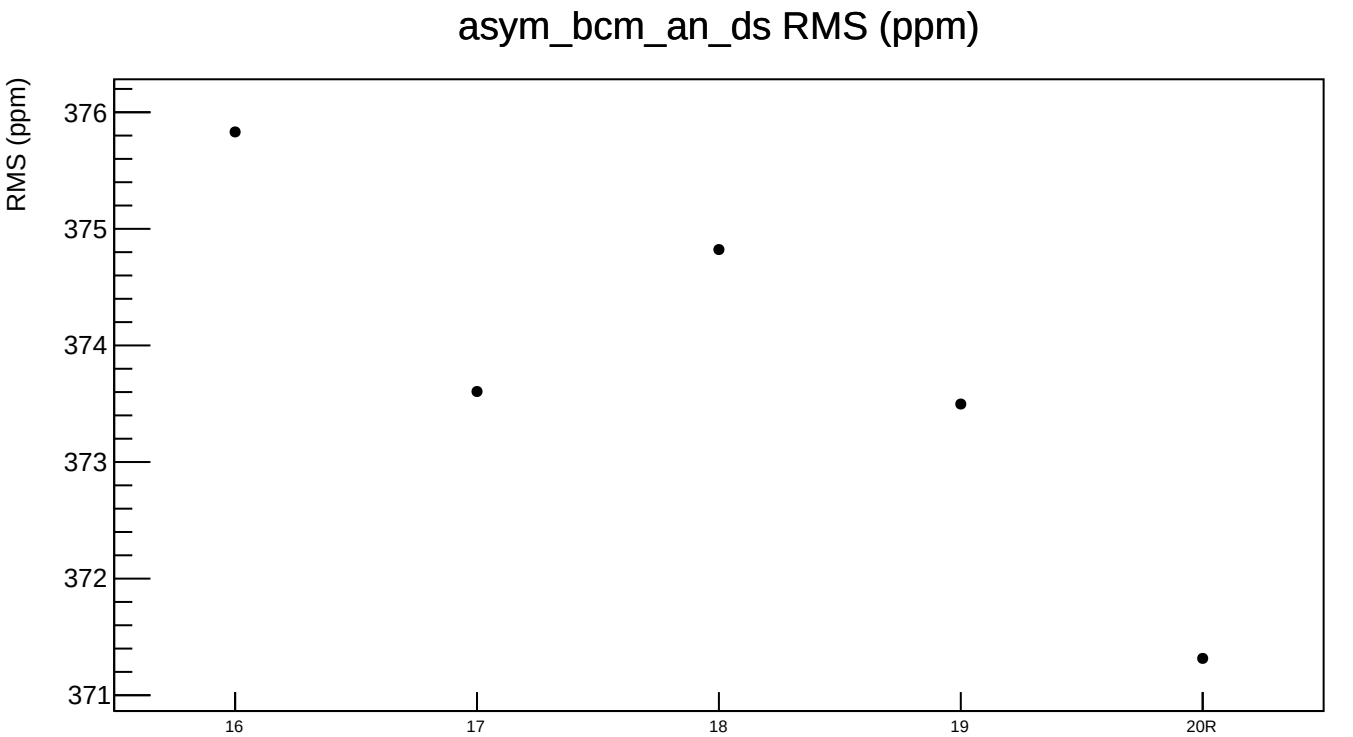

asym_bcm_an_us (ppb)
χ² / ndf 1.73 / 4
p0 271.9 ± 260.4
1000
500
0
−500
−1000
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
16
17
18
19
20R

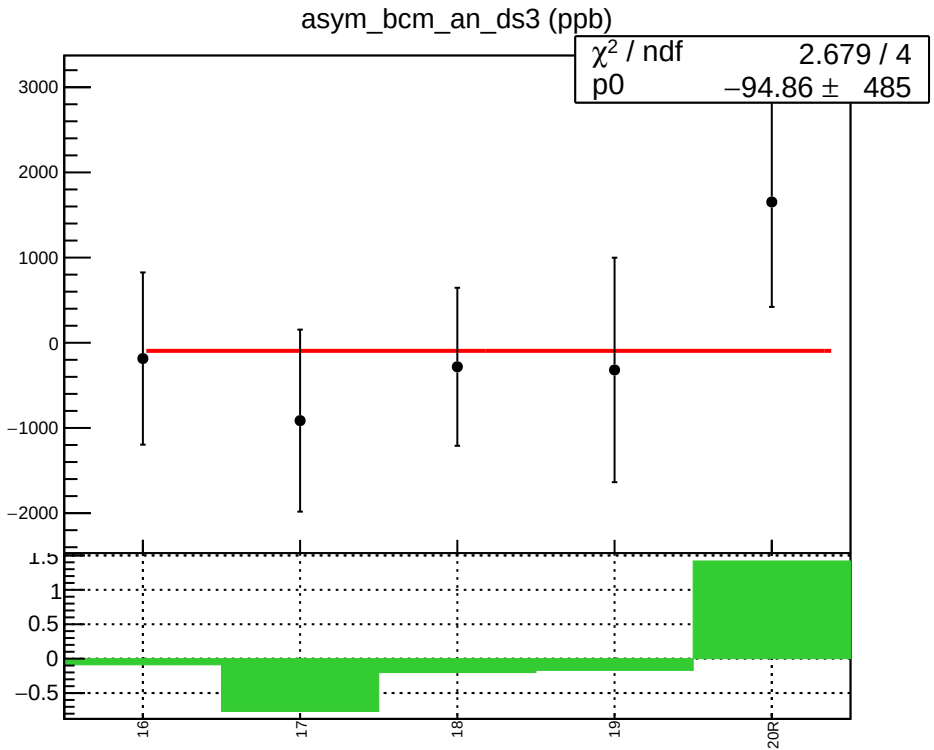

1D pull distribution
Mean −0.05996 ± 0.2617
Std Dev 0.5851 ± 0.185
Underflow 0
Overflow 0
χ² / ndf 0.2919 / 1
Constant 1.452 ± 1.057
Mean −0.1476 ± 0.6946
Sigma 0.9059 ± 1.2546
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

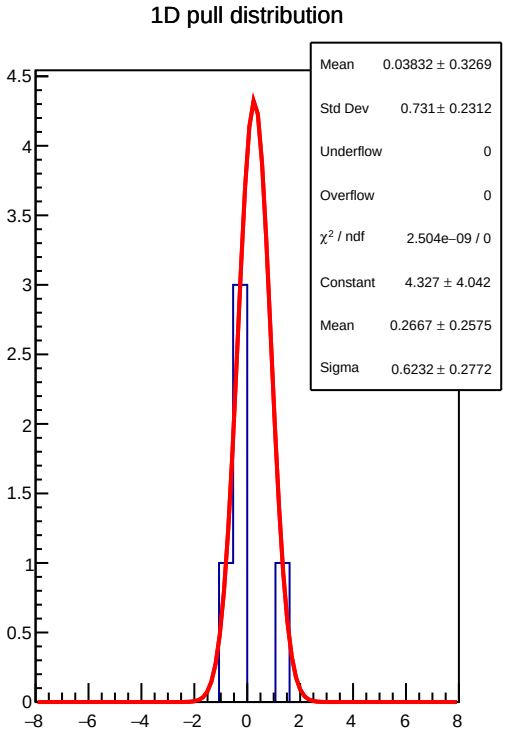

asym_bcm_an_us RMS (ppm)
RMS (ppm)
422
420
418
416
414
412
410
408
406
16
17
18
19
20R

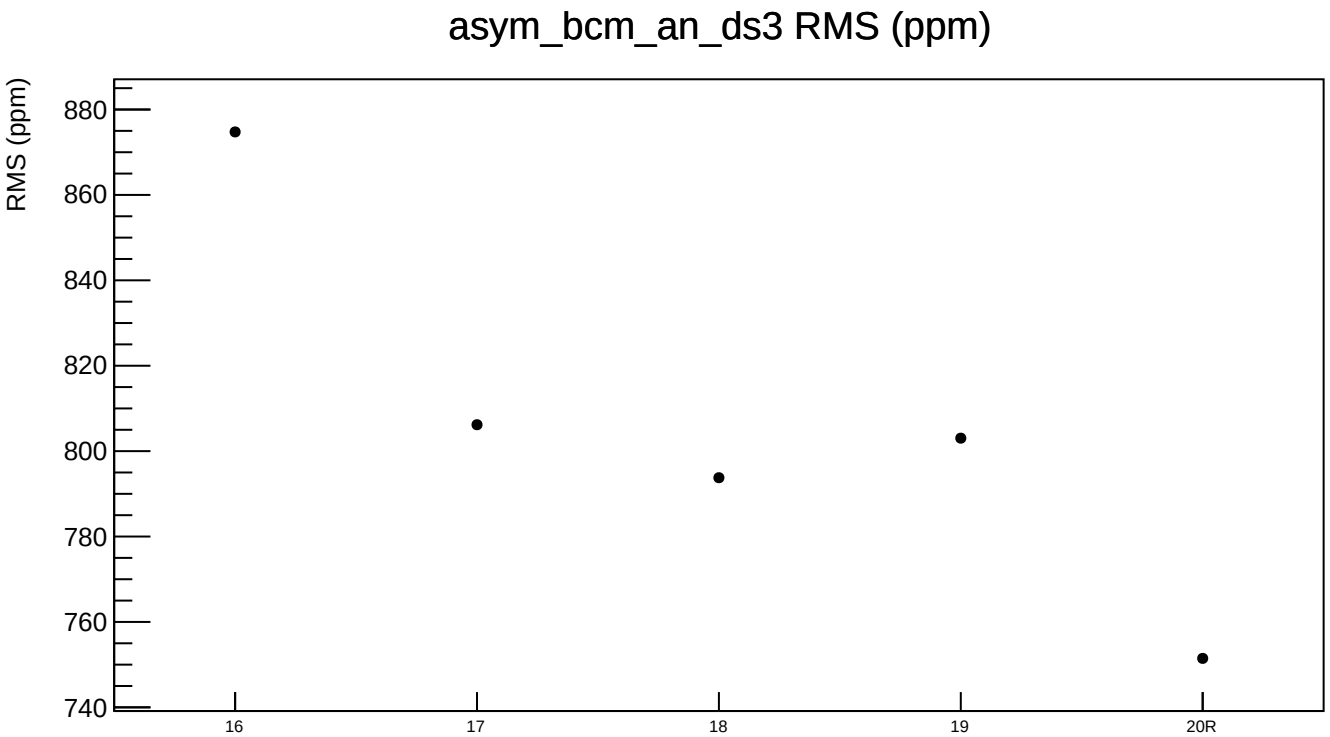

asym_bcm_an_ds (ppb)
χ² / ndf 5.403 / 4
p0 33.43 ± 234.4
1500
1000
500
0
−500
−1000
−1500
1
0.5
0
−0.5
−1
−1.5
16
17
18
19
20R

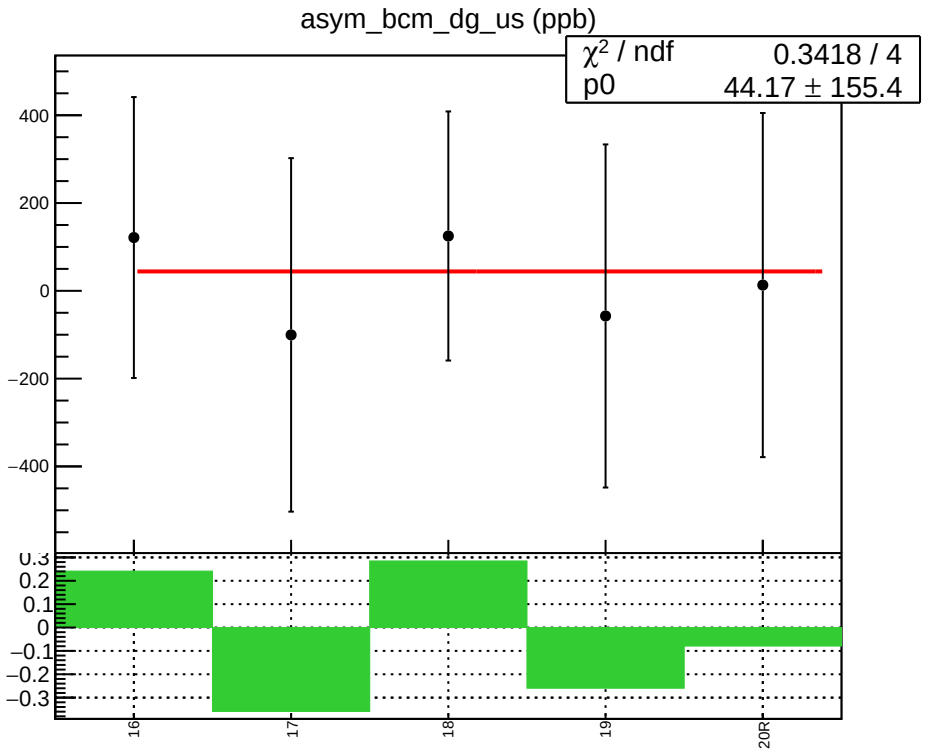

1D pull distribution
Mean 0.07946 ± 0.4635
Std Dev 1.036 ± 0.3277
Underflow 0
Overflow 0
χ² / ndf 1.077e−07 / 0
Constant 2.337 ± 1.645
Mean 0.5334 ± 1.2829
Sigma 1.432 ± 1.610
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

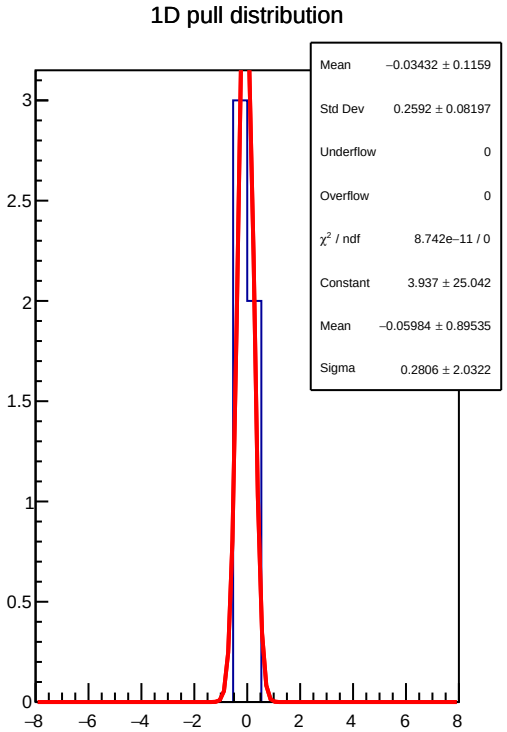

asym_bcm_an_ds RMS (ppm)
RMS (ppm)
376
375
374
373
372
371
16
17
18
19
20R

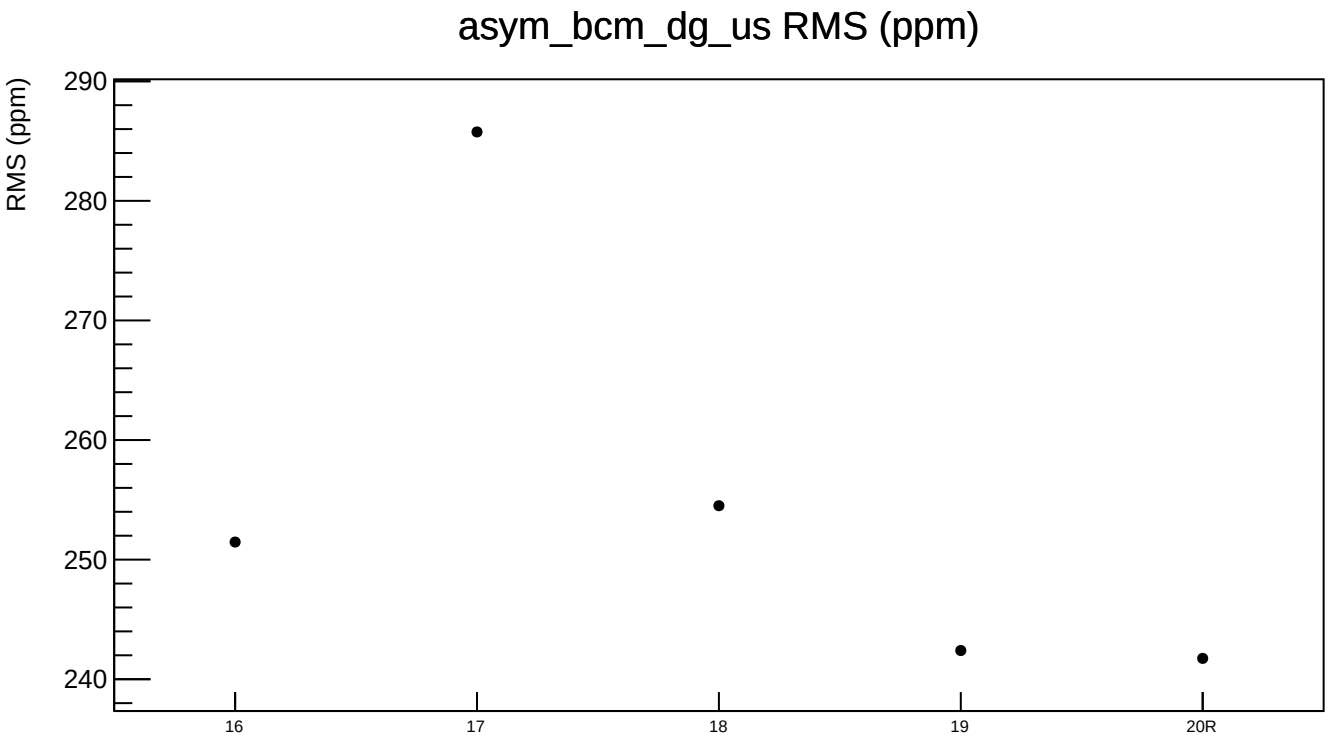

asym_bcm_an_ds3 (ppb)
χ² / ndf 2.679 / 4
p0 −94.86 ± 485
3000
2000
1000
0
−1000
−2000
1.5
1
0.5
0
−0.5
16
17
18
19
20R

