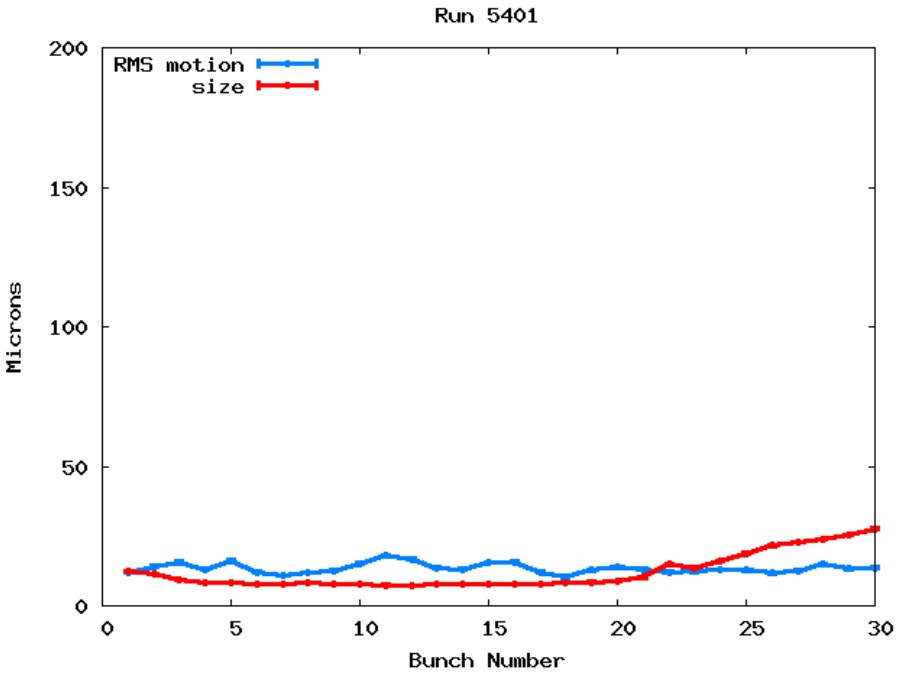
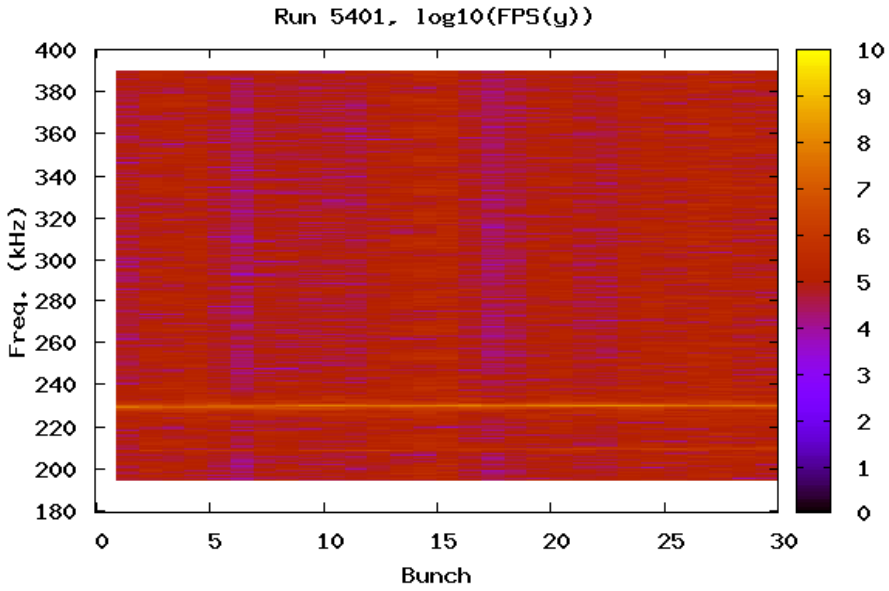
2010.12.21 e-cloud xbsm study data quicklook plots -- JWF

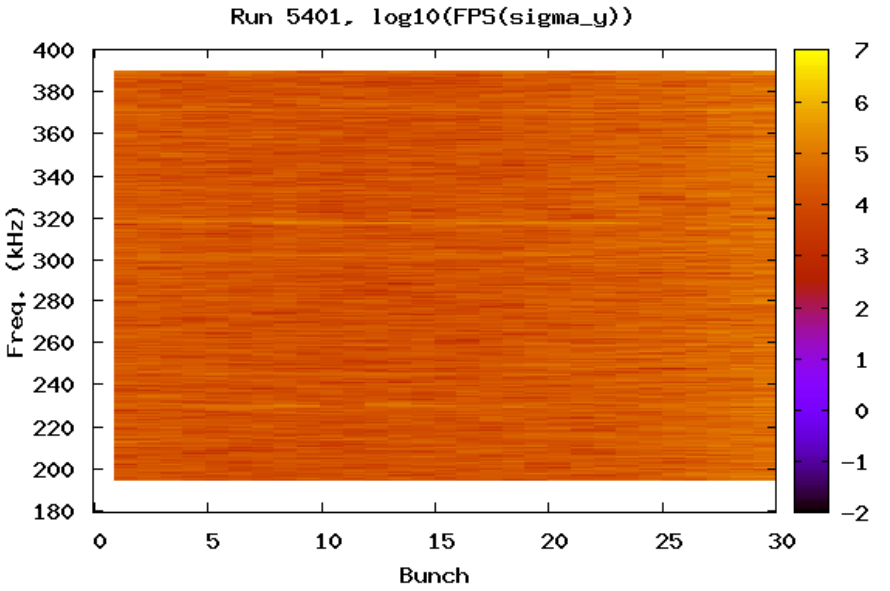
- On shift: MJF, MGB, KGS, JWF
- Notes:
  - 2.085 Gev, 30 bunches, 14 ns spacing, “Big D” optics (beta_y = ~20 m at xBSM source bend)
  - CA, FZP and GAP (Hevimet slit) data taken, 4096 turns each.
    - GAP analysis based on treating GAP as 16 um pinhole, fitting to templates (like CA or FZP).
  - Results are very preliminary
    - **No cuts applied yet – bad events (bad fits, off det. at large dipole amplitude, etc.) are included.**
  - Calibration file: 3C-5-dpp-ByHand-20101220.calib
  - Pedestal run: 5395
  - Data taken:
    - Low, Medium and High Emittance (0.5, 0.75, 1.0 mA/bunch)
      - “Low Emittance” = 20 pm-r (est.)
      - “Medium Emittance” = 52 pm-r (est.)
      - “High Emittance” = 308 pm-r (est.)
    - Low, Normal and High Chromaticity (0.75 mA/bunch)
      - “Normal Chromaticity” = 1.7 V, 1.2 H (nominal, uncalibrated units)
      - “Low V. Chromaticity” = 1.2 V, 1.2 H (nominal, uncalibrated units)
      - “High V. Chromaticity” = 2.2 V, 1.2 H (nominal, uncalibrated units)
      - “Low H. Chromaticity” = 1.7 V, 0.7 H (nominal, uncalibrated units)
    - Normal and High FB (0.75 mA/bunch)
      - “Normal FB” = HFB = VFB = 20%, except at 1.0 mA when VFB = 30-35%. LFB Off.
      - “High FB” = HFB = VFB = 40%. LFB Off.
    - Precursor Bunch inserted 182 ns in front of train (0.75 mA/bunch)
    - Plus a bonus “Super-High Chromaticity” run at 0.5 mA/bunch (by accident)
      - “Super-High Chromaticity” = 5.5 V, 2.9 H (nominal, uncalibrated units)