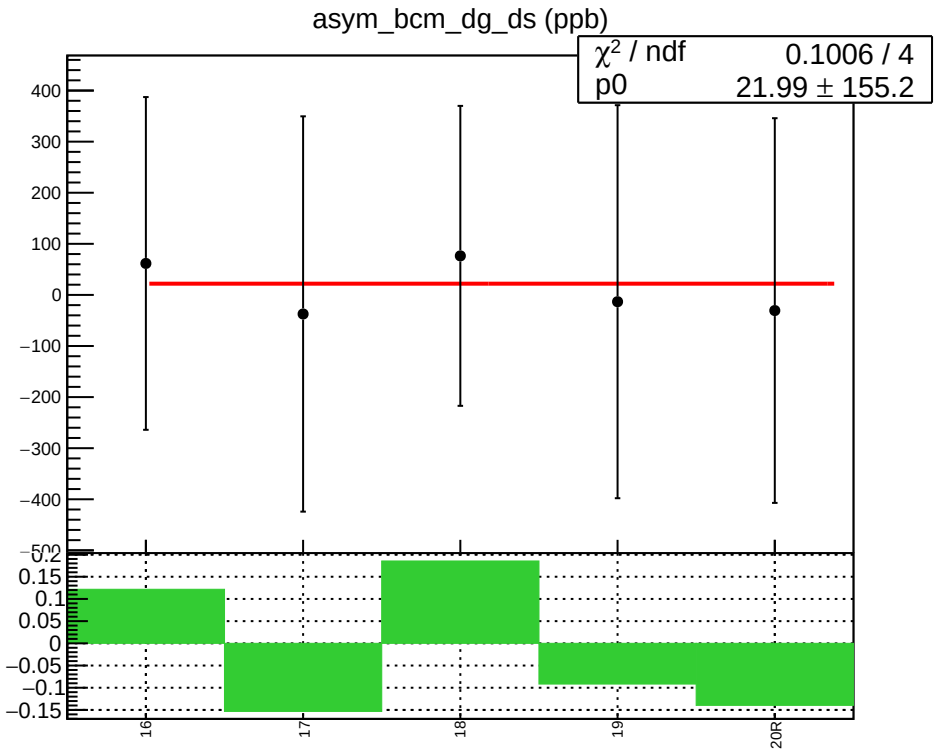

1D pull distribution
Mean 0.03832 ± 0.3269
Std Dev 0.731 ± 0.2312
Underflow 0
Overflow 0
χ² / ndf 2.504e−09 / 0
Constant 4.327 ± 4.042
Mean 0.2667 ± 0.2575
Sigma 0.6232 ± 0.2772
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

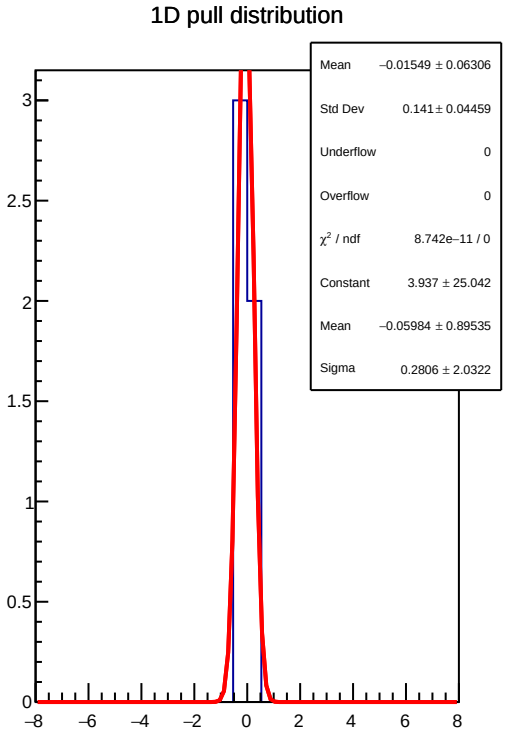

asym_bcm_an_ds3 RMS (ppm)
RMS (ppm)
880
860
840
820
800
780
760
740
16
17
18
19
20R


asym_bcm_dg_us (ppb)
χ² / ndf 0.3418 / 4
p0 44.17 ± 155.4
400
200
0
−200
−400
0.3
0.2
0.1
0
−0.1
−0.2
−0.3
16
17
18
19
20R

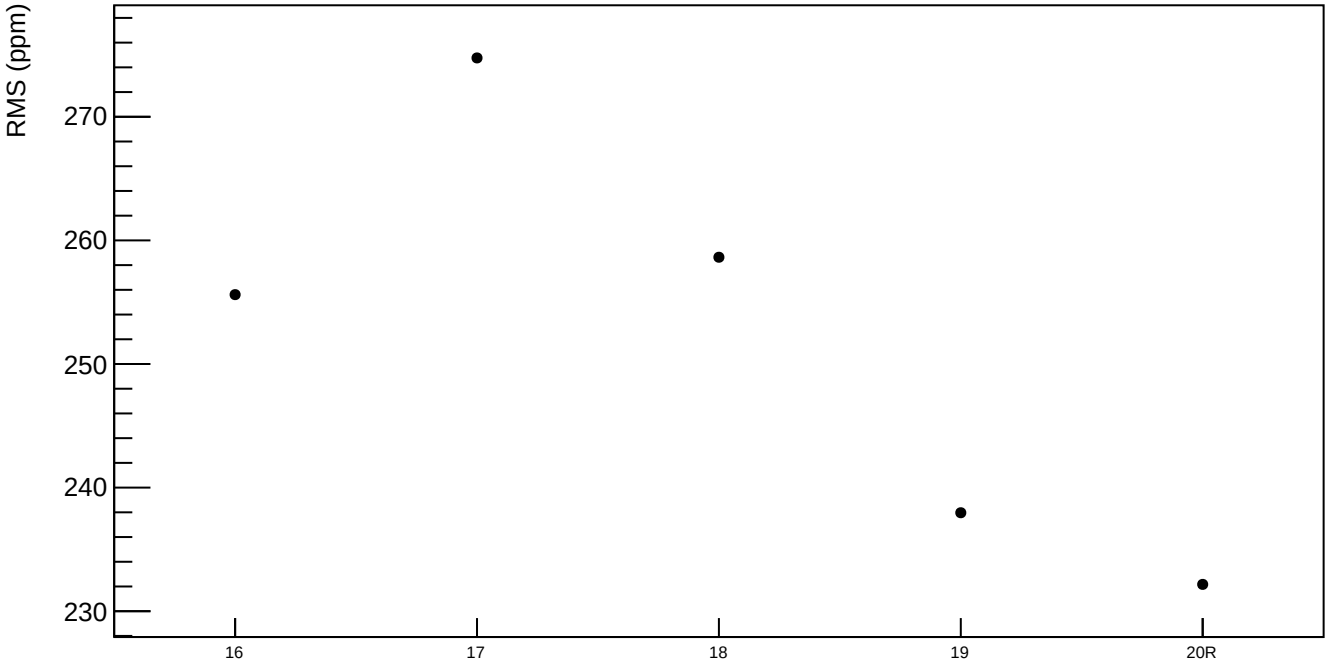

1D pull distribution
Mean −0.03432 ± 0.1159
Std Dev 0.2592 ± 0.08197
Underflow 0
Overflow 0
χ² / ndf 8.742e−11 / 0
Constant 3.937 ± 25.042
Mean −0.05984 ± 0.89535
Sigma 0.2806 ± 2.0322
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

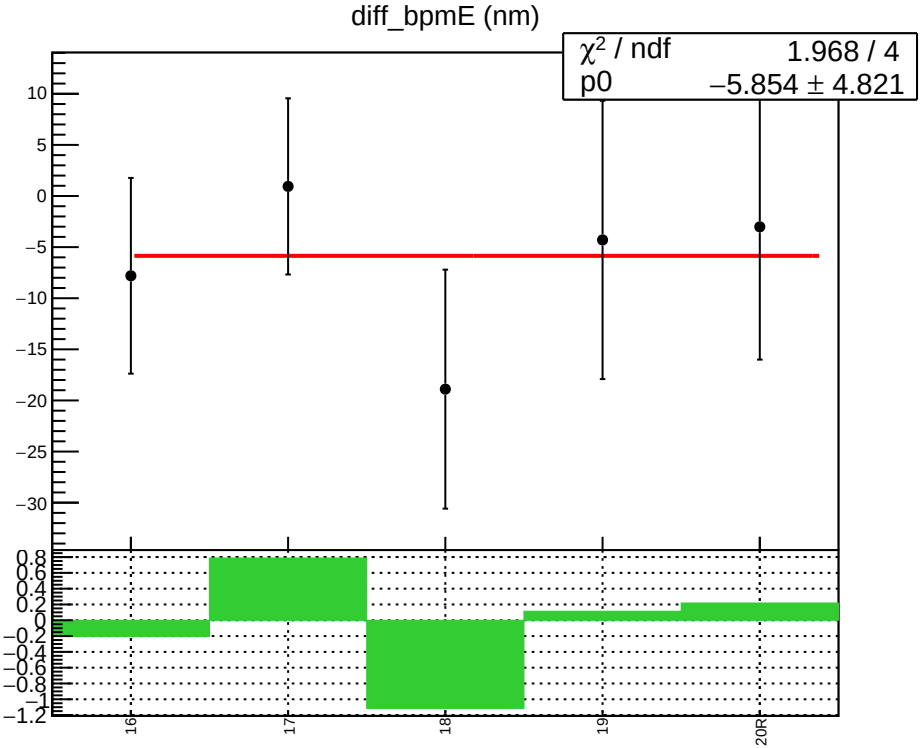

asym_bcm_dg_us RMS (ppm)
RMS (ppm)
290
280
270
260
250
240
16
17
18
19
20R

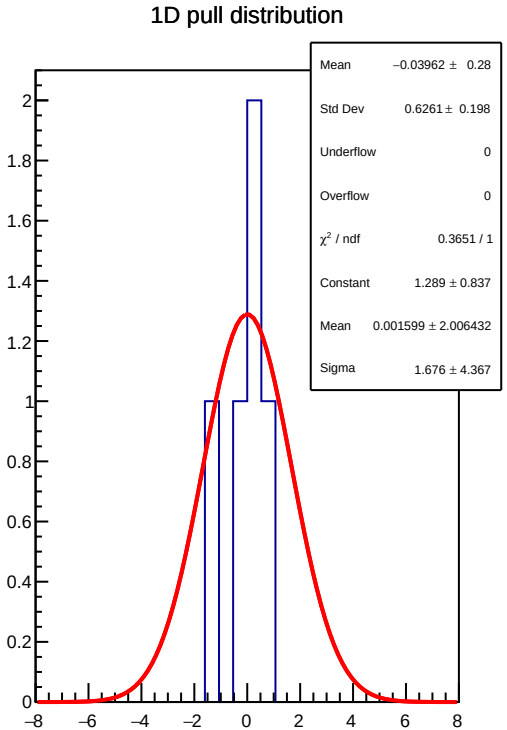

asym_bcm_dg_ds (ppb)
χ² / ndf 0.1006 / 4
p0 21.99 ± 155.2
400
300
200
100
0
−100
−200
−300
−400
−500
0.2
0.15
0.1
0.05
0
−0.05
−0.1
−0.15
16
17
18
19
20R


1D pull distribution
Mean −0.01549 ± 0.06306
Std Dev 0.141 ± 0.04459
Underflow 0
Overflow 0
χ² / ndf 8.742e−11 / 0
Constant 3.937 ± 25.042
Mean −0.05984 ± 0.89535
Sigma 0.2806 ± 2.0322
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

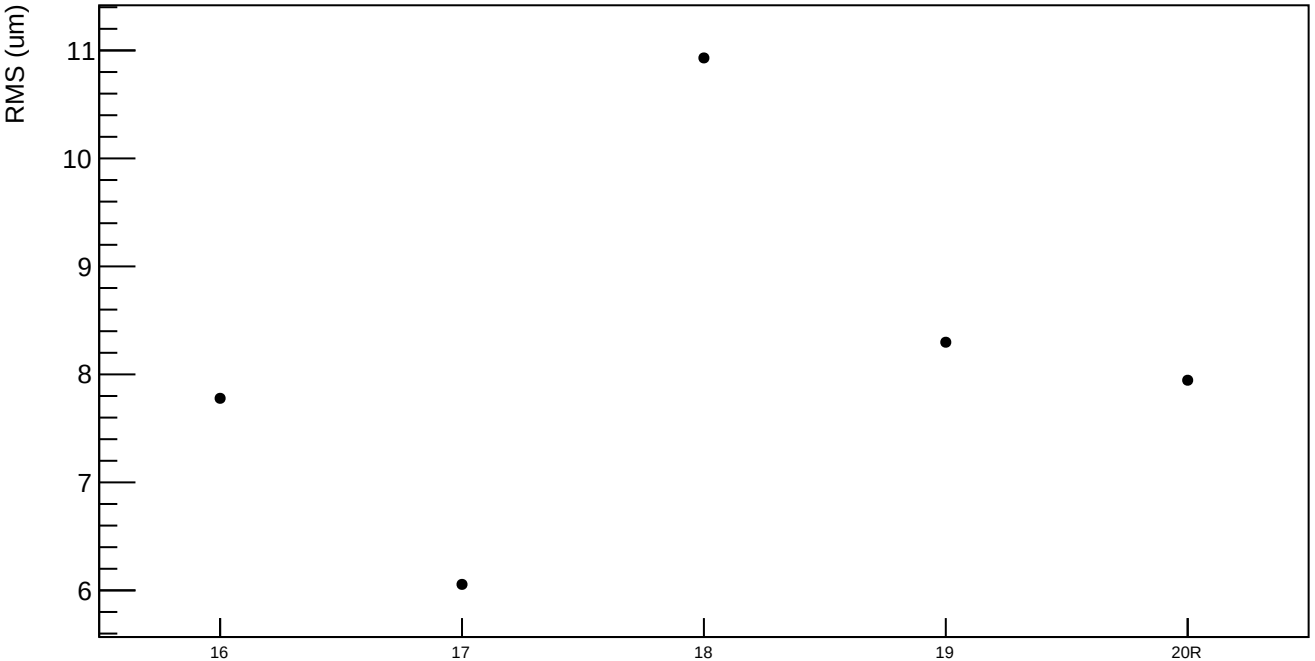
asym_bcm_dg_ds RMS (ppm)

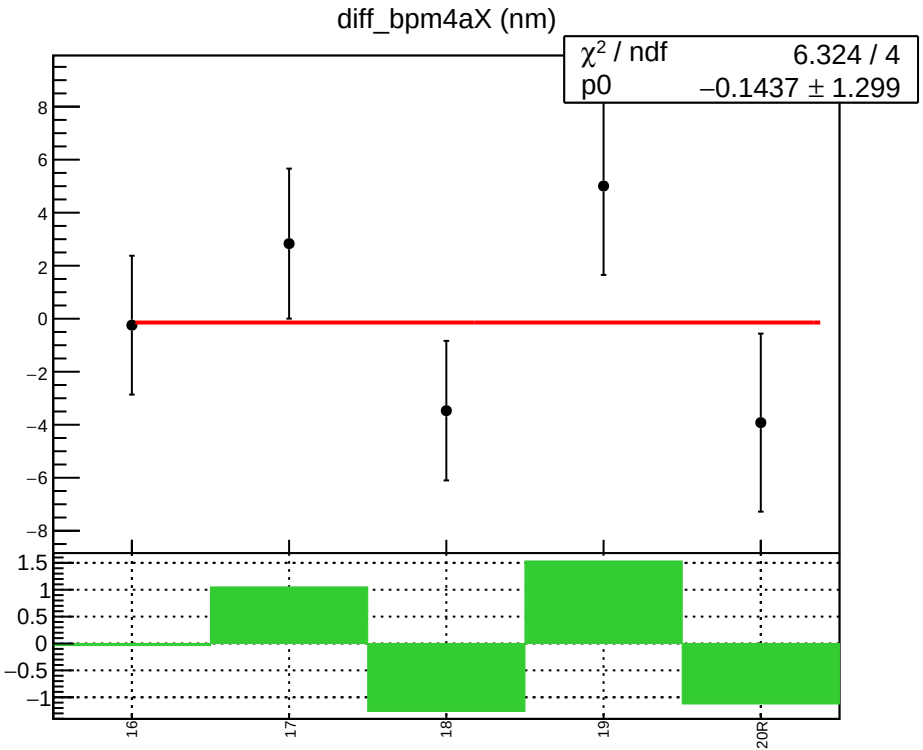


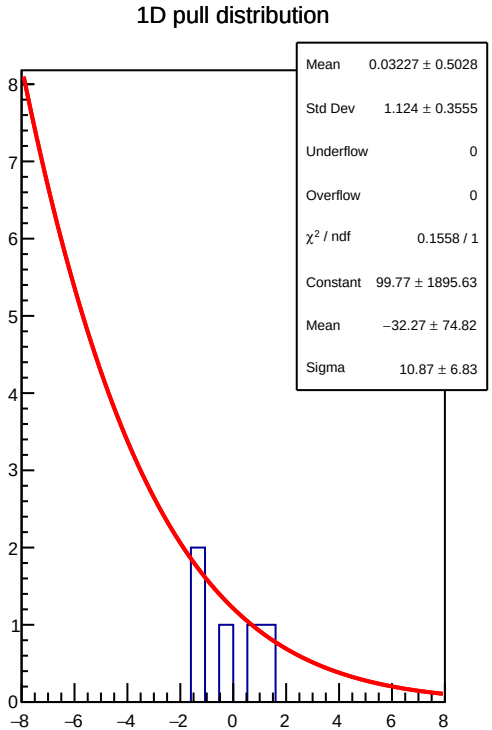

diff_bpmE (nm)
χ² / ndf 1.968 / 4
p0 −5.854 ± 4.821
16
17
18
19
20R


1D pull distribution
Mean −0.03962 ± 0.28
Std Dev 0.6261 ± 0.198
Underflow 0
Overflow 0
χ² / ndf 0.3651 / 1
Constant 1.289 ± 0.837
Mean 0.001599 ± 2.006432
Sigma 1.676 ± 4.367

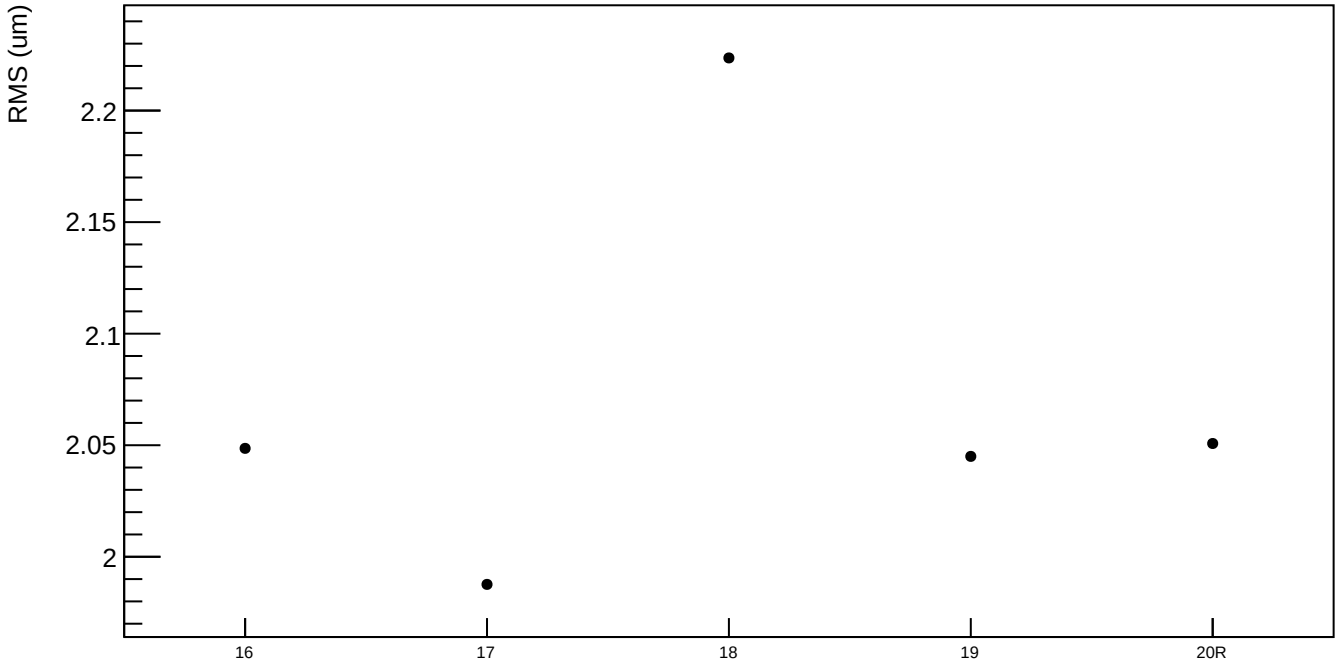
diff_bpmE RMS (um)

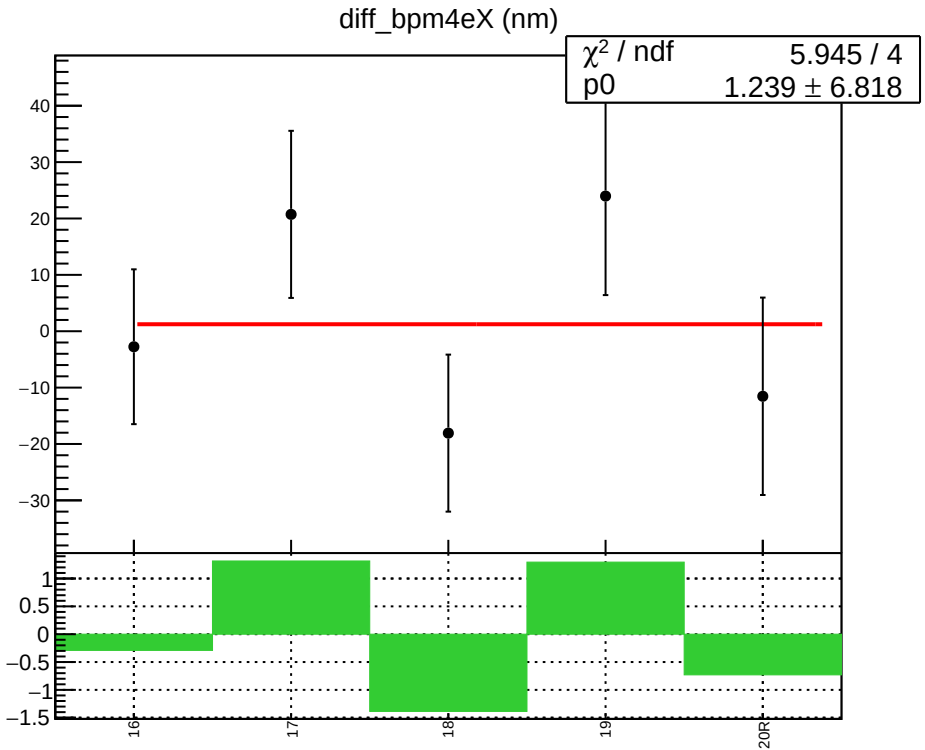


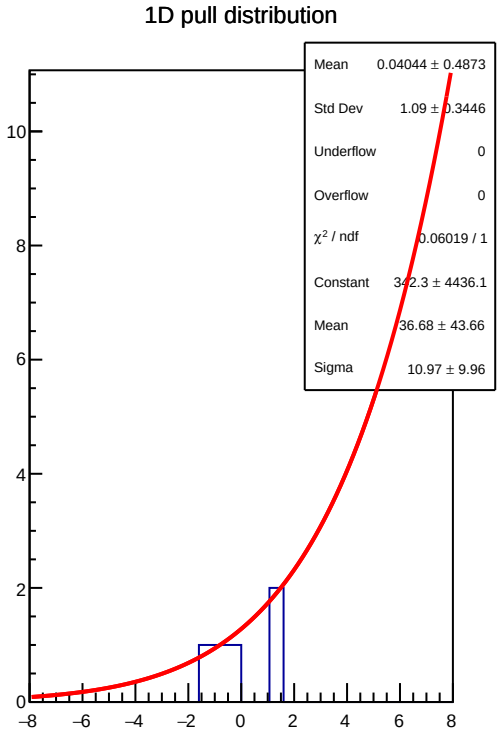

diff_bpm4aX (nm)
χ² / ndf 6.324 / 4
p0 −0.1437 ± 1.299
16
17
18
19
20R


1D pull distribution
Mean 0.03227 ± 0.5028
Std Dev 1.124 ± 0.3555
Underflow 0
Overflow 0
χ² / ndf 0.1558 / 1
Constant 99.77 ± 1895.63
Mean −32.27 ± 74.82
Sigma 10.87 ± 6.83

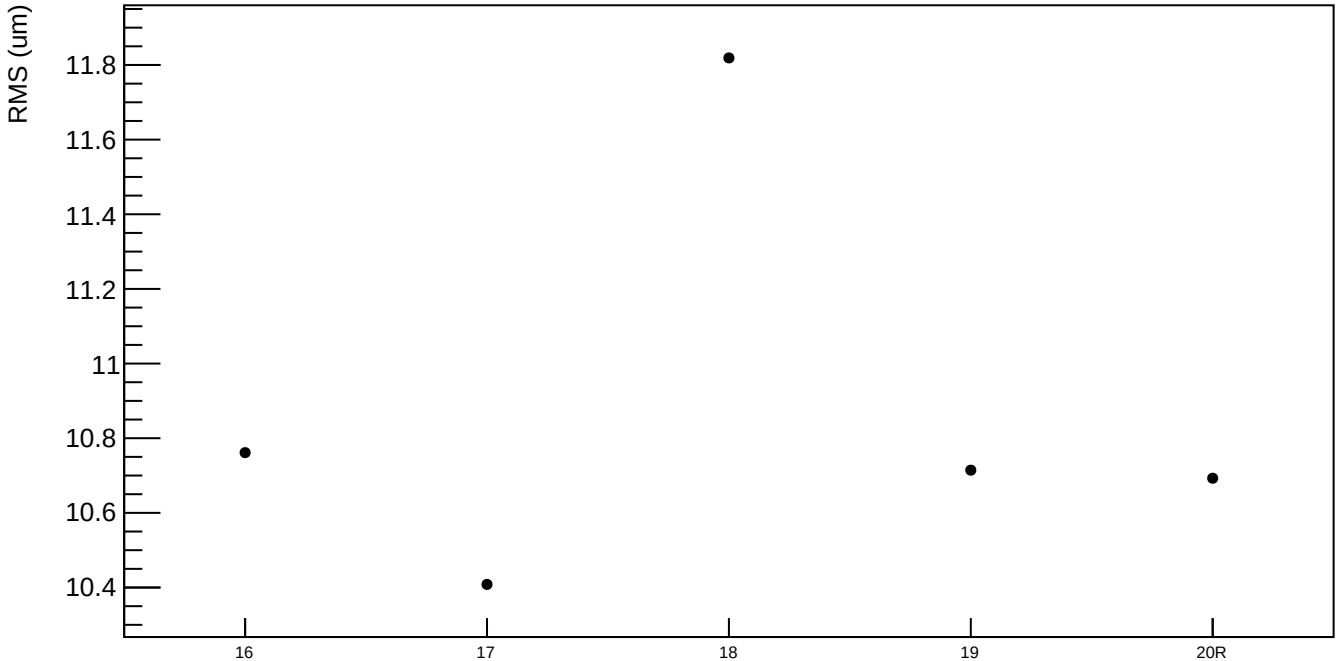
diff_bpm4aX RMS (um)

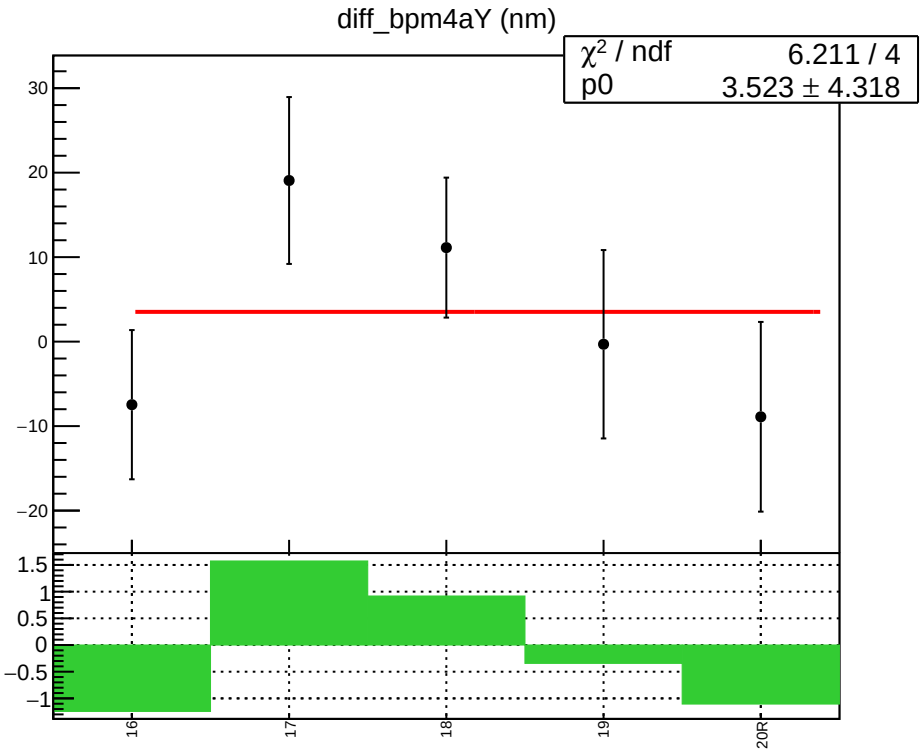


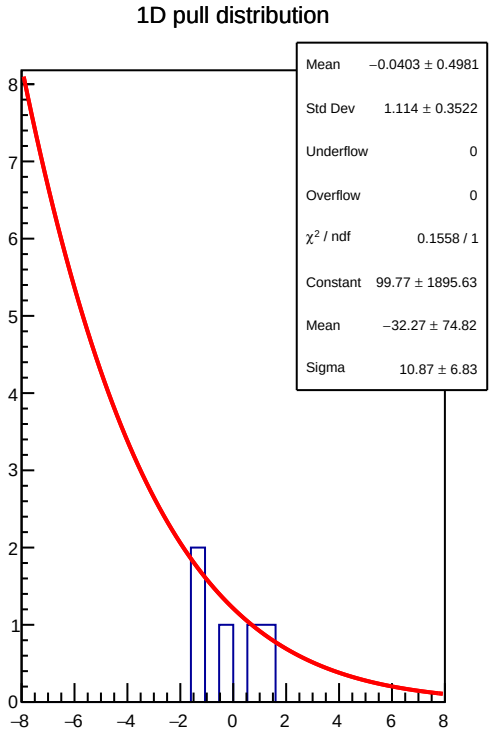

diff_bpm4eX (nm)
χ² / ndf 5.945 / 4
p0 1.239 ± 6.818
40
30
20
10
0
−10
−20
−30
1
0.5
0
−0.5
−1
−1.5
16
17
18
19
20R