0.50 mA/bunch
Low Emittance
Norm. Chrom.
Norm. FB
CA
4096 Turns

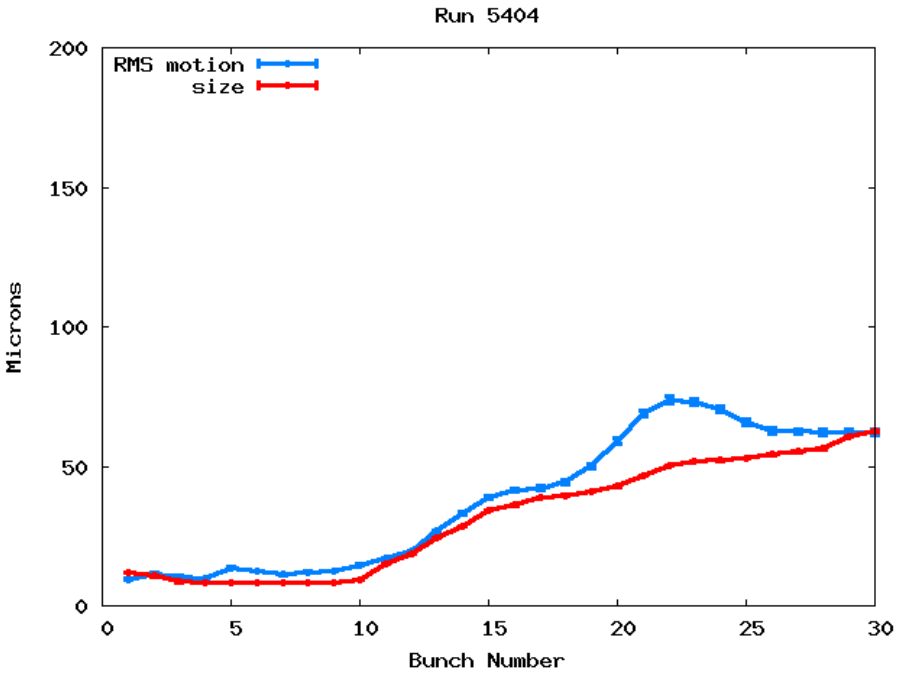


#Run 5401
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 12.3431 0.0406146 12.1038 0.189145
2 11.3928 0.0458374 14.0717 0.219897
3 9.14612 0.0427611 15.797 0.246858
4 8.25256 0.0409934 12.9877 0.202958
5 8.20557 0.0395307 16.1925 0.253038
6 7.65442 0.0382644 12.097 0.189039
7 7.9248 0.0384507 10.9038 0.170392
8 8.17688 0.0396389 11.8846 0.18572
9 7.67029 0.0391244 12.683 0.198196
10 7.6709 0.0381057 15.1891 0.237358
11 7.49695 0.0373758 17.9976 0.281246
12 7.41333 0.0366412 16.6831 0.260705
13 7.55249 0.0378966 13.5862 0.212311
14 7.77466 0.0394023 13.1923 0.206156
15 7.88513 0.0390567 15.5588 0.243137
16 7.677 0.0394444 15.639 0.244389
17 7.86194 0.0393483 12.1447 0.189784
18 8.27515 0.0409041 10.1526 0.158654
19 8.51135 0.0422945 12.8097 0.200176
20 8.96667 0.044537 13.755 0.214948
21 10.1166 0.0482665 13.1452 0.205418
22 15.0085 0.0481964 12.0435 0.188203
23 13.5181 0.0523856 12.3567 0.193097
24 16.2659 0.0530398 13.0087 0.203286
25 18.877 0.0560976 12.7395 0.199079
26 21.5155 0.0596902 11.7344 0.183373
27 22.7222 0.0651461 12.62 0.197212
28 23.8416 0.070489 14.953 0.233669
29 25.415 0.0747345 13.3635 0.20883
30 27.6471 0.0848313 13.7177 0.214365

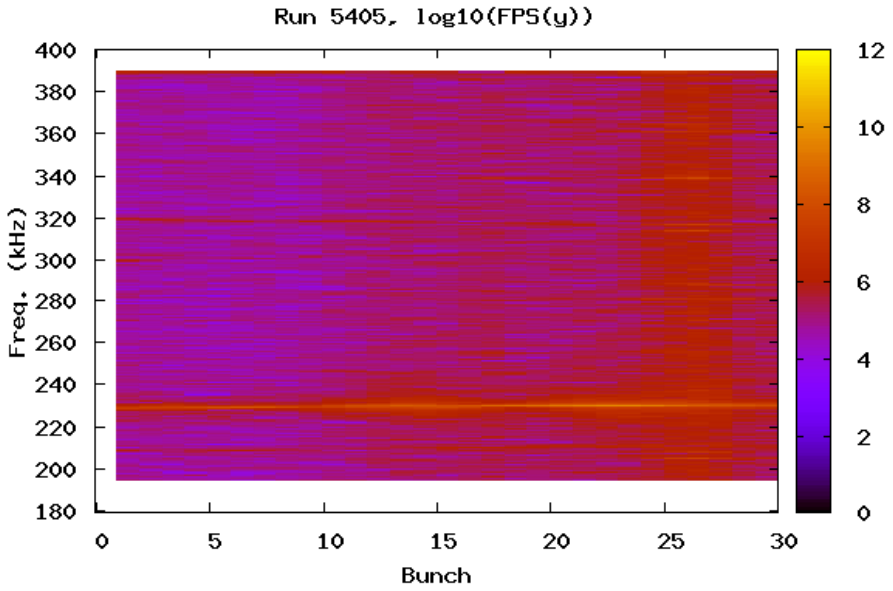


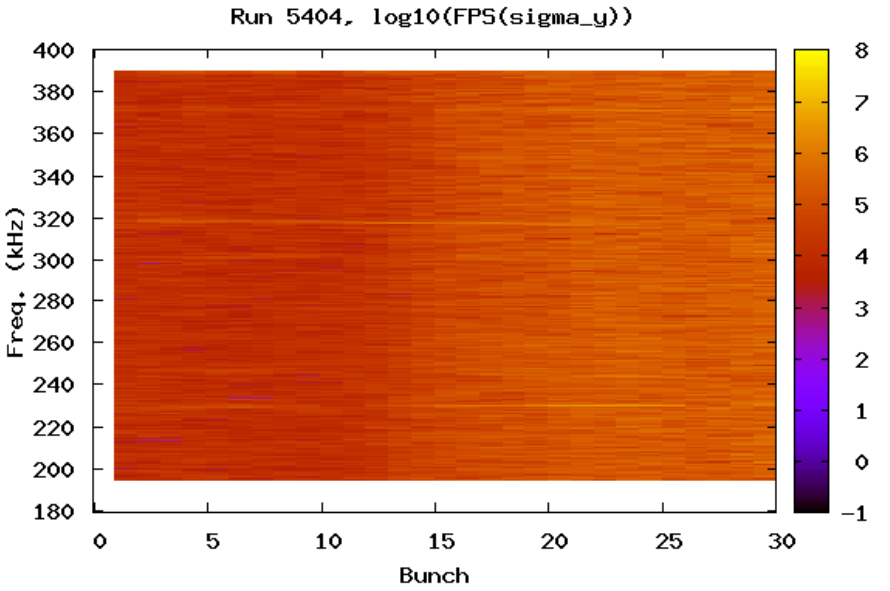


0.75 mA/bunch
Low Emittance
Norm. Chrom.
Norm. FB
CA
4096 Turns

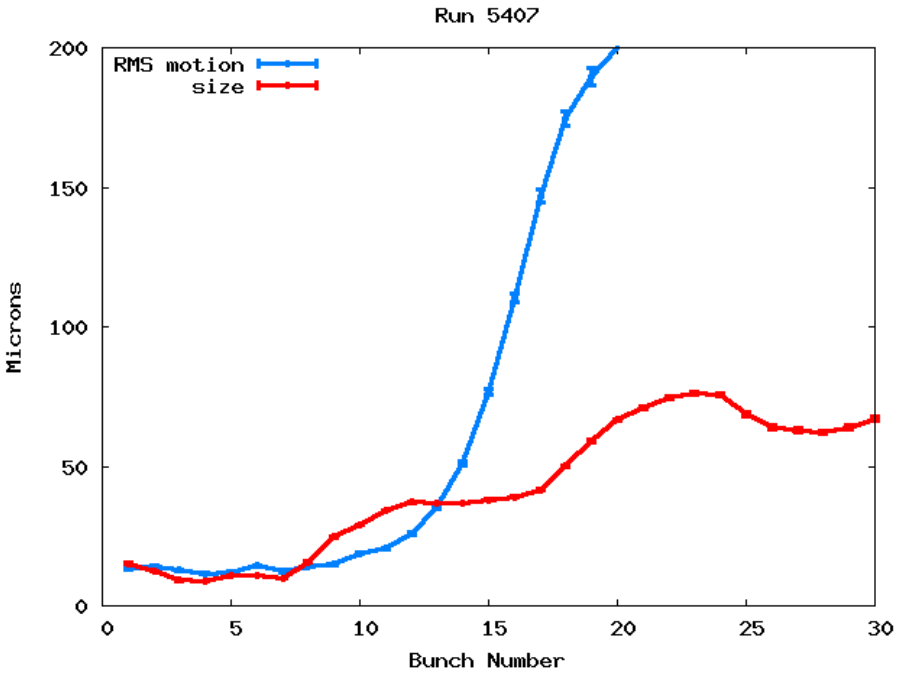


#Run 5404
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 11.7371 0.0349414 9.55012 0.149239
2 10.6415 0.0382739 11.582 0.180992
3 8.57727 0.0372932 10.5523 0.1649
4 8.24646 0.0372901 9.86172 0.154108
5 8.22815 0.0373086 13.6457 0.21324
6 8.20251 0.0364602 12.4456 0.194487
7 8.30261 0.0365381 11.1629 0.174441
8 8.18726 0.0373931 12.1088 0.189224
9 8.27454 0.0378161 12.4595 0.194704
10 9.37683 0.0387921 14.7155 0.229958
11 14.8492 0.0422215 16.9897 0.265496
12 18.7982 0.0454613 19.6118 0.306472
13 24.2499 0.0562462 26.6973 0.417196
14 28.3185 0.0674071 33.2361 0.519377
15 34.223 0.0818048 38.7919 0.606197
16 36.0535 0.0926374 41.4399 0.647578
17 38.8287 0.103794 42.1662 0.658928
18 39.6149 0.10991 44.4449 0.694537
19 41.0223 0.114301 50.1876 0.784277
20 42.832 0.122338 59.0907 0.923404
21 46.7493 0.140876 68.839 1.07574
22 50.2197 0.145934 73.7643 1.15271
23 51.709 0.154463 73.1712 1.14344
24 52.1924 0.160597 70.6452 1.10397
25 52.8656 0.149565 65.8138 1.02847
26 54.2377 0.149172 62.496 0.976619
27 55.2716 0.152627 62.4575 0.976017
28 56.2219 0.154843 62.2325 0.972502
29 60.5414 0.164728 62.2109 0.972165
30 62.5299 0.194626 62.1238 0.970802