1D pull distribution
Mean 0.04044 ± 0.4873
Std Dev 1.09 ± 0.3446
Underflow 0
Overflow 0
χ² / ndf 0.06019 / 1
Constant 342.3 ± 4436.1
Mean 36.68 ± 43.66
Sigma 10.97 ± 9.96
10
8
6
4
2
0
−8
−6
−4
−2
0
2
4
6
8

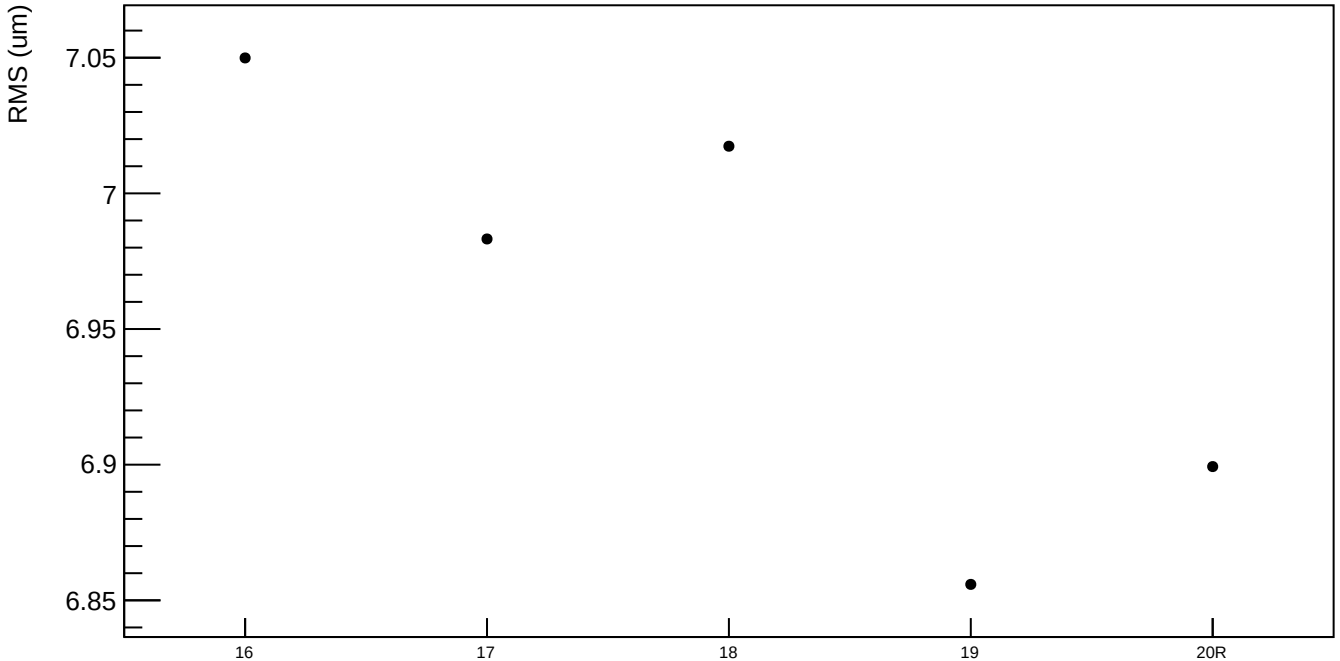
diff_bpm4eX RMS (um)

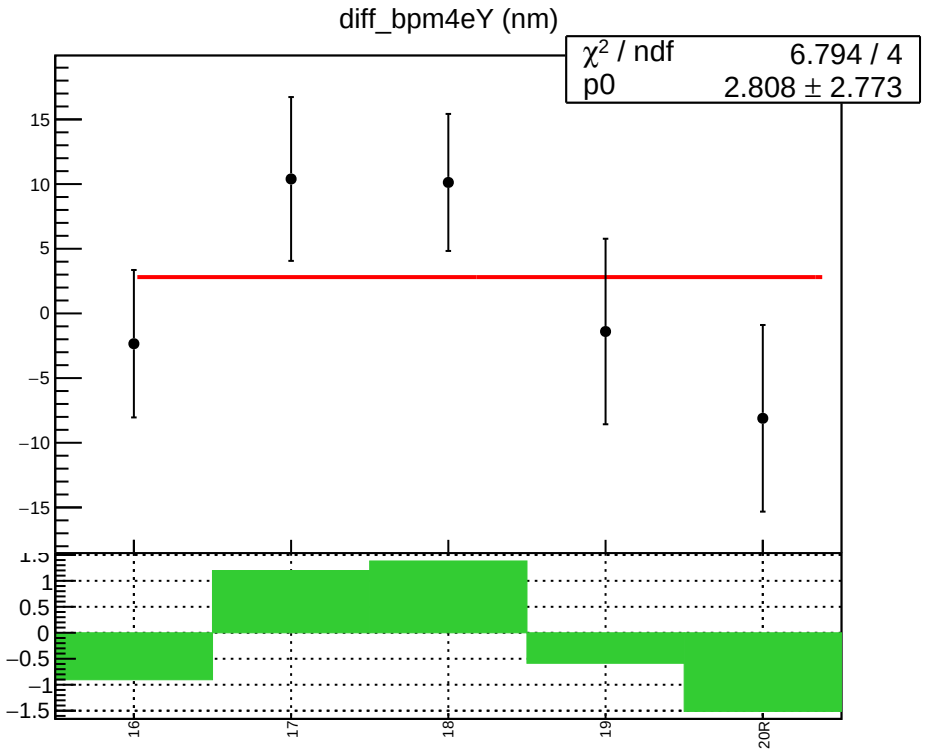


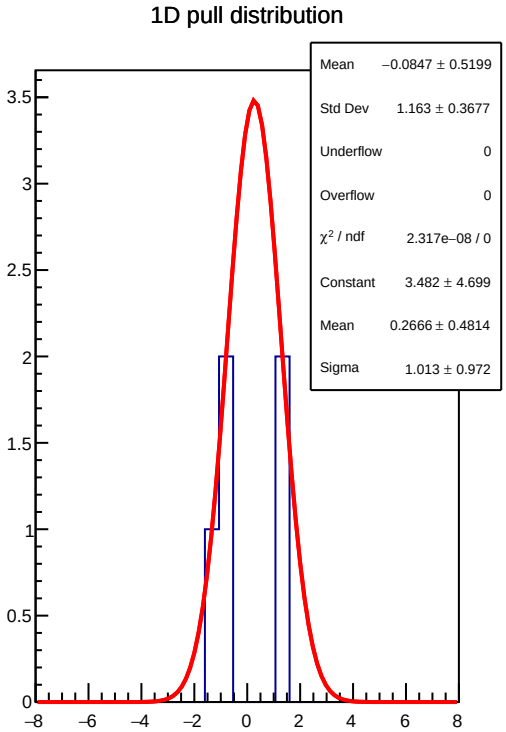

diff_bpm4aY (nm)
χ² / ndf 6.211 / 4
p0 3.523 ± 4.318
30
20
10
0
−10
−20
1.5
1
0.5
0
−0.5
−1
16
17
18
19
20R


1D pull distribution
Mean −0.0403 ± 0.4981
Std Dev 1.114 ± 0.3522
Underflow 0
Overflow 0
χ² / ndf 0.1558 / 1
Constant 99.77 ± 1895.63
Mean −32.27 ± 74.82
Sigma 10.87 ± 6.83
8
7
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

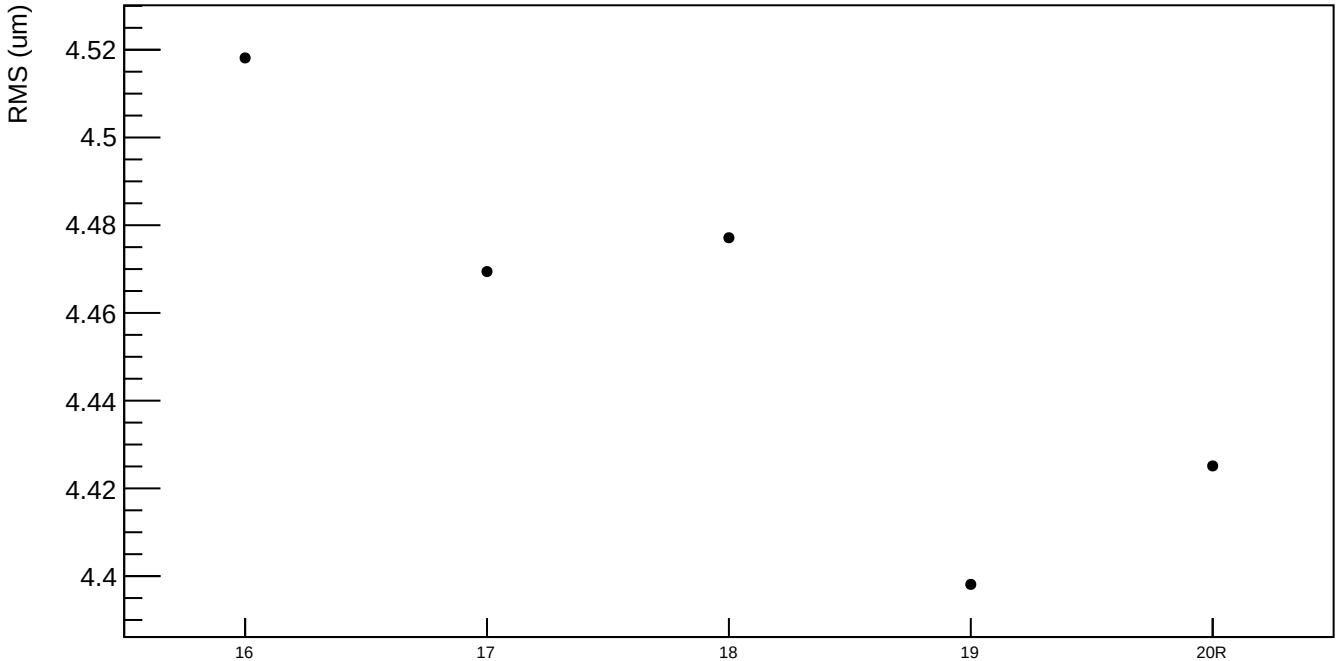
diff_bpm4aY RMS (um)

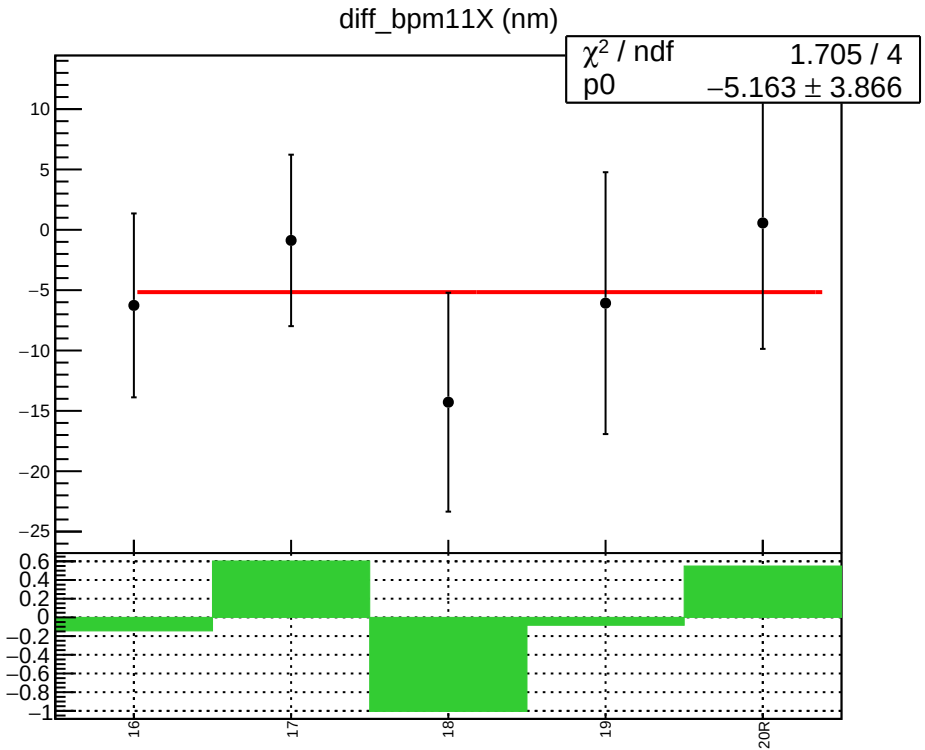


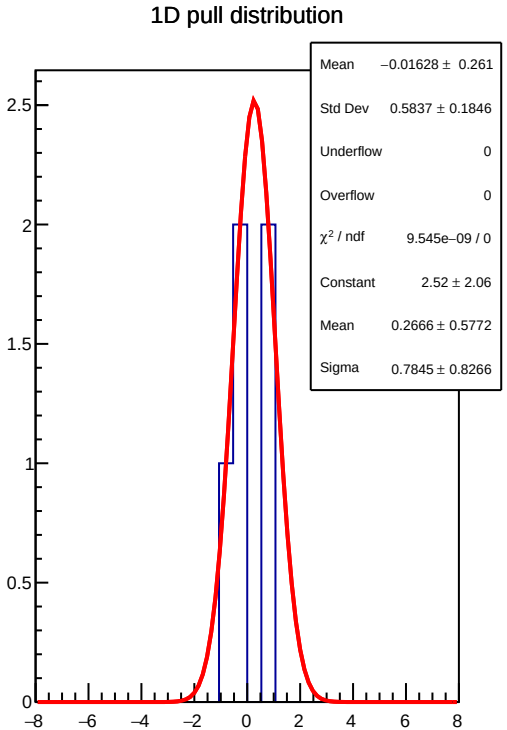

diff_bpm4eY (nm)
χ² / ndf 6.794 / 4
p0 2.808 ± 2.773
15
10
5
0
−5
−10
−15
1.5
1
0.5
0
−0.5
−1
−1.5
16
17
18
19
20R


1D pull distribution
Mean −0.0847 ± 0.5199
Std Dev 1.163 ± 0.3677
Underflow 0
Overflow 0
χ² / ndf 2.317e−08 / 0
Constant 3.482 ± 4.699
Mean 0.2666 ± 0.4814
Sigma 1.013 ± 0.972
3.5
3
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

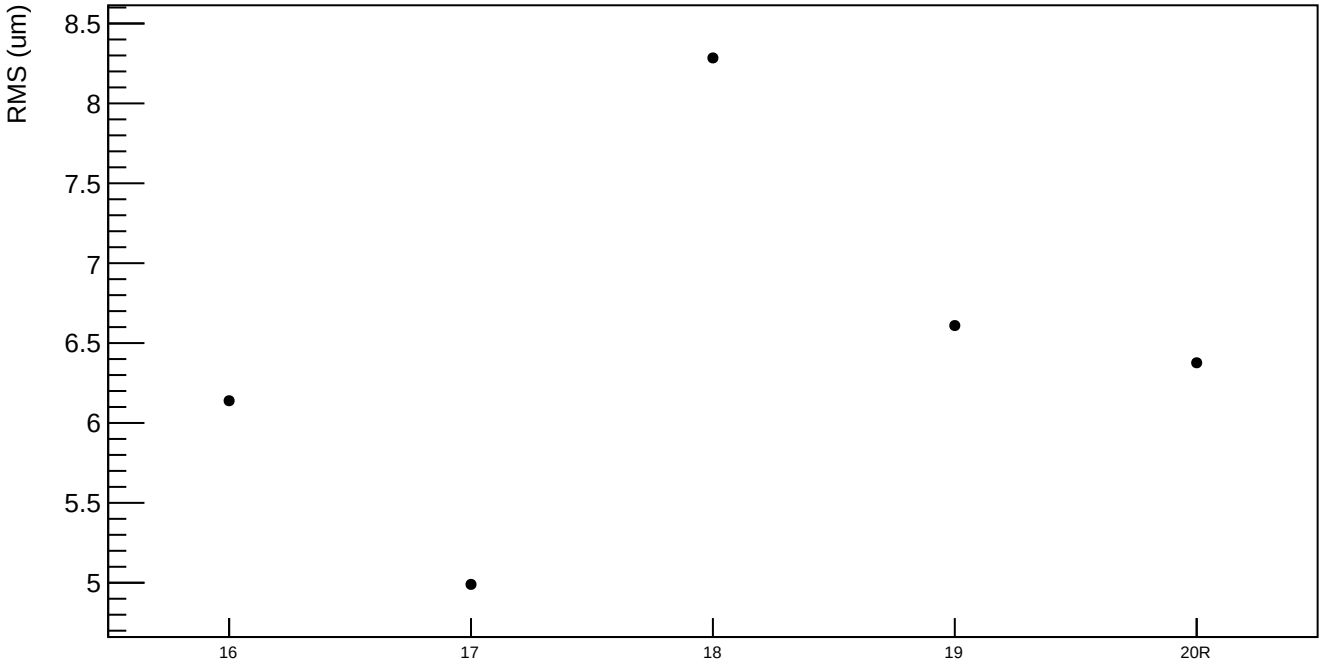
diff_bpm4eY RMS (um)