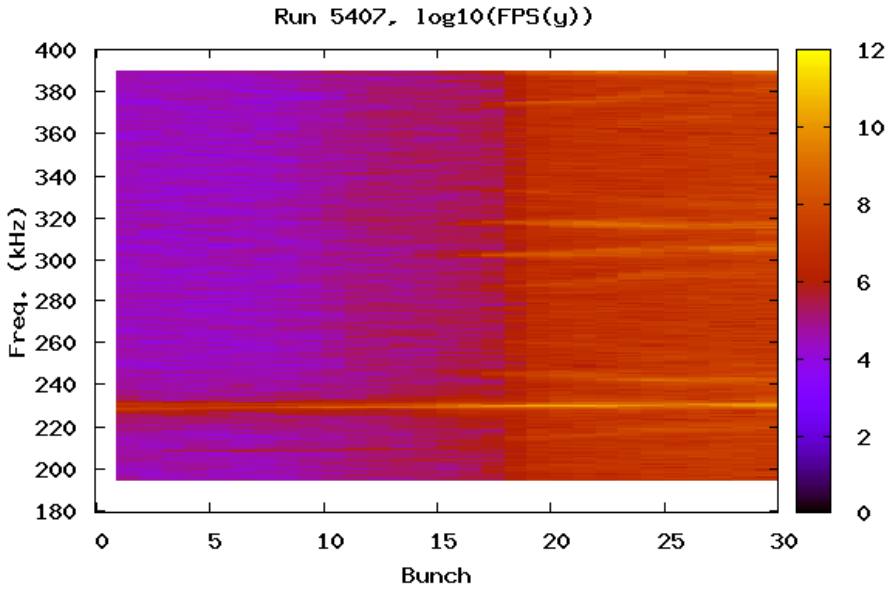


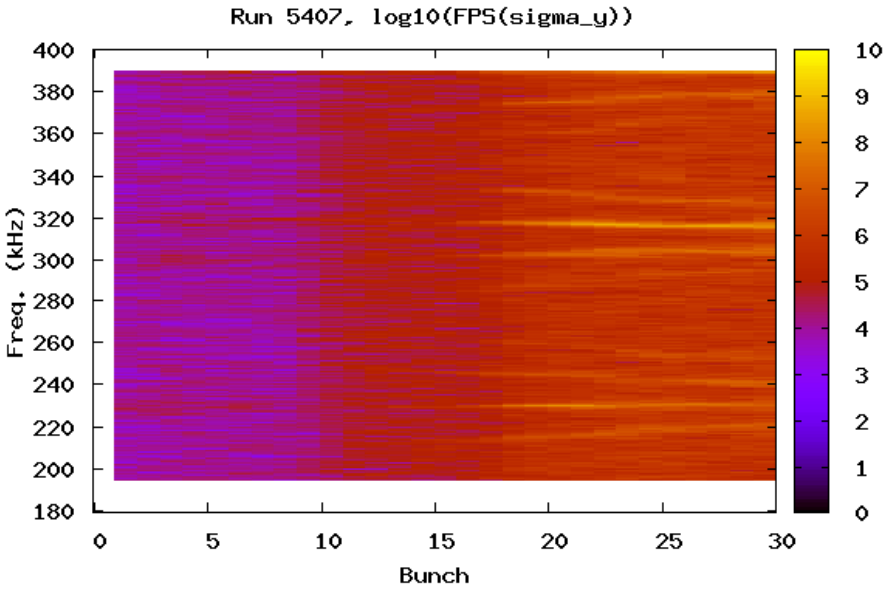


1.00 mA/bunch
Low Emittance
Norm. Chrom.
Norm. FB
CA
4096 Turns

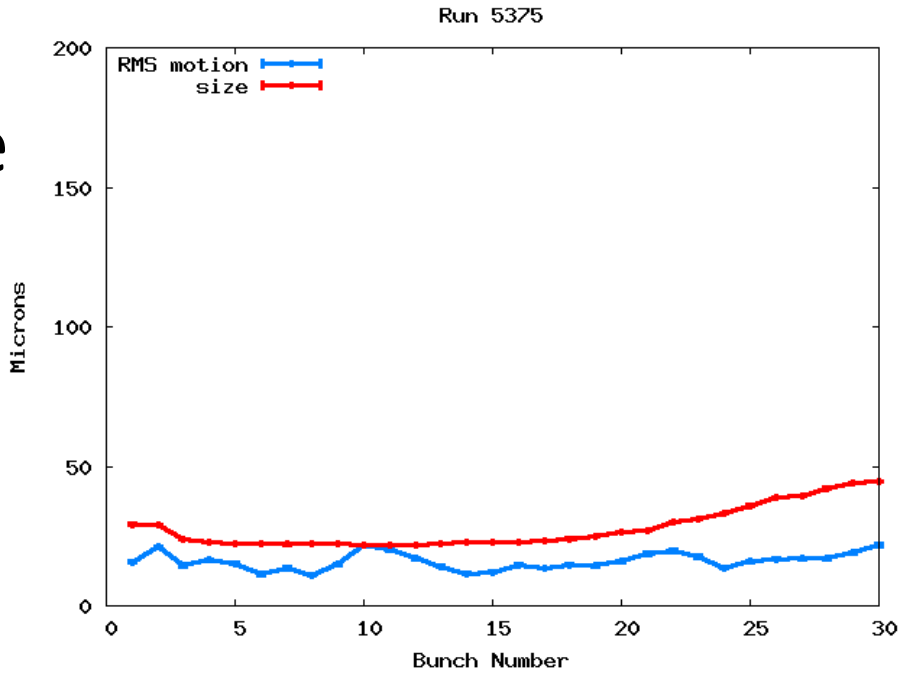


#Run 5407
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 15.2783 0.0290401 13.2877 0.207645
2 12.2601 0.0307239 14.0518 0.219586
3 9.08691 0.0357066 12.8502 0.200808
4 8.97278 0.0357893 11.5611 0.180664
5 10.8643 0.0360642 12.1661 0.190119
6 10.6763 0.0352268 14.3208 0.223789
7 10.061 0.0366945 12.3532 0.193043
8 15.7916 0.0352164 14.1854 0.221674
9 24.6191 0.0420128 14.9545 0.233692
10 28.9142 0.0532029 18.8017 0.293812
11 34.0442 0.0705439 20.612 0.322102
12 37.0746 0.0845664 25.8399 0.403797
13 36.7169 0.0894834 35.2322 0.55057
14 36.6986 0.0894896 51.2415 0.800747
15 38.0688 0.0971248 76.5905 1.19687
16 39.1113 0.101856 110.391 1.72507
17 41.637 0.126076 146.732 2.29297
18 50.1251 0.223826 174.699 2.73
19 59.0131 0.365149 189.541 2.96194
20 66.6431 0.444082 200.242 3.12917
21 71.1249 0.493971 202.967 3.17174
22 74.7357 0.541977 214.178 3.34694
23 76.2018 0.56972 226.516 3.53975
24 75.7404 0.622548 232.101 3.62702
25 68.7427 0.625856 237.72 3.71483
26 64.0869 0.631756 233.185 3.64396
27 62.9279 0.635039 236.019 3.68824
28 62.1204 0.636629 237.846 3.71681
29 63.9056 0.656031 236.213 3.69127
30 67.0508 0.674934 232.612 3.63501

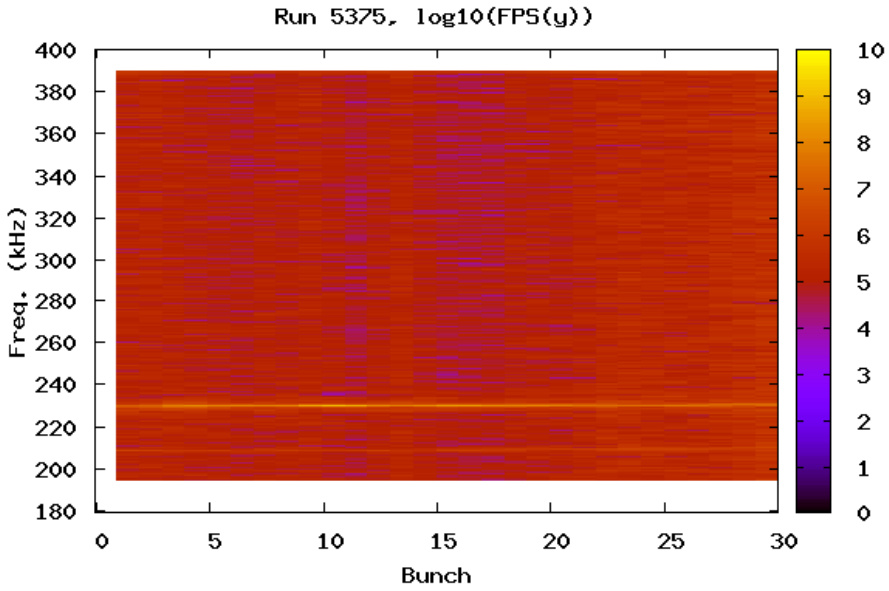


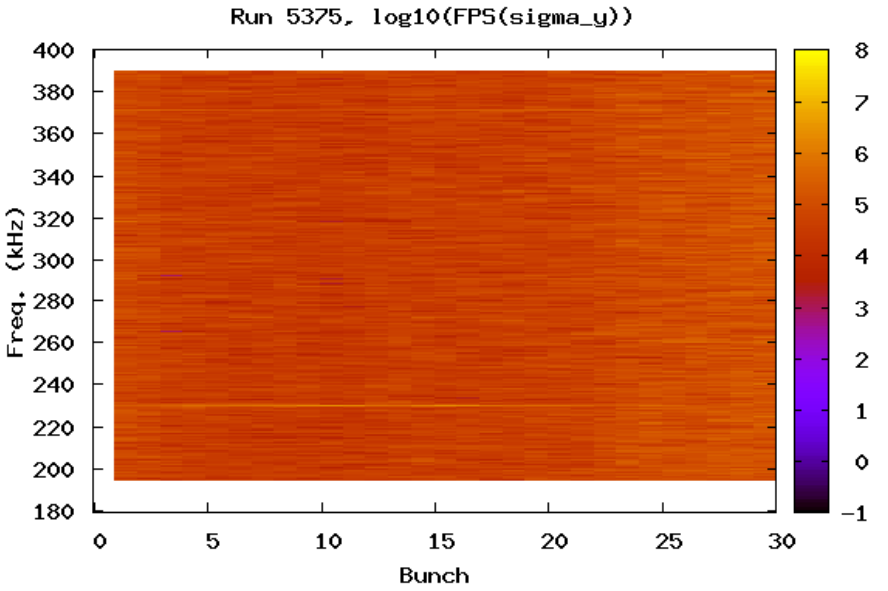


0.50 mA/bunch
Med. Emittance
Norm. Chrom.
Norm. FB
CA
4096 Turns

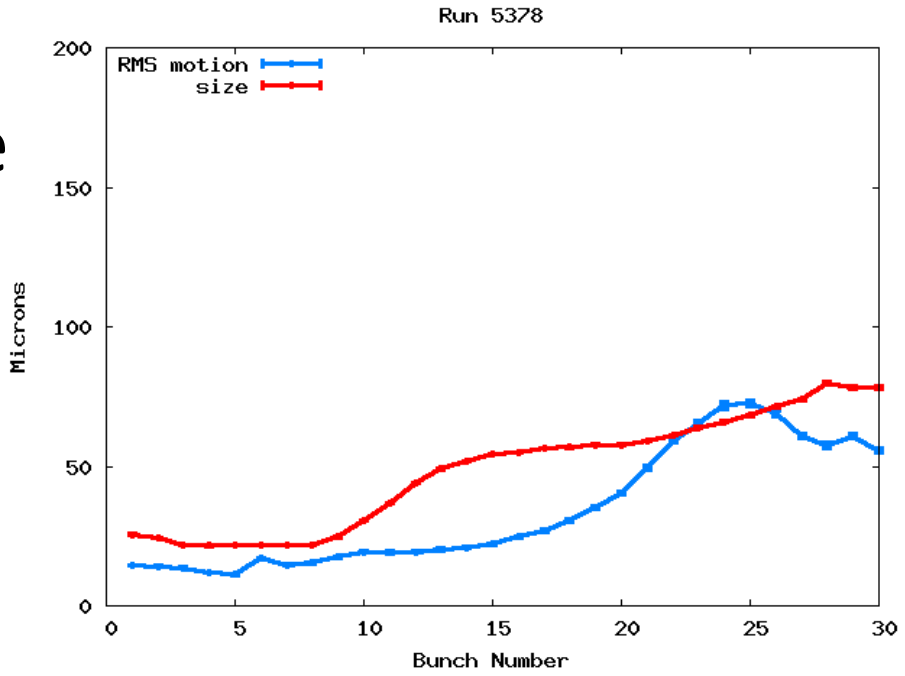


#Run 5375
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 29.234 0.0772146 15.7396 0.245962
2 29.1058 0.0986608 21.1533 0.330561
3 23.8434 0.0667413 14.3533 0.224297
4 22.8815 0.0633304 16.5145 0.25807
5 22.359 0.0621376 15.084 0.235717
6 22.1246 0.0577253 11.2016 0.175047
7 22.0758 0.057442 13.6384 0.213126
8 22.3029 0.0580949 10.9687 0.171406
9 22.1692 0.0588809 14.9279 0.233276
10 21.579 0.0593436 21.6077 0.337661
11 21.5857 0.0585059 20.0881 0.313915
12 21.5796 0.0605179 17.0742 0.266817
13 22.2876 0.0617902 14.2251 0.222294
14 22.9321 0.0686549 11.6014 0.181293
15 22.9767 0.061408 12.1262 0.189496
16 22.8448 0.0633582 14.6293 0.228611
17 23.2281 0.0623577 13.4831 0.210699
18 24.0845 0.0641984 14.5869 0.227949
19 24.9701 0.0671924 14.402 0.225059
20 26.3983 0.0716402 15.8903 0.248317
21 26.778 0.0754743 18.6777 0.291874
22 29.9481 0.081054 19.6703 0.307387
23 30.9576 0.0892433 17.6237 0.275404
24 33.2843 0.102424 13.6207 0.212849
25 35.9631 0.106046 16.0051 0.25011
26 38.7347 0.102242 16.6414 0.260054
27 39.5209 0.112256 16.9174 0.264367
28 42.1649 0.113925 16.951 0.264892
29 44.0527 0.122171 18.9656 0.296373
30 44.5544 0.120803 21.7861 0.340449