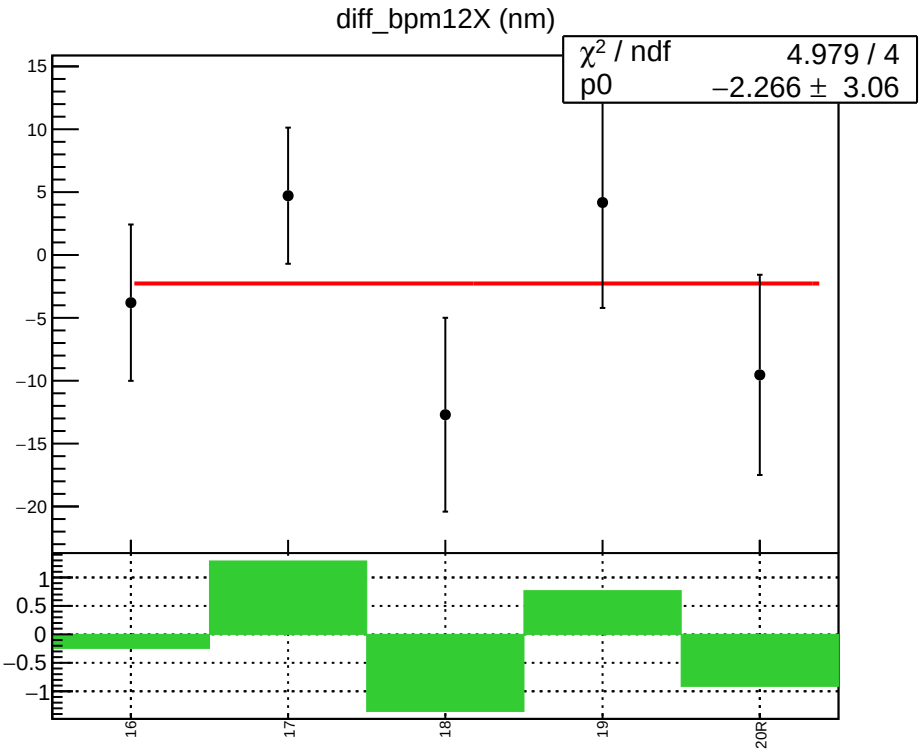


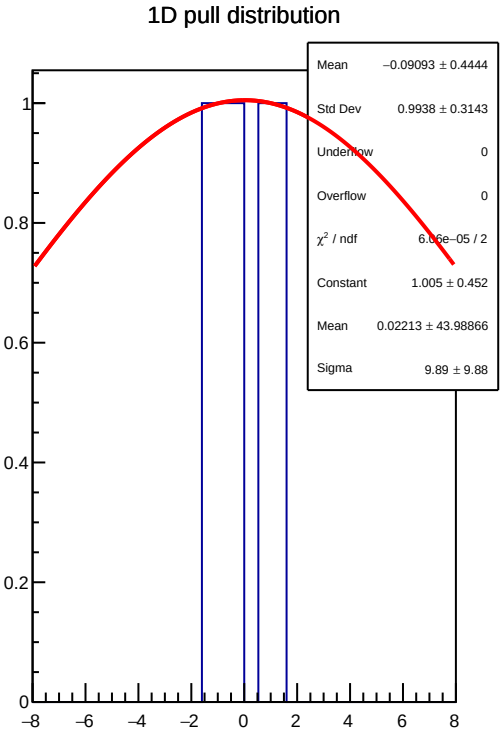

diff_bpm11X (nm)
χ² / ndf 1.705 / 4
p0 −5.163 ± 3.866
10
5
0
−5
−10
−15
−20
−25
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
16
17
18
19
20R


1D pull distribution
Mean −0.01628 ± 0.261
Std Dev 0.5837 ± 0.1846
Underflow 0
Overflow 0
χ² / ndf 9.545e−09 / 0
Constant 2.52 ± 2.06
Mean 0.2666 ± 0.5772
Sigma 0.7845 ± 0.8266
2.5
2
1.5
1
0.5
0
−8
−6
−4
−2
0
2
4
6
8

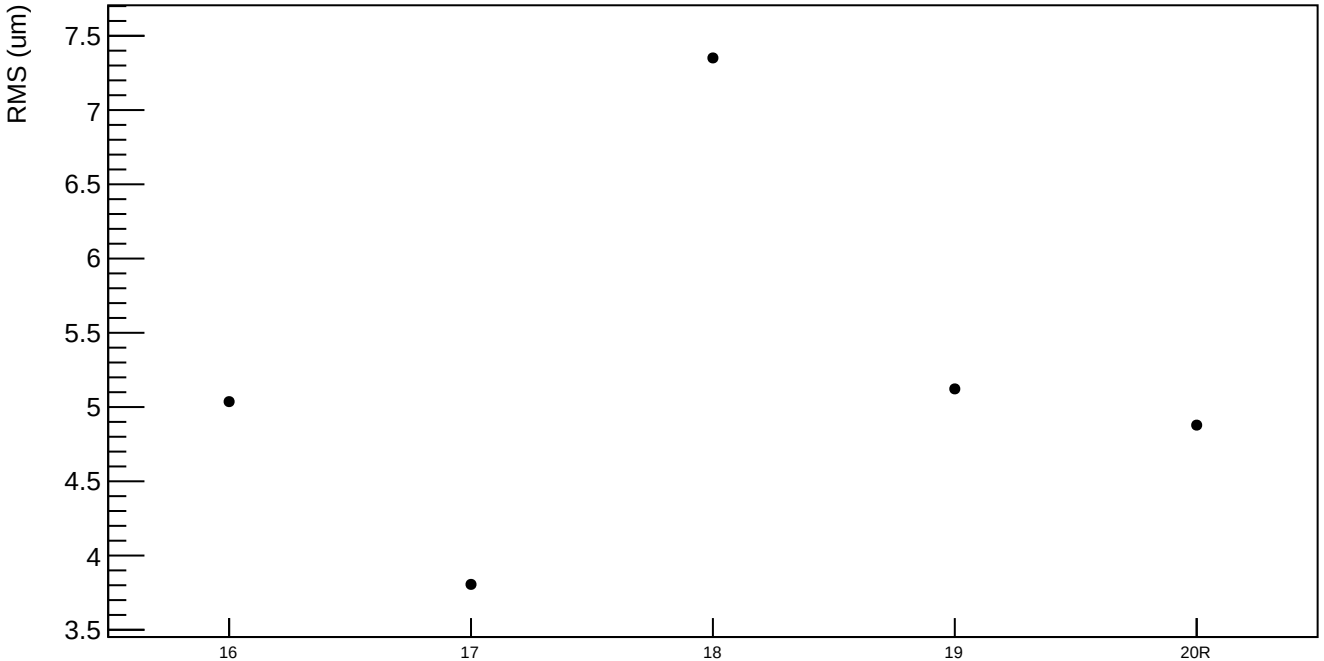
diff_bpm11X RMS (um)

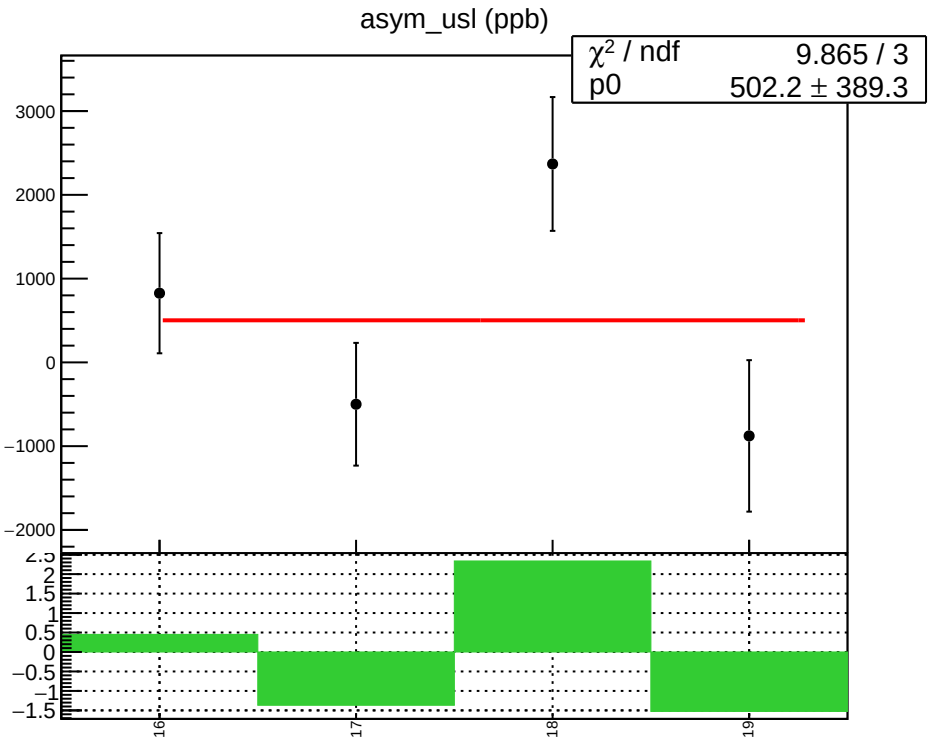


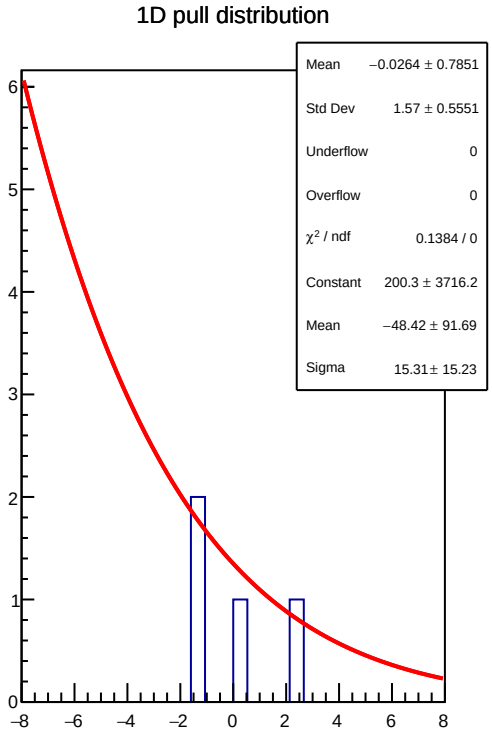

diff_bpm12X (nm)
χ² / ndf 4.979 / 4
p0 −2.266 ± 3.06
15
10
5
0
−5
−10
−15
−20
1
0.5
0
−0.5
−1
16
17
18
19
20R


1D pull distribution
Mean −0.09093 ± 0.4444
Std Dev 0.9938 ± 0.3143
Underflow 0
Overflow 0
χ² / ndf 6.06e−05 / 2
Constant 1.005 ± 0.452
Mean 0.02213 ± 43.98866
Sigma 9.89 ± 9.88
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

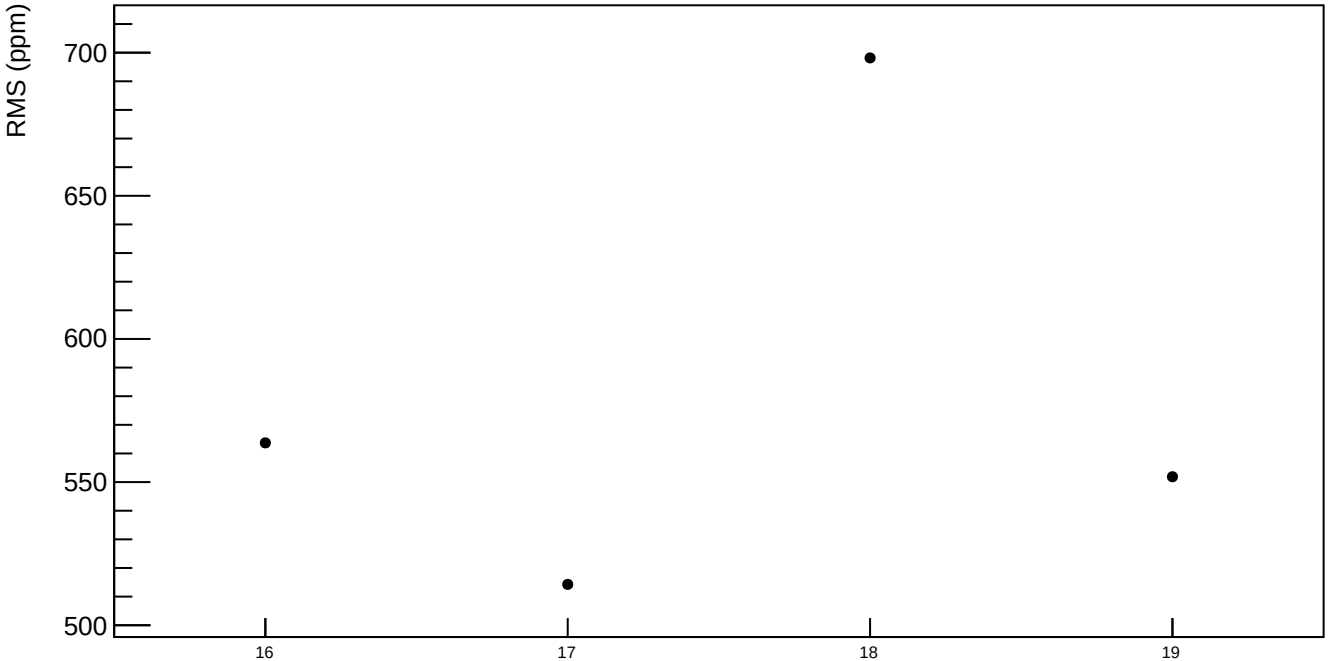
diff_bpm12X RMS (um)

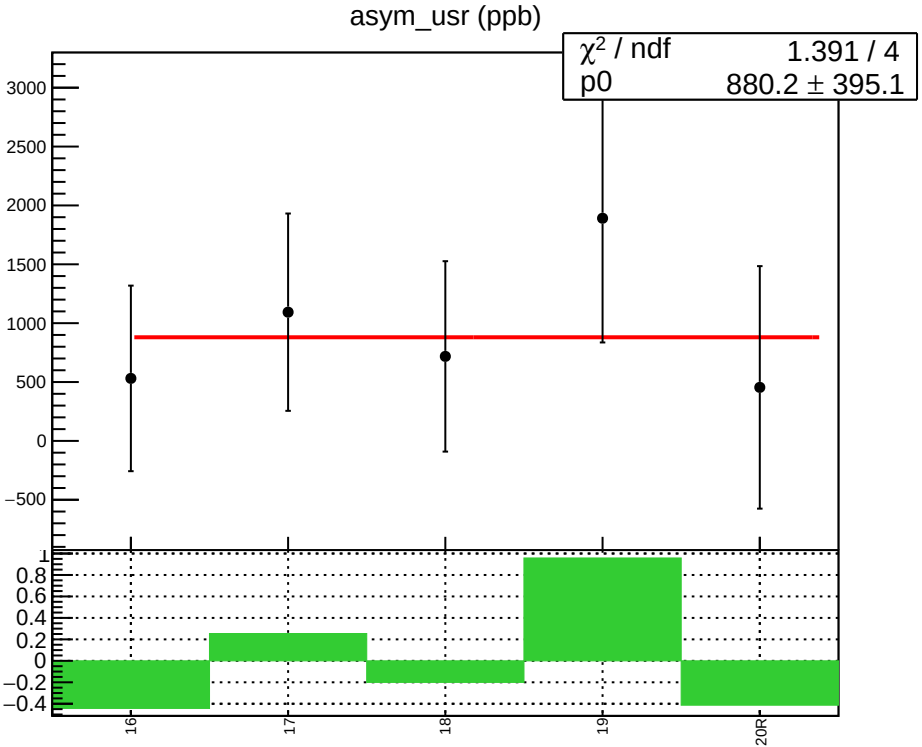


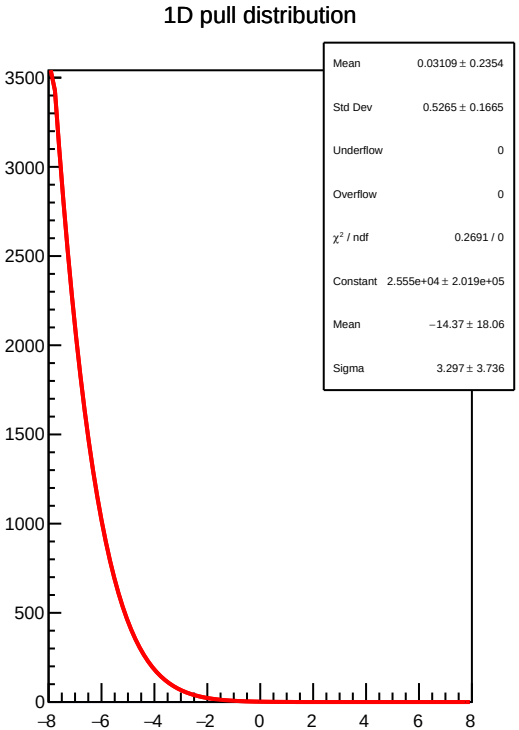

asym_usl (ppb)
χ^2 / ndf 9.865 / 3
p0 502.2 ± 389.3
3000
2000
1000
0
−1000
−2000
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
16
17
18
19

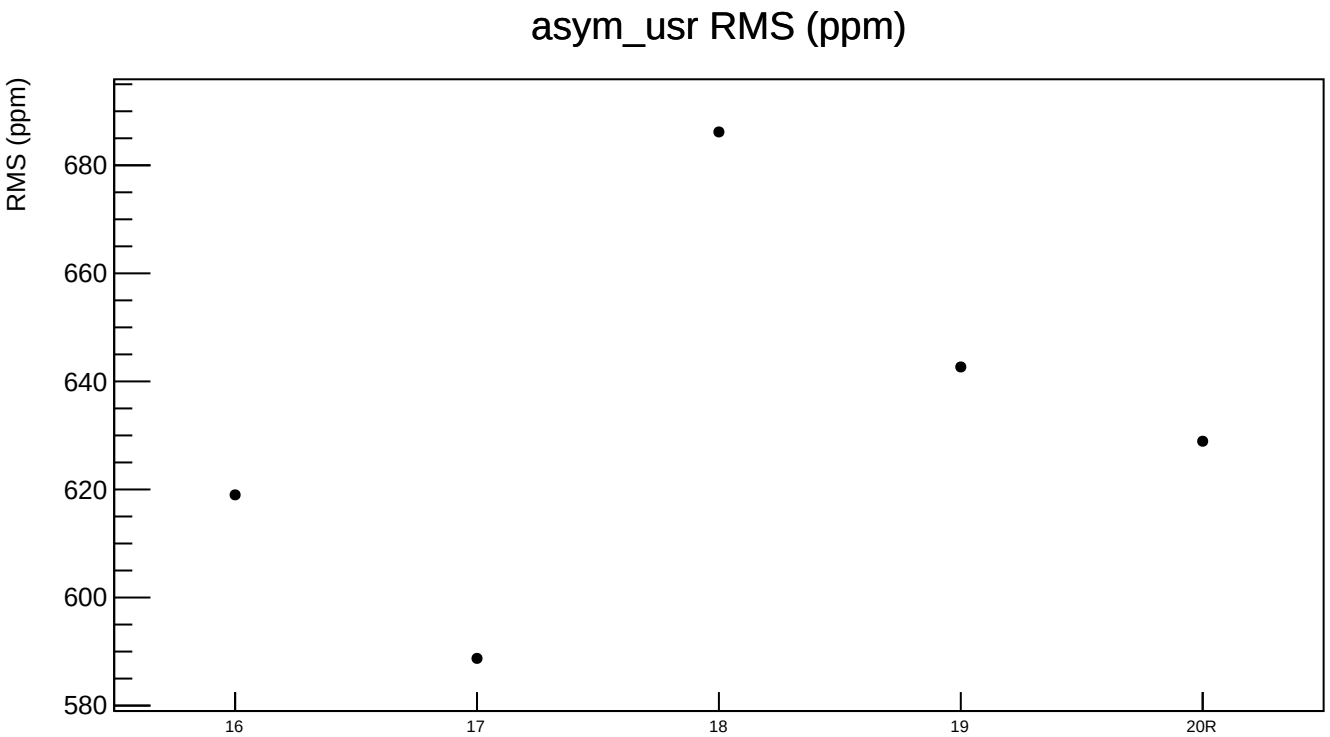

1D pull distribution
Mean −0.0264 ± 0.7851
Std Dev 1.57 ± 0.5551
Underflow 0
Overflow 0
χ^2 / ndf 0.1384 / 0
Constant 200.3 ± 3716.2
Mean −48.42 ± 91.69
Sigma 15.31± 15.23
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

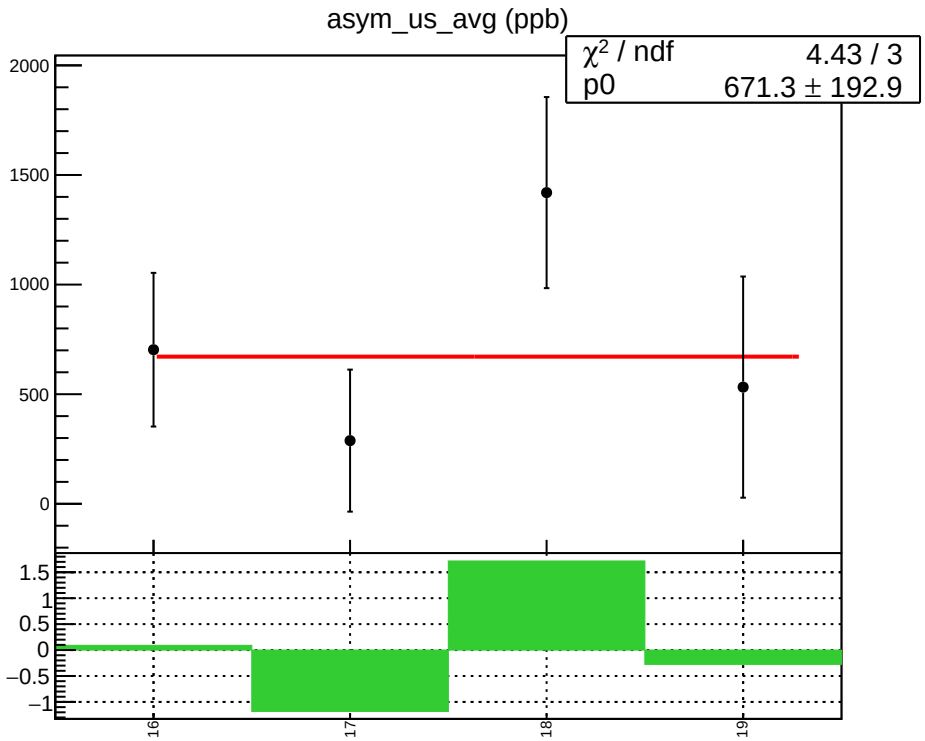
asym_usl RMS (ppm)

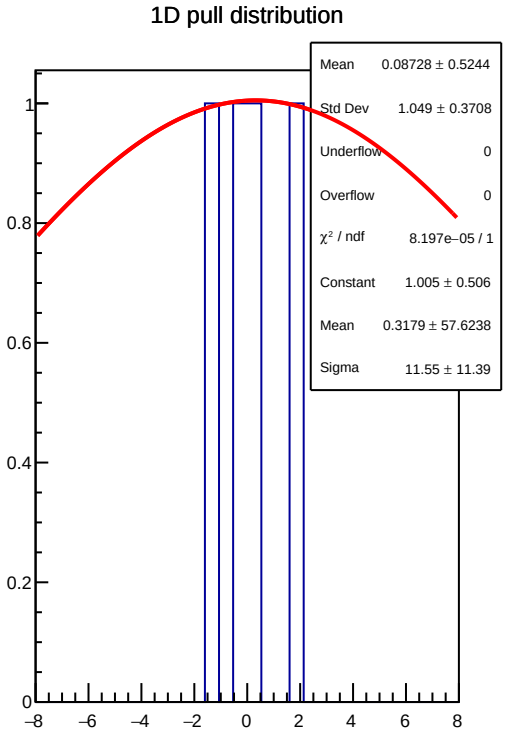


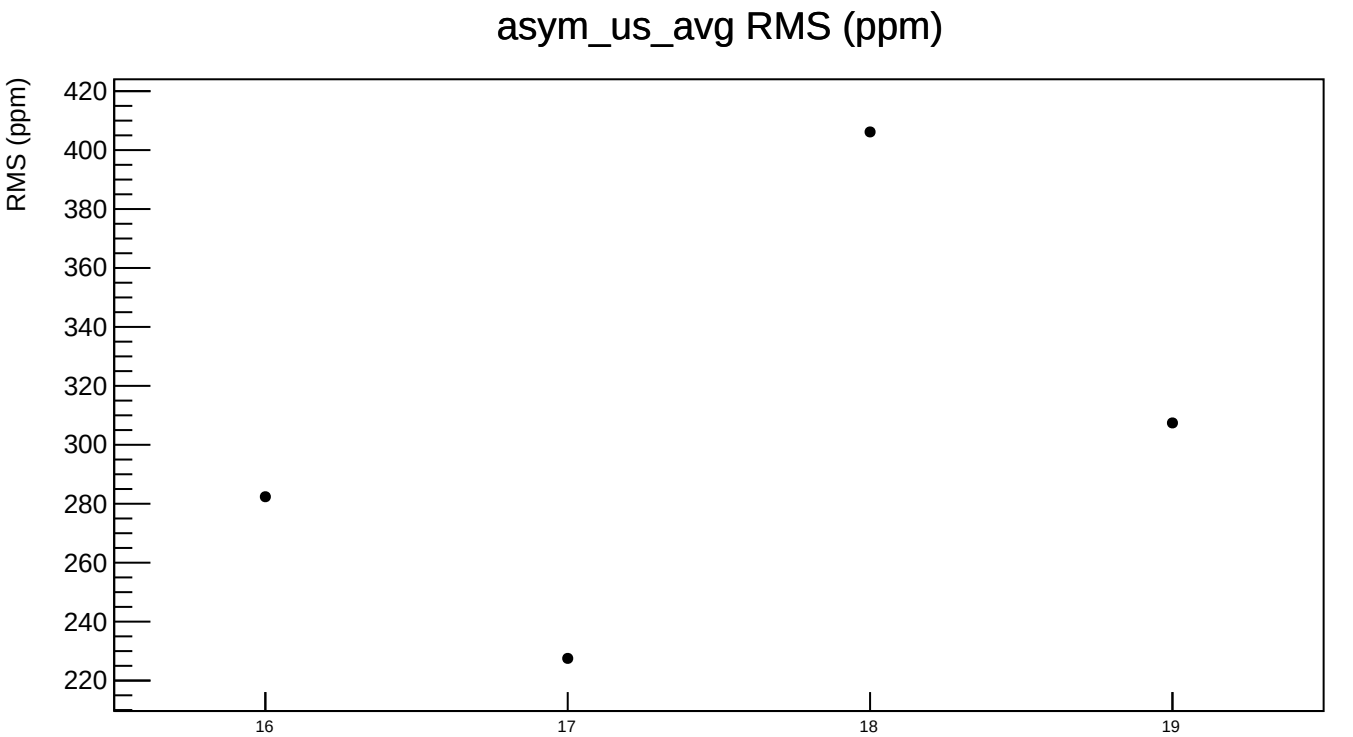

asym_usr (ppb)
χ² / ndf 1.391 / 4
p0 880.2 ± 395.1
3000
2500
2000
1500
1000
500
0
−500
0.8
0.6
0.4
0.2
0
−0.2
−0.4
16
17
18
19
20R

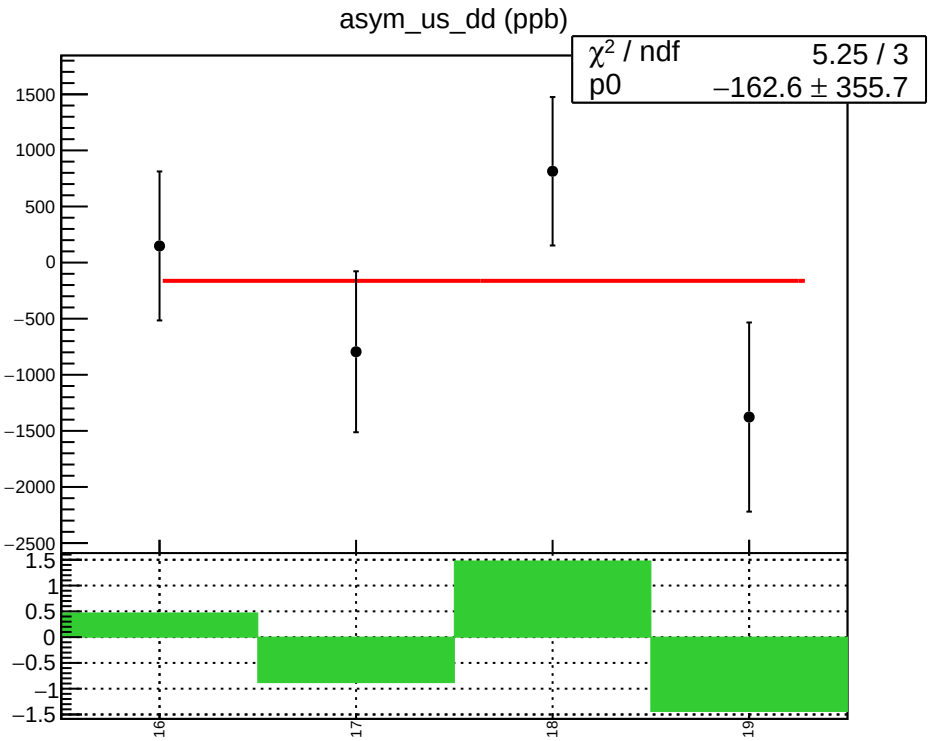

1D pull distribution
Mean 0.03109 ± 0.2354
Std Dev 0.5265 ± 0.1665
Underflow 0
Overflow 0
χ² / ndf 0.2691 / 0
Constant 2.555e+04 ± 2.019e+05
Mean −14.37 ± 18.06
Sigma 3.297 ± 3.736
3500
3000
2500
2000
1500
1000
500
0
−8
−6
−4
−2
0
2
4
6
8