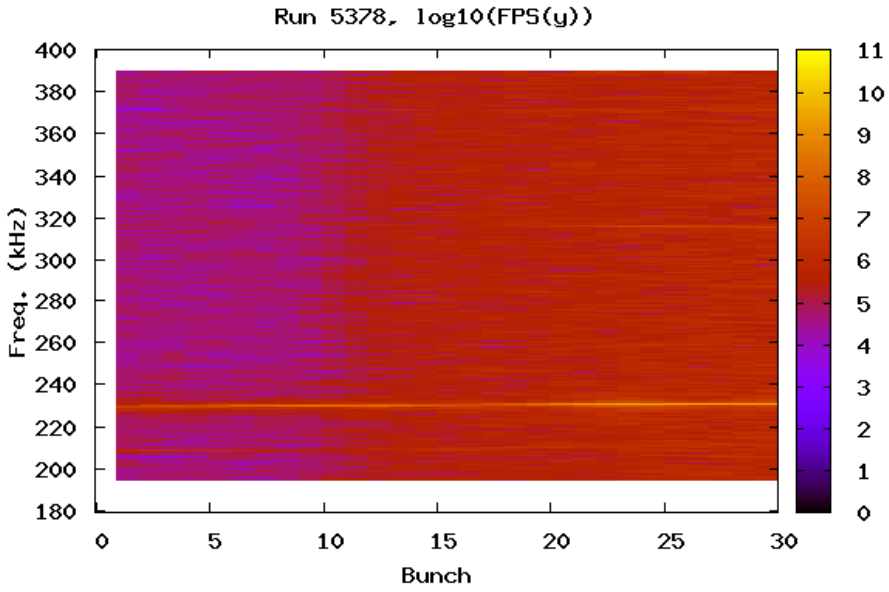


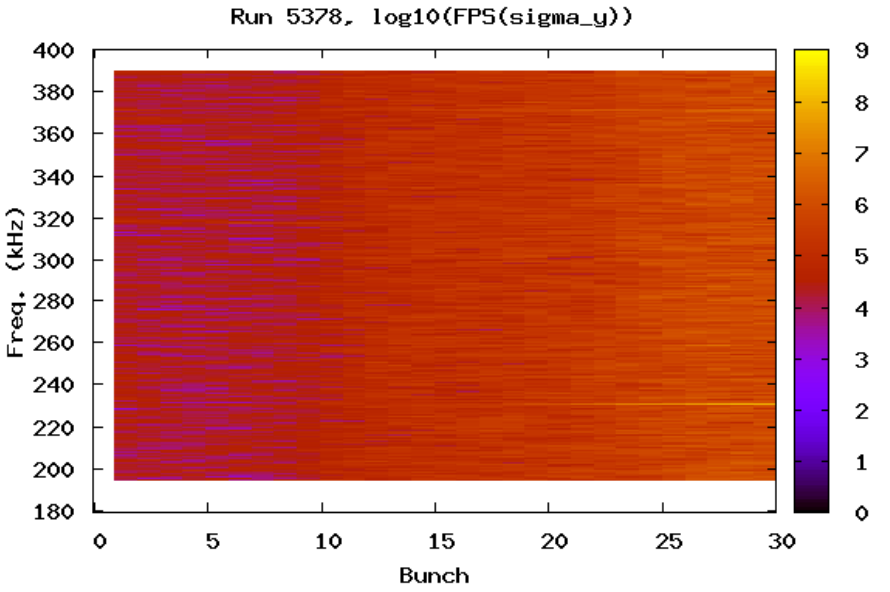


0.75 mA/bunch
Med. Emittance
Norm. Chrom.
Norm. FB
CA
4096 Turns

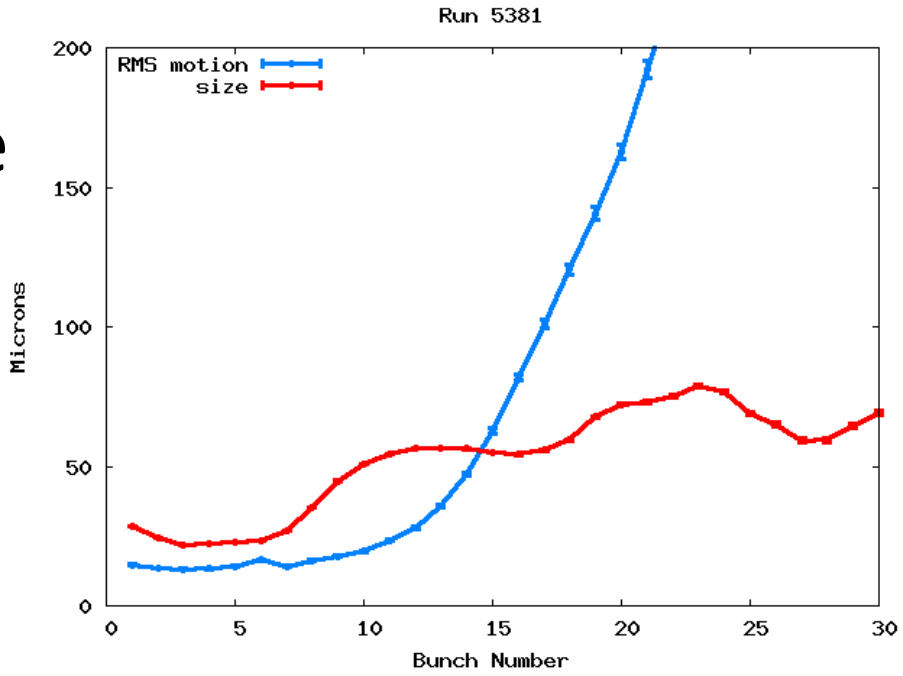


#Run 5378
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 25.6384 0.0468594 14.4765 0.226224
2 24.5477 0.047781 14.0442 0.219467
3 21.6376 0.0435485 13.5937 0.212428
4 21.5442 0.0426481 11.9081 0.186087
5 21.8347 0.0441619 11.1803 0.174713
6 21.6559 0.0438999 16.9381 0.264691
7 21.712 0.0453119 14.633 0.228668
8 21.9739 0.0454372 15.3059 0.239184
9 24.6118 0.0495207 17.5071 0.273581
10 30.6793 0.0605171 19.3221 0.301944
11 36.7944 0.0770486 19.2069 0.300145
12 43.9001 0.0894461 19.2632 0.301025
13 48.9966 0.0984853 20.2231 0.316024
14 51.6766 0.107848 20.9075 0.32672
15 54.3707 0.111124 22.1709 0.346463
16 54.8889 0.115424 24.6514 0.385225
17 56.452 0.122696 27.0434 0.422605
18 56.8176 0.131318 30.6954 0.479674
19 57.7203 0.139929 35.1006 0.548513
20 57.6904 0.141966 40.335 0.630311
21 59.1083 0.149116 49.7076 0.776776
22 61.1694 0.174359 59.2608 0.926063
23 63.8049 0.192955 65.4532 1.02283
24 65.8936 0.227064 71.8247 1.1224
25 68.2147 0.248714 72.4578 1.13229
26 71.3983 0.287634 68.732 1.07407
27 73.877 0.30463 60.8117 0.950298
28 80.0299 0.331678 57.5368 0.899123
29 78.2367 0.333519 60.8245 0.950499
30 78.2239 0.326963 55.6118 0.869041

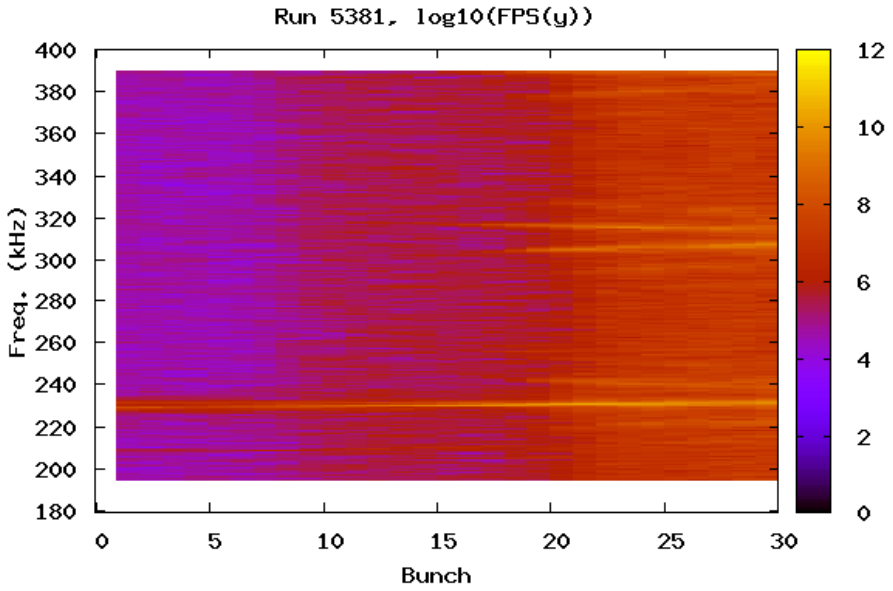


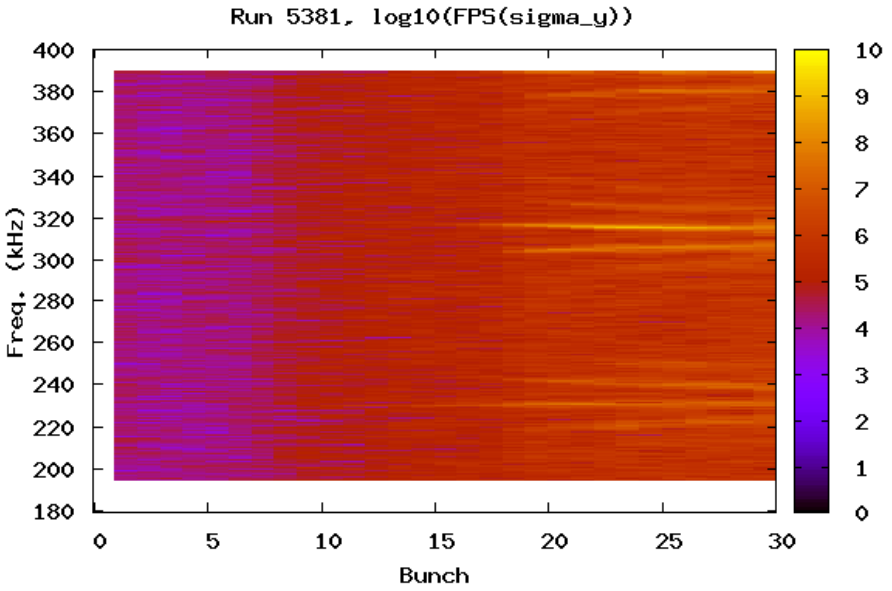


1.00 mA/bunch
Med. Emittance
Norm. Chrom.
Norm. FB
CA
4096 Turns

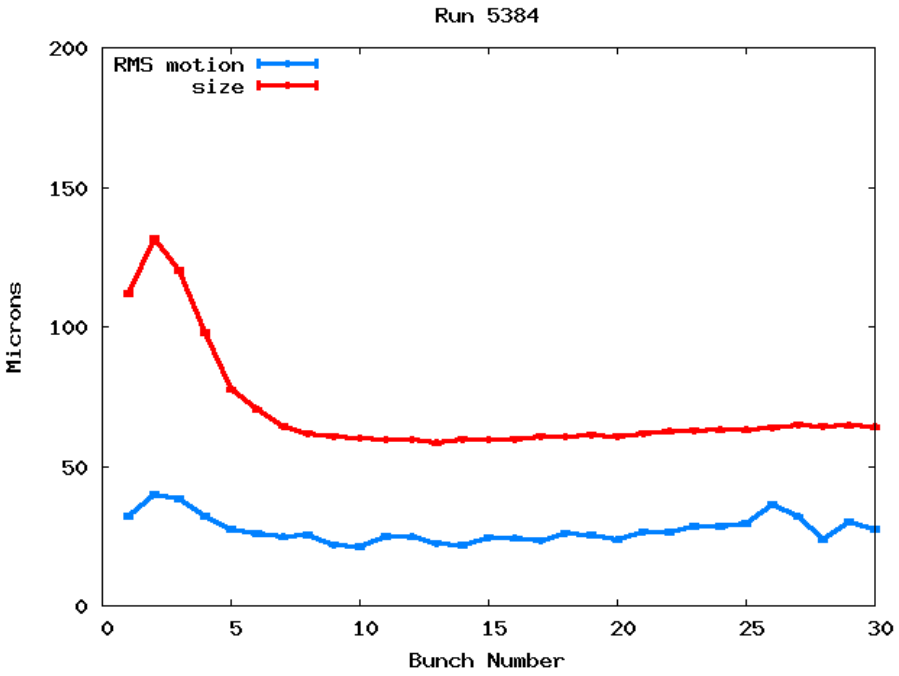


#Run 5381
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 28.6523 0.0438563 14.6006 0.228162
2 24.2981 0.0399963 13.488 0.210775
3 21.6864 0.0366011 13.2083 0.206405
4 22.3468 0.0385566 13.2963 0.20778
5 22.9218 0.0406492 14.1209 0.220666
6 23.3618 0.0415146 16.3228 0.255075
7 27.1283 0.0459584 14.1557 0.221209
8 35.3027 0.0589873 16.2165 0.253414
9 44.8132 0.0743246 17.7614 0.277556
10 50.7434 0.0837815 19.6046 0.306359
11 54.4159 0.0933002 23.4915 0.3671
12 56.6248 0.103099 28.0949 0.439036
13 56.4435 0.108922 35.7982 0.559415
14 56.3391 0.123669 47.1872 0.737389
15 54.8712 0.126156 62.7335 0.980331
16 54.2755 0.135563 81.8588 1.2792
17 55.8215 0.146609 100.82 1.5755
18 59.4659 0.194474 120.606 1.88471
19 67.7563 0.305182 140.658 2.19806
20 72.2589 0.368102 162.617 2.5412
21 73.0133 0.438989 192.096 3.00186
22 74.9896 0.510703 219.61 3.43183
23 78.7634 0.603991 231.803 3.62237
24 76.7786 0.632581 232.542 3.63392
25 68.9484 0.630425 234.896 3.67071
26 64.9292 0.654643 229.828 3.59151
27 59.2719 0.647526 231.047 3.61056
28 59.3481 0.638184 234.636 3.66663
29 64.3774 0.659436 235.06 3.67326
30 69.0552 0.697501 231.772 3.62188