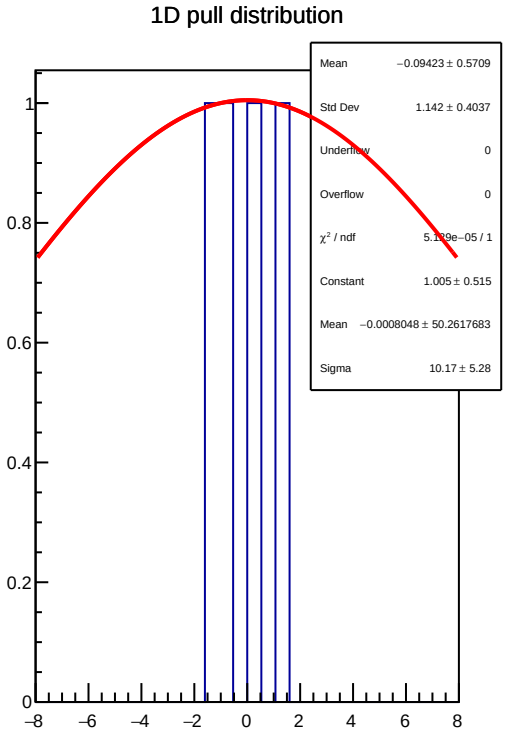

asym_usr RMS (ppm)
RMS (ppm)
680
660
640
620
600
580
16
17
18
19
20R

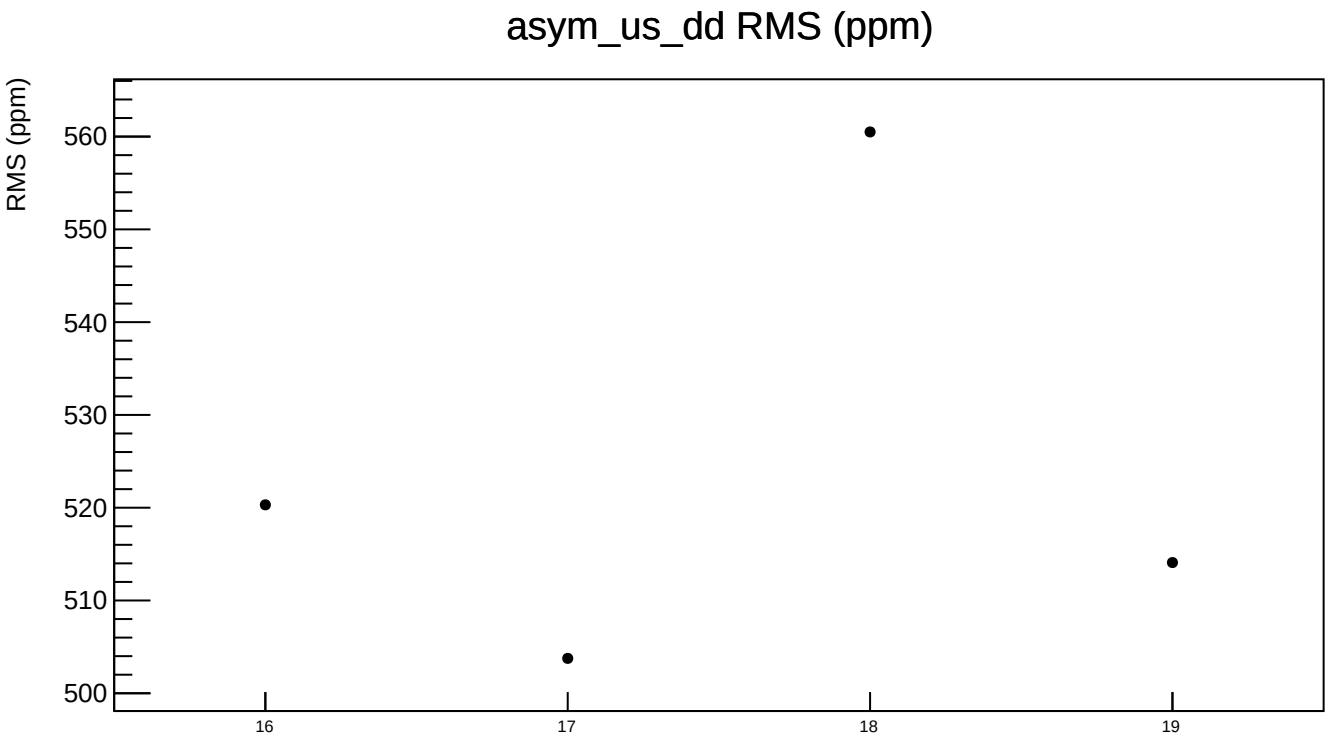

asym_us_avg (ppb)
χ² / ndf 4.43 / 3
p0 671.3 ± 192.9
2000
1500
1000
500
0
1.5
1
0.5
0
−0.5
−1
16
17
18
19

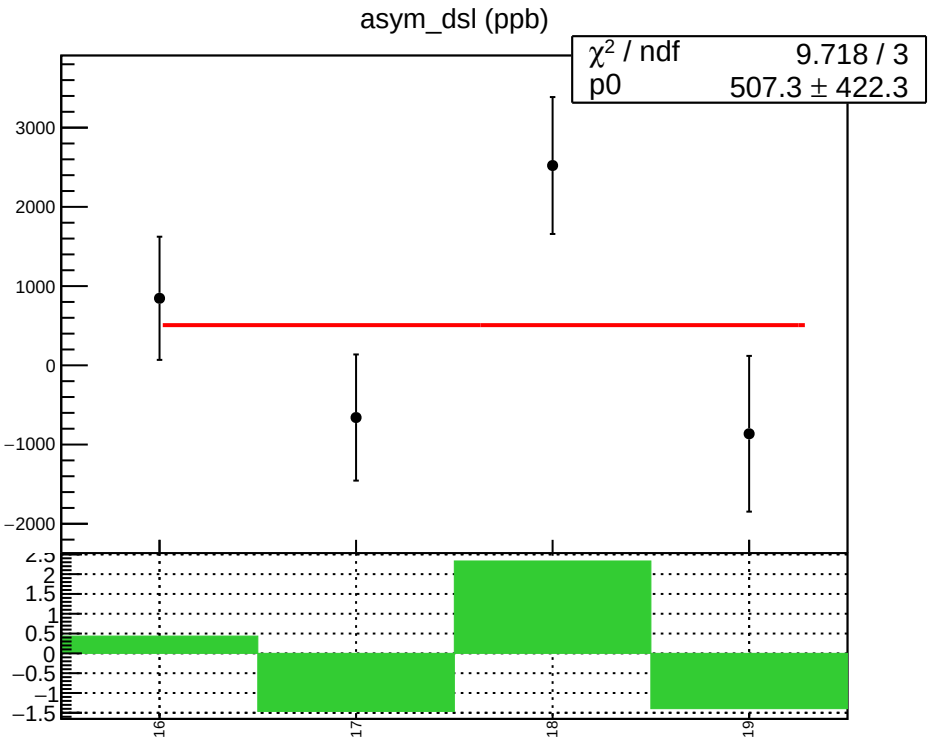

1D pull distribution
Mean 0.08728 ± 0.5244
Std Dev 1.049 ± 0.3708
Underflow 0
Overflow 0
χ² / ndf 8.197e−05 / 1
Constant 1.005 ± 0.506
Mean 0.3179 ± 57.6238
Sigma 11.55 ± 11.39
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

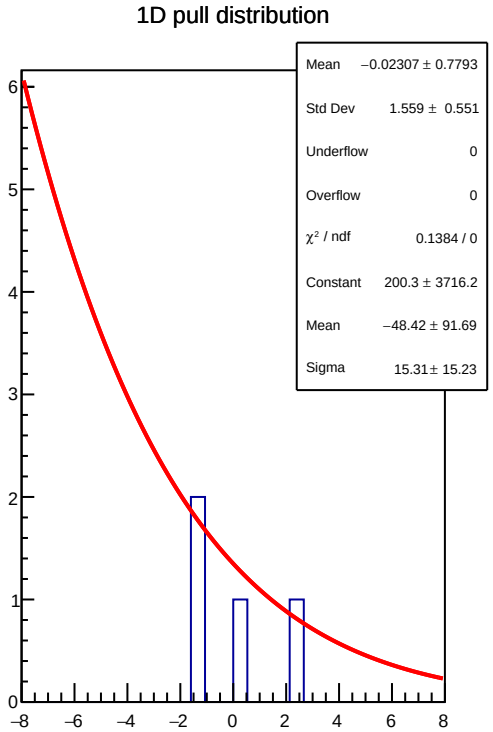

asym_us_avg RMS (ppm)
RMS (ppm)
420
400
380
360
340
320
300
280
260
240
220
16
17
18
19

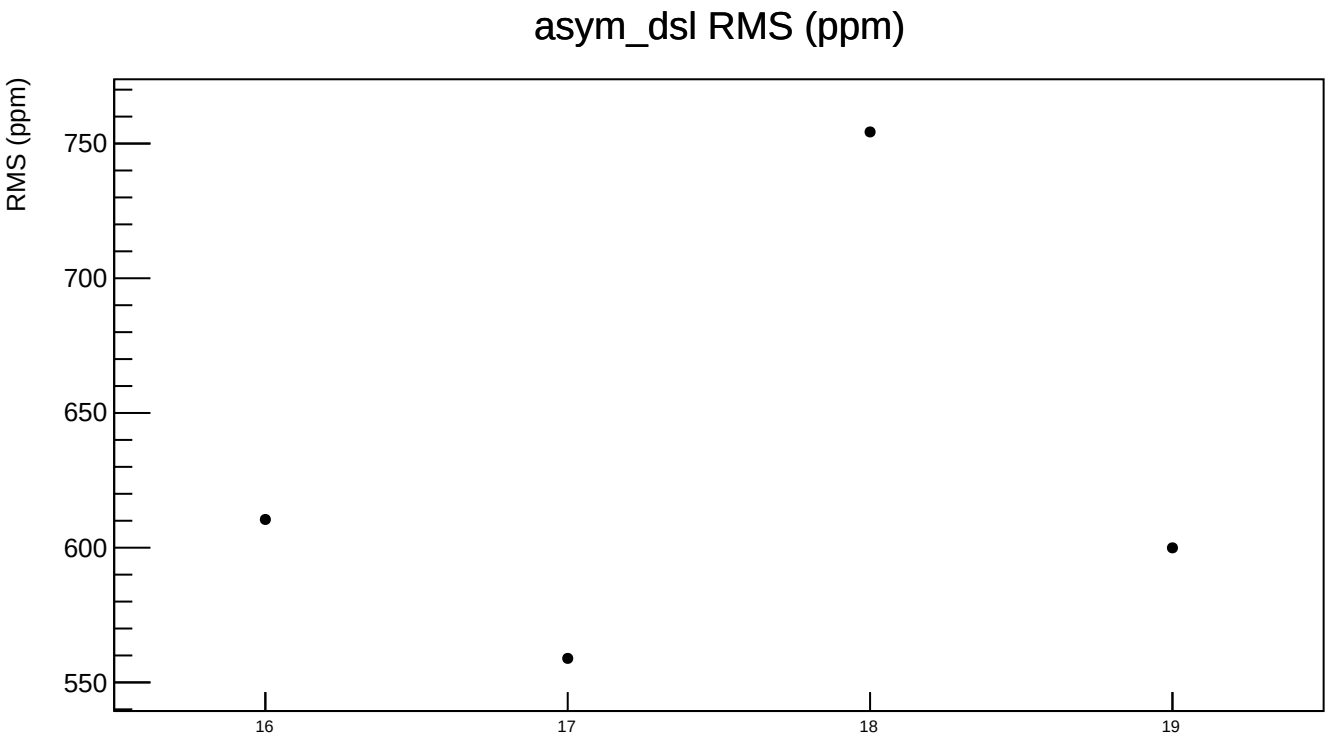

asym_us_dd (ppb)
χ² / ndf 5.25 / 3
p0 −162.6 ± 355.7
1500
1000
500
0
−500
−1000
−1500
−2000
−2500
1.5
1
0.5
0
−0.5
−1
−1.5
16
17
18
19

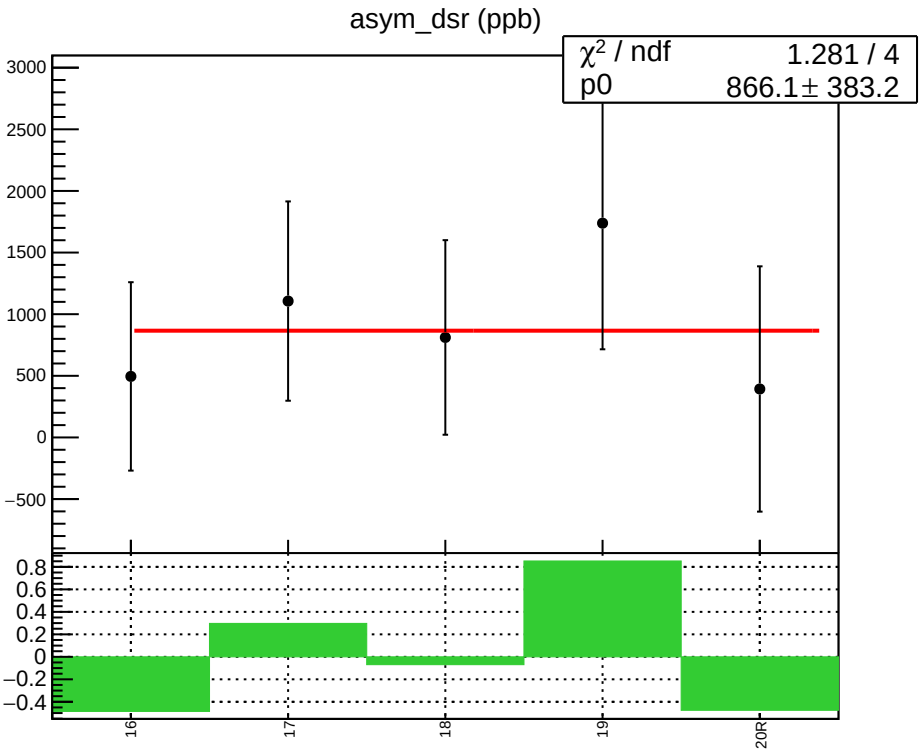

1D pull distribution
Mean −0.09423 ± 0.5709
Std Dev 1.142 ± 0.4037
Underflow 0
Overflow 0
χ² / ndf 5.179e−05 / 1
Constant 1.005 ± 0.515
Mean −0.0008048 ± 50.2617683
Sigma 10.17 ± 5.28
1
0.8
0.6
0.4
0.2
0
−8
−6
−4
−2
0
2
4
6
8

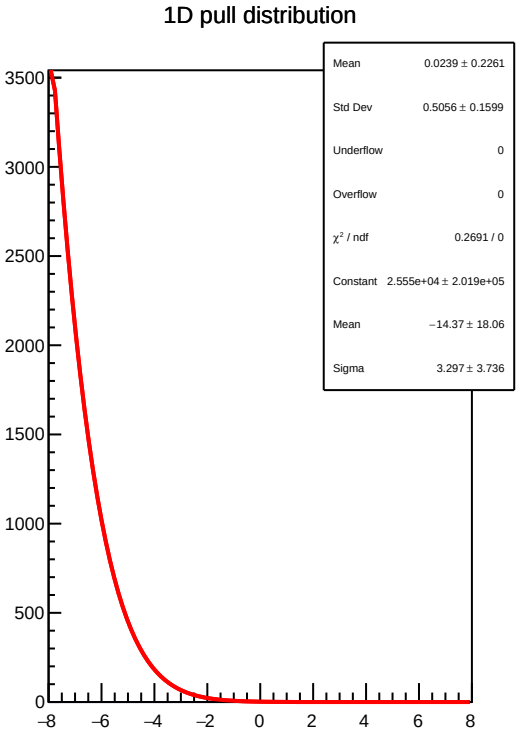

asym_us_dd RMS (ppm)
RMS (ppm)
560
550
540
530
520
510
500
16
17
18
19

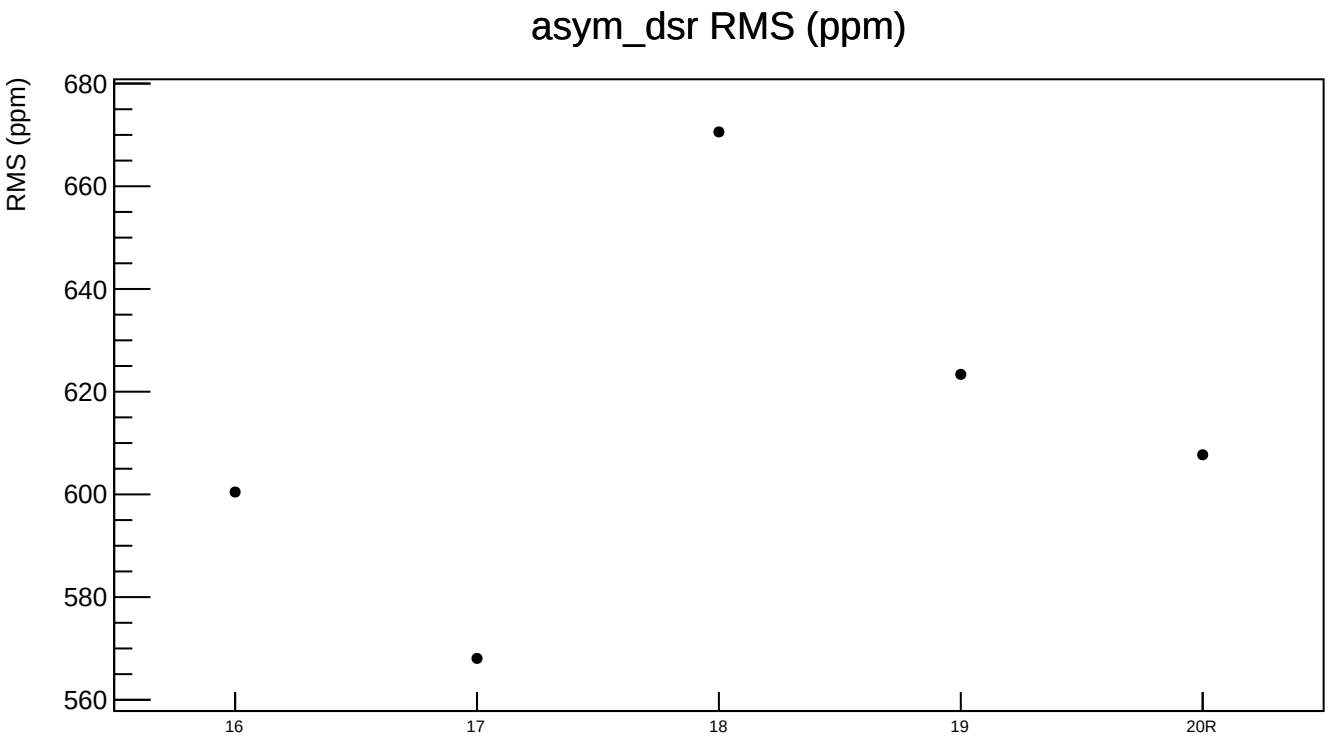

asym_dsl (ppb)
χ² / ndf 9.718 / 3
p0 507.3 ± 422.3
3000
2000
1000
0
−1000
−2000
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
16
17
18
19