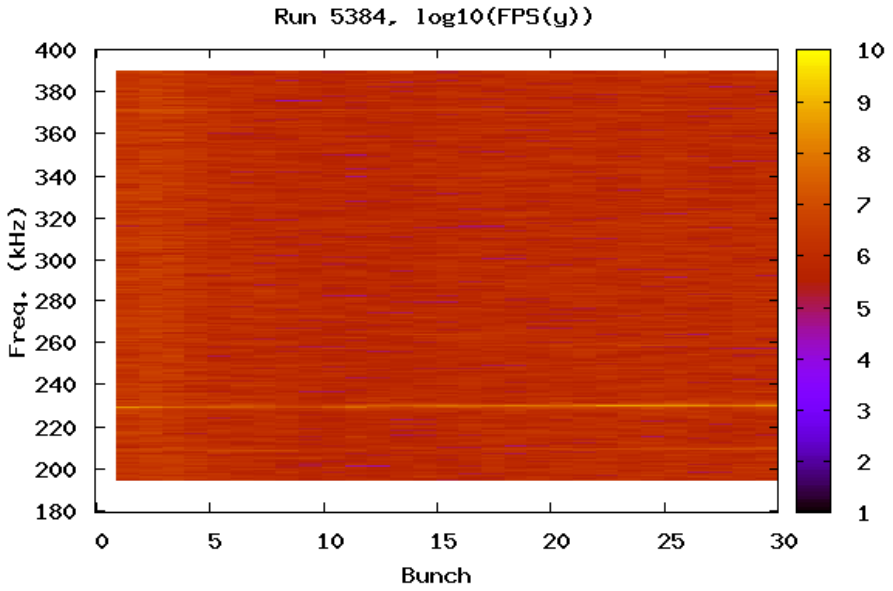


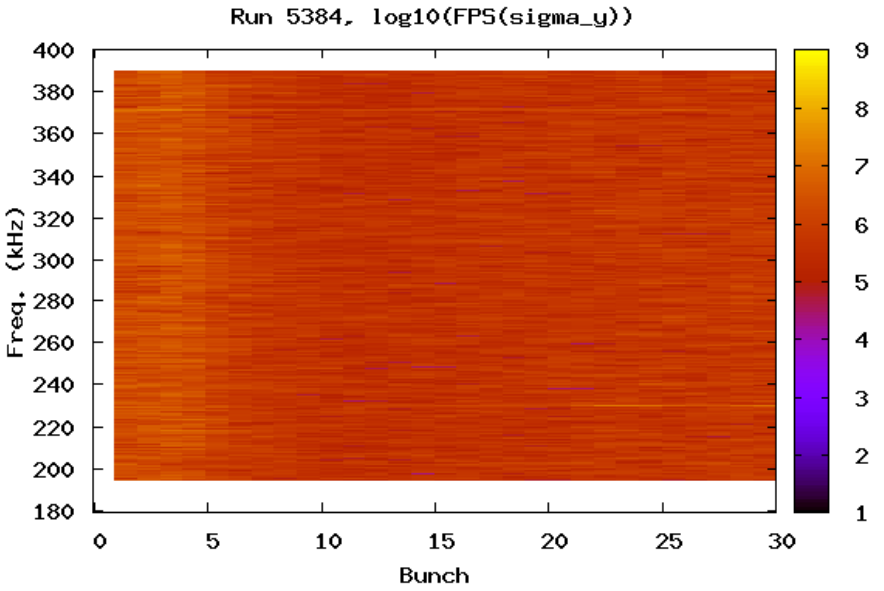


0.50 mA/bunch
High Emittance
Norm. Chrom.
Norm. FB
CA
4096 Turns

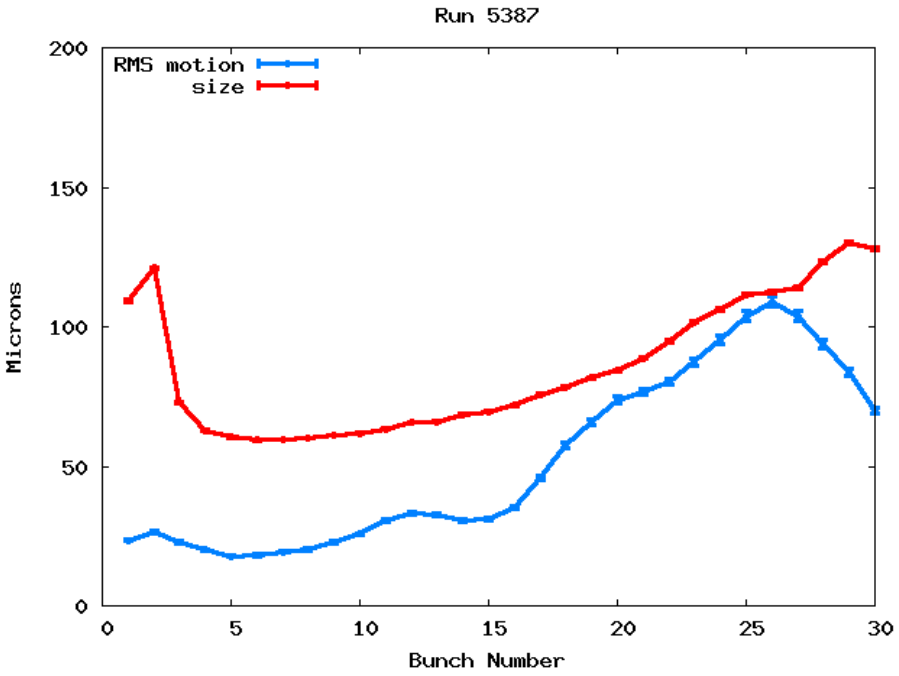


#Run 5384
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 111.854 0.463057 32.3278 0.505184
2 131.745 0.453616 39.7514 0.621192
3 120.429 0.528016 38.4372 0.600655
4 97.9364 0.543263 32.0821 0.501344
5 77.4786 0.397495 27.36 0.427553
6 70.3296 0.322952 25.8544 0.404025
7 64.317 0.267774 24.6223 0.38477
8 61.9055 0.233885 25.3469 0.396093
9 60.733 0.215998 21.9434 0.342908
10 60.1129 0.199424 21.3033 0.332905
11 59.6045 0.184469 24.7785 0.387211
12 59.588 0.199718 24.6672 0.385472
13 58.4656 0.190509 22.4351 0.350591
14 59.6643 0.194616 21.6983 0.339077
15 59.621 0.206924 24.505 0.382938
16 59.7174 0.196317 24.1961 0.37811
17 60.799 0.227831 23.4837 0.366978
18 60.6311 0.207051 26.1039 0.407923
19 61.2115 0.22331 25.2699 0.39489
20 60.7367 0.213995 23.6757 0.369979
21 61.778 0.234277 26.6692 0.416757
22 62.6685 0.24464 26.5577 0.415014
23 62.8082 0.234131 28.6783 0.448152
24 63.1207 0.250711 28.6505 0.447719
25 63.1586 0.247326 29.6805 0.463814
26 63.916 0.256852 36.3714 0.568373
27 64.8975 0.234112 31.877 0.498139
28 64.2706 0.251119 23.8984 0.373458
29 64.6906 0.263286 29.8995 0.467237
30 64.2365 0.25098 27.6279 0.431739

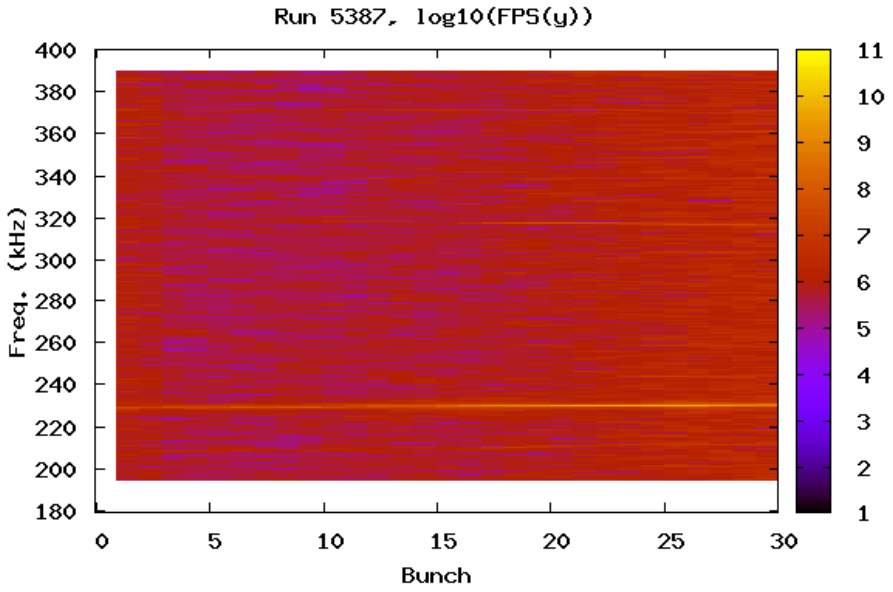


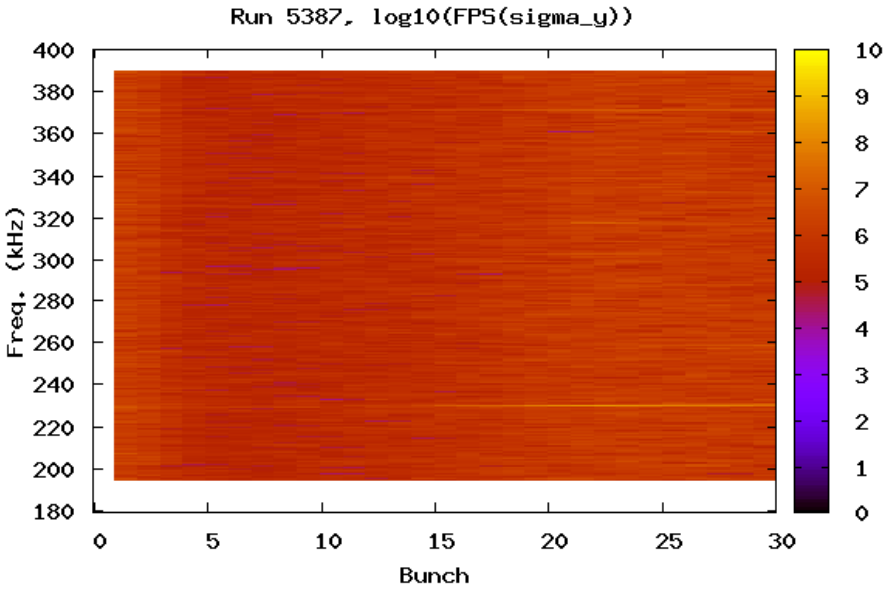


0.75 mA/bunch
High Emittance
Norm. Chrom.
Norm. FB
CA
4096 Turns

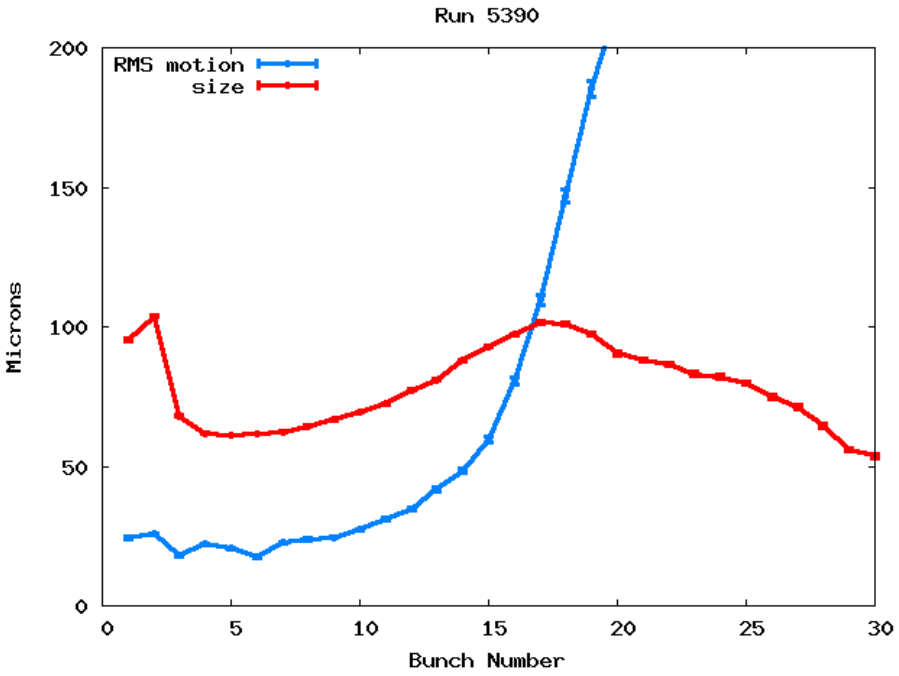


#Run 5387
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 109.445 0.390472 23.532 0.367732
2 121.058 0.410695 26.4559 0.413424
3 72.9578 0.271335 22.8675 0.357348
4 62.7942 0.171093 20.1401 0.314728
5 60.4303 0.15062 17.7174 0.276869
6 59.4727 0.147723 18.1545 0.283698
7 59.5343 0.146488 19.4206 0.303483
8 60.1697 0.148627 20.2472 0.3164
9 61.1841 0.164298 22.7472 0.355469
10 61.8762 0.166039 25.7209 0.401938
11 63.3838 0.179162 30.519 0.476917
12 65.8008 0.194439 33.2077 0.518933
13 65.993 0.200917 32.7693 0.512083
14 68.4924 0.210411 30.6142 0.478406
15 69.5209 0.225247 31.2008 0.487571
16 71.8823 0.24279 35.0849 0.548269
17 75.672 0.258712 46.0501 0.71962
18 78.399 0.301013 57.3933 0.89688
19 81.7407 0.342395 66.0295 1.03184
20 84.2316 0.361866 73.7533 1.15254
21 88.7872 0.394831 76.7369 1.19916
22 94.7302 0.422913 80.2894 1.25468
23 101.813 0.451513 87.4186 1.36608
24 106.014 0.47284 95.4326 1.49132
25 111.63 0.487071 103.851 1.62287
26 112.227 0.500525 108.987 1.70313
27 113.89 0.495073 103.839 1.62269
28 123.22 0.466258 93.659 1.4636
29 130.169 0.436291 83.7945 1.30945
30 128.082 0.436728 70.0461 1.0946