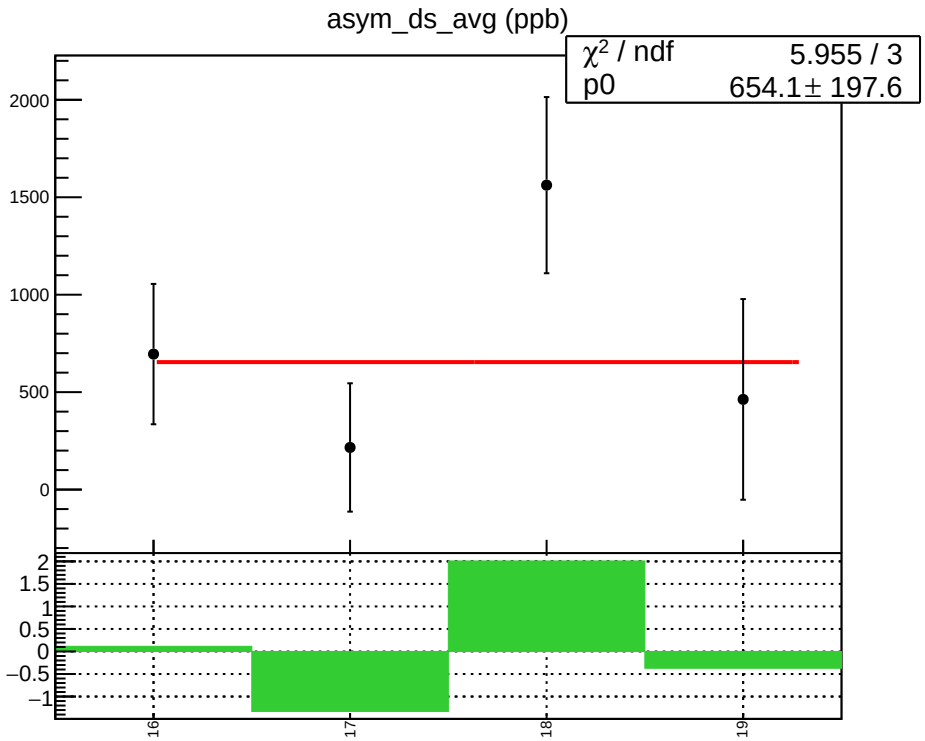

1D pull distribution
Mean −0.02307 ± 0.7793
Std Dev 1.559 ± 0.551
Underflow 0
Overflow 0
χ² / ndf 0.1384 / 0
Constant 200.3 ± 3716.2
Mean −48.42 ± 91.69
Sigma 15.31 ± 15.23
6
5
4
3
2
1
0
−8
−6
−4
−2
0
2
4
6
8

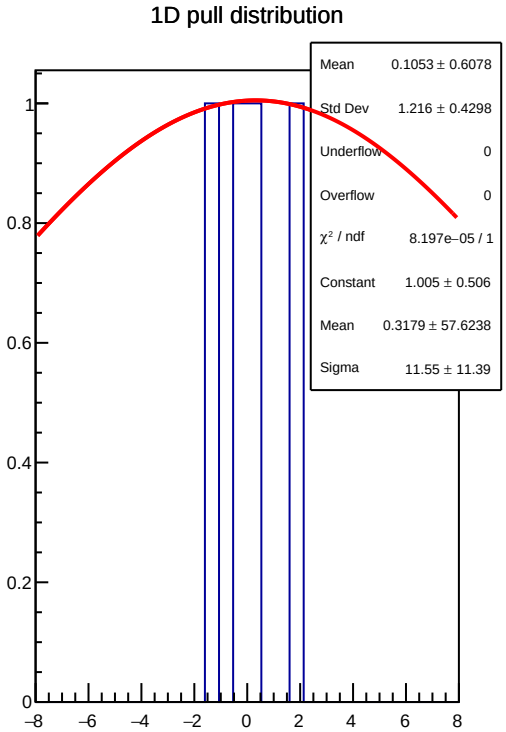

asym_dsl RMS (ppm)
RMS (ppm)
750
700
650
600
550
16
17
18
19

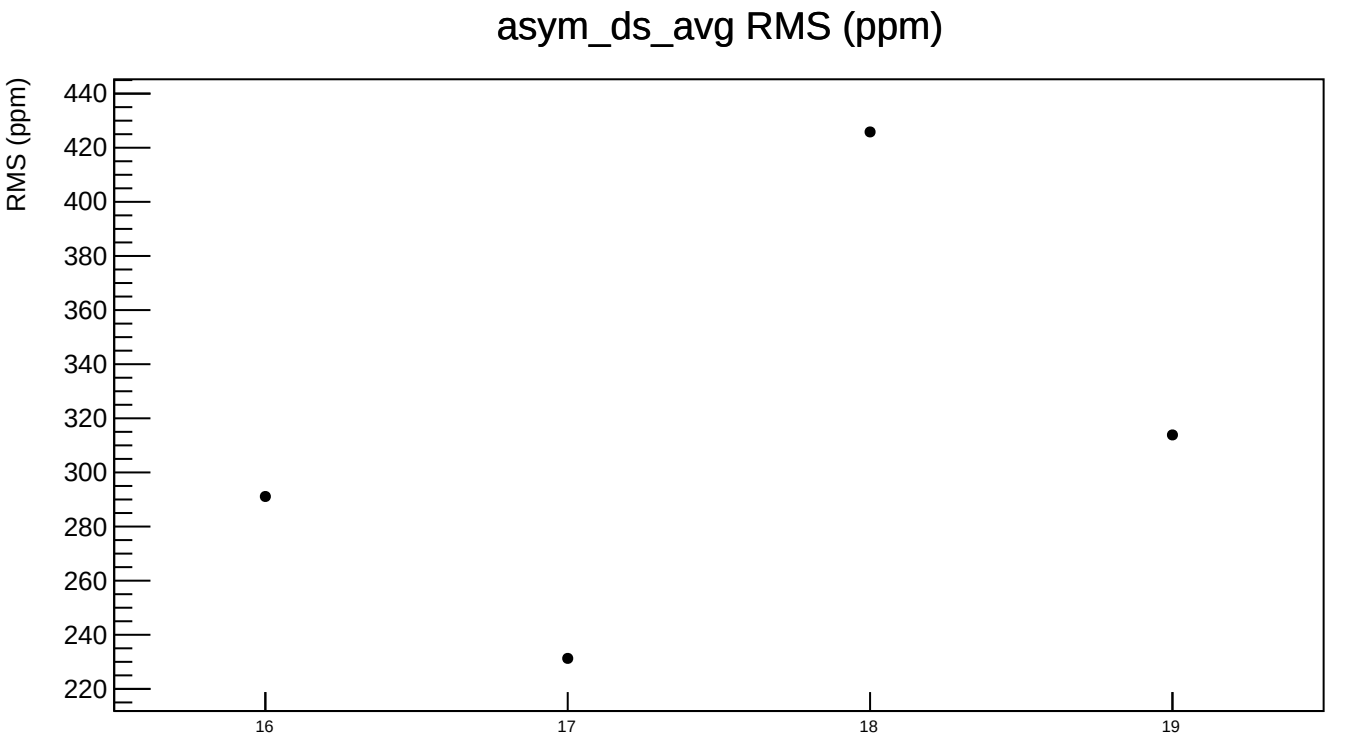

asym_dsr (ppb)
χ² / ndf 1.281 / 4
p0 866.1 ± 383.2
3000
2500
2000
1500
1000
500
0
−500
0.8
0.6
0.4
0.2
0
−0.2
−0.4
16
17
18
19
20R

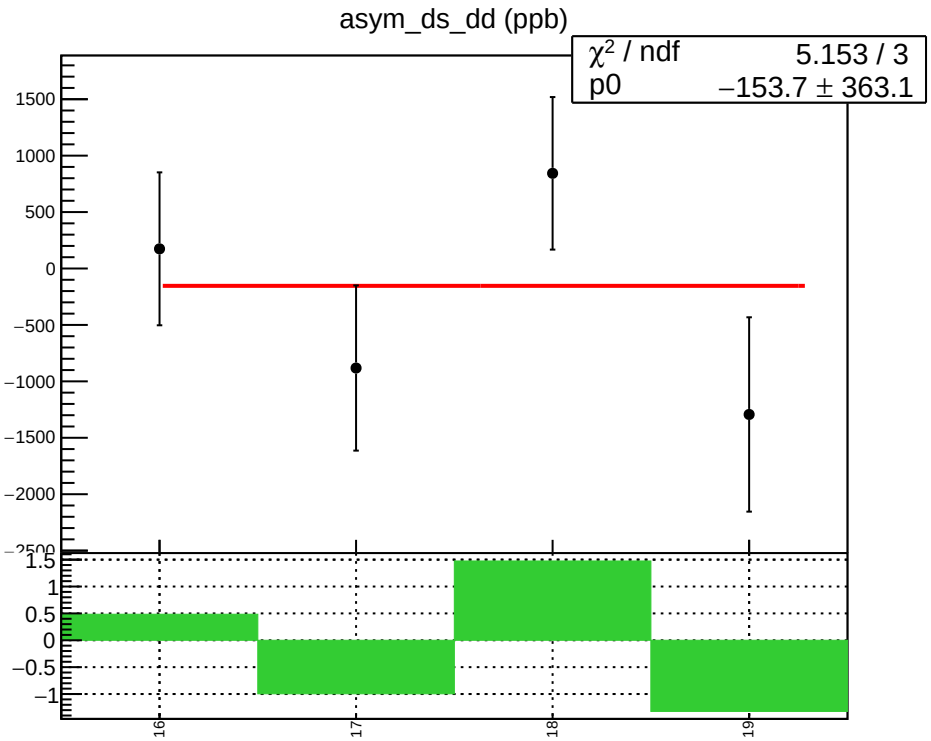

1D pull distribution
Mean 0.0239 ± 0.2261
Std Dev 0.5056 ± 0.1599
Underflow 0
Overflow 0
χ² / ndf 0.2691 / 0
Constant 2.555e+04 ± 2.019e+05
Mean −14.37 ± 18.06
Sigma 3.297 ± 3.736
3500
3000
2500
2000
1500
1000
500
0
−8
−6
−4
−2
0
2
4
6
8

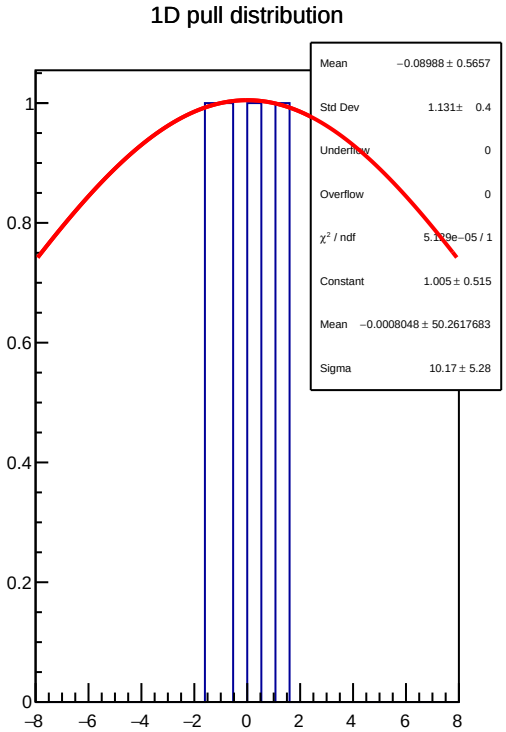

asym_dsr RMS (ppm)
RMS (ppm)
680
660
640
620
600
580
560
16
17
18
19
20R

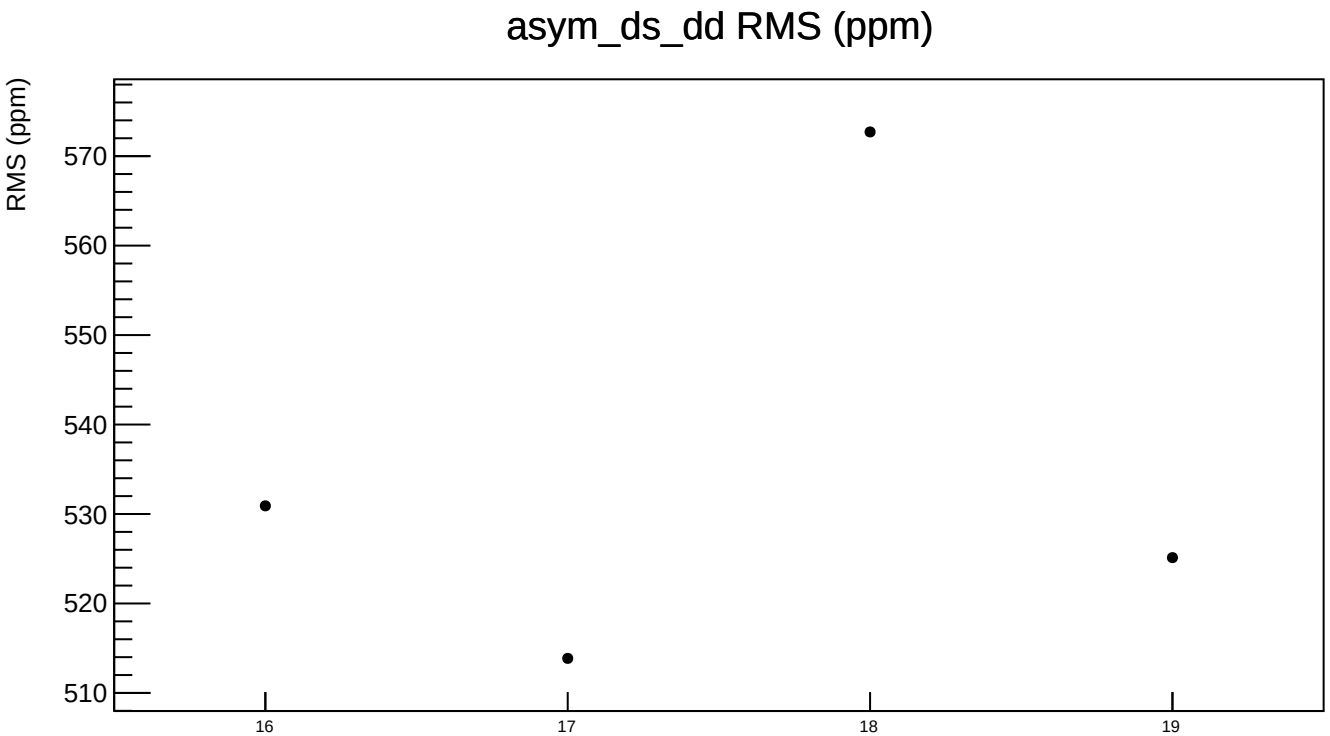

asym_ds_avg (ppb)
χ² / ndf 5.955 / 3
p0 654.1 ± 197.6
2000
1500
1000
500
0
2
1.5
1
0.5
0
−0.5
−1
16
17
18
19


1D pull distribution
Mean 0.1053 ± 0.6078
Std Dev 1.216 ± 0.4298
Underflow 0
Overflow 0
χ² / ndf 8.197e−05 / 1
Constant 1.005 ± 0.506
Mean 0.3179 ± 57.6238
Sigma 11.55 ± 11.39
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)
440
420
400
380
360
340
320
300
280
260
240
220
16
17
18
19


asym_ds_dd (ppb)
χ² / ndf 5.153 / 3
p0 −153.7 ± 363.1
1500
1000
500
0
−500
−1000
−1500
−2000
−2500
1.5
1
0.5
0
−0.5
−1
16
17
18
19


1D pull distribution
Mean −0.08988 ± 0.5657
Std Dev 1.131± 0.4
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


asym_ds_dd RMS (ppm)
RMS (ppm)
570
560
550
540
530
520
510
16
17
18
19