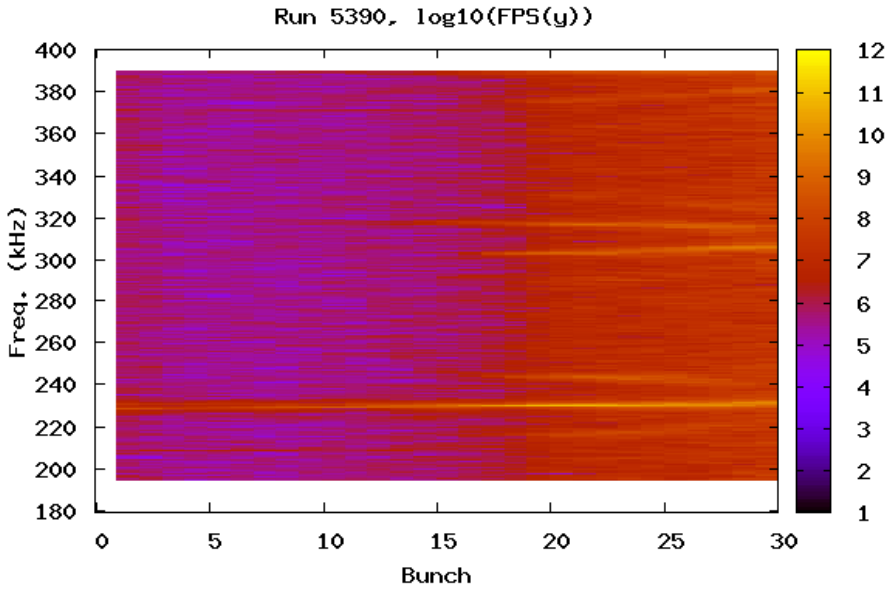


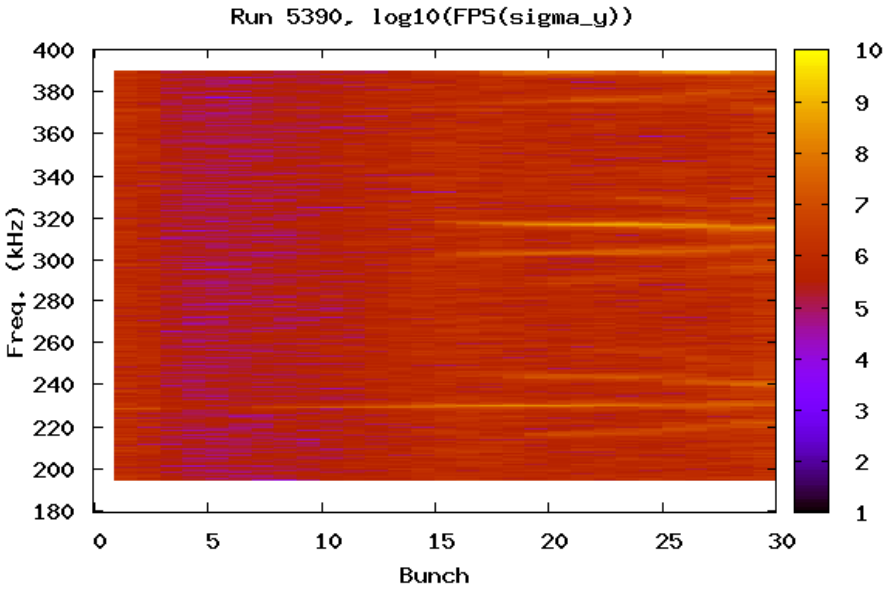


1.00 mA/bunch
High Emittance
Norm. Chrom.
Norm. FB
CA
4096 Turns

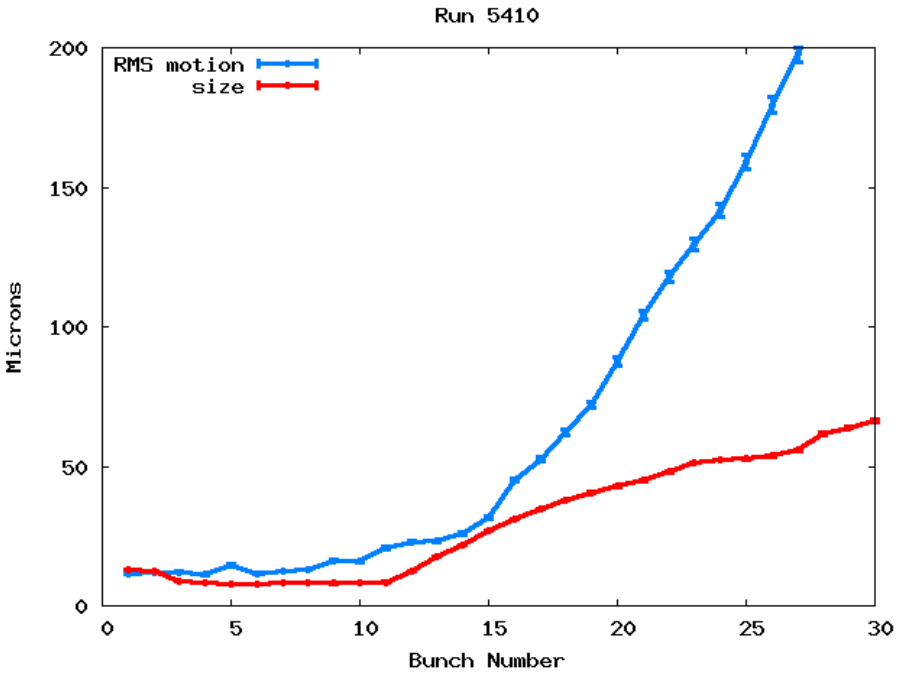


#Run 5390
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 95.368 0.291082 24.3732 0.380878
2 103.859 0.354987 25.713 0.401815
3 68.0457 0.177789 17.9322 0.280225
4 61.8182 0.13497 22.0692 0.344873
5 61.0852 0.127107 20.5639 0.32135
6 61.7639 0.129843 17.5386 0.274074
7 62.3779 0.139901 22.6655 0.354192
8 64.3799 0.151127 23.8897 0.373322
9 66.7188 0.161328 24.6062 0.384518
10 69.4409 0.178678 27.2642 0.426056
11 72.2815 0.207854 30.9022 0.482906
12 77.2614 0.236837 34.6189 0.540987
13 81.0138 0.270256 41.8336 0.65373
14 87.9553 0.306057 48.3792 0.756017
15 92.9297 0.3525 59.7264 0.933339
16 97.262 0.398558 80.6923 1.26097
17 101.691 0.460297 109.594 1.71262
18 100.937 0.539682 146.781 2.29373
19 97.3938 0.594116 185.242 2.89476
20 90.4169 0.62159 214.504 3.35203
21 88.1421 0.644091 221.877 3.46725
22 86.6132 0.660599 224.326 3.50552
23 83.0371 0.666822 229.566 3.5874
24 82.0563 0.685598 229.721 3.58982
25 79.8419 0.701508 228.099 3.56448
26 74.9841 0.680338 233.992 3.65657
27 71.1481 0.701607 229.311 3.58342
28 64.5862 0.715158 226.577 3.54069
29 55.9351 0.670069 226.045 3.53239
30 53.7817 0.699245 226.971 3.54685

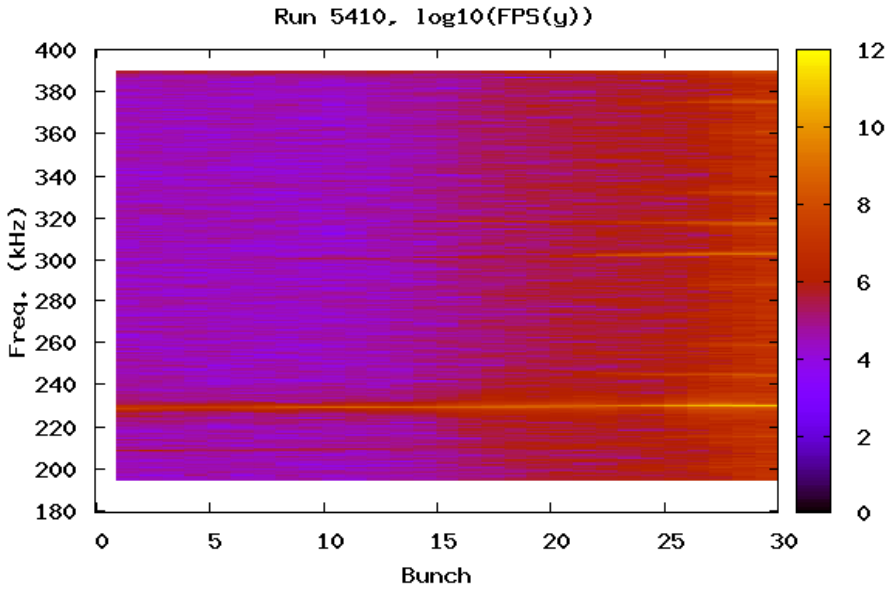


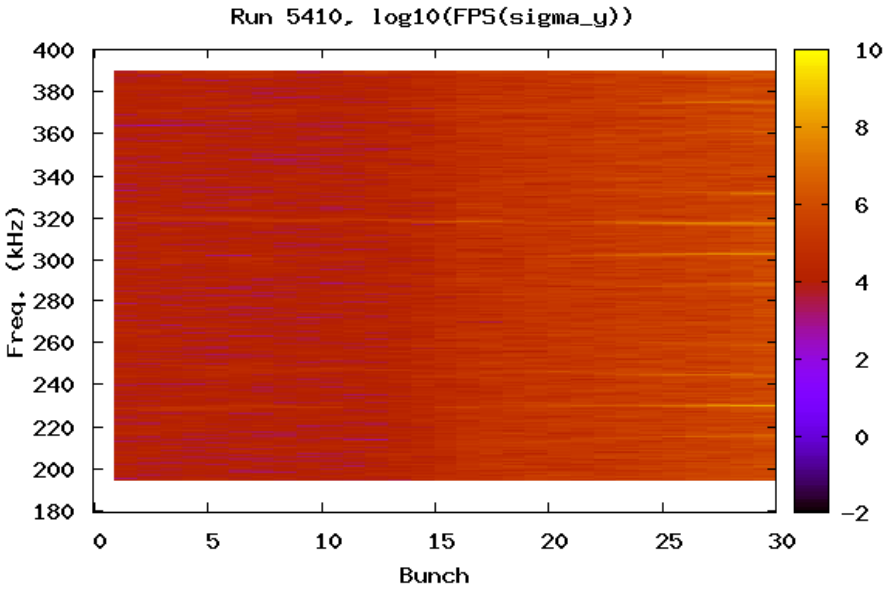


0.75 mA/bunch
Low Emittance
Low V. Chrom.
Norm. FB
CA
4096 Turns

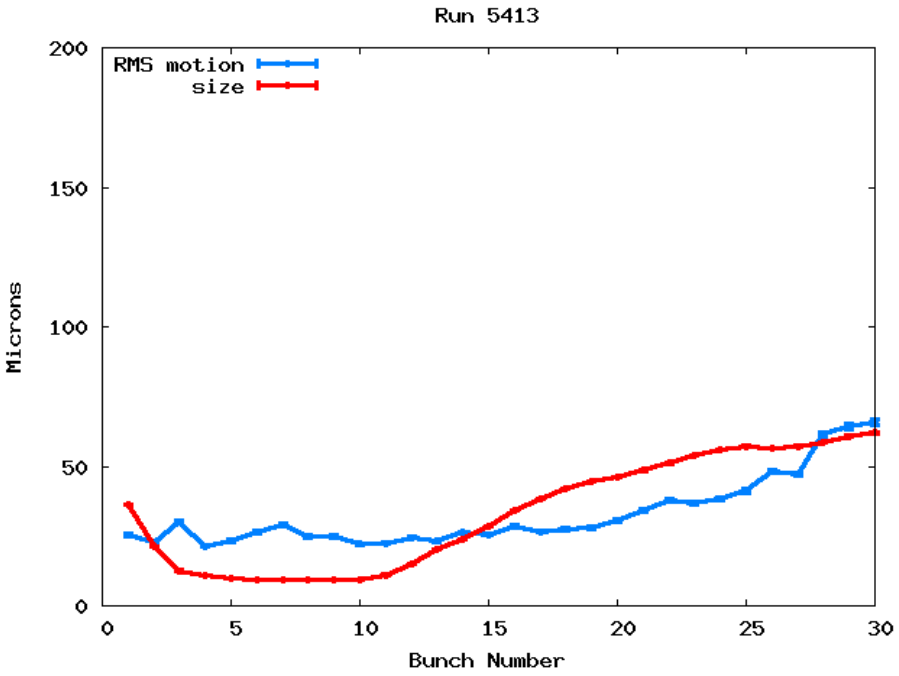


#Run 5410
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 12.8882 0.0328568 11.4119 0.178332
2 12.3389 0.0367119 11.8766 0.185595
3 8.89221 0.0371646 12.0035 0.187577
4 8.50586 0.0367927 11.1988 0.175003
5 7.97852 0.03637 14.5972 0.228109
6 7.96143 0.0373033 11.5638 0.180706
7 8.14453 0.0365632 12.3907 0.193629
8 8.2373 0.0364304 12.982 0.202869
9 8.05786 0.0357297 16.0924 0.251475
10 8.07373 0.0362692 15.8622 0.247878
11 8.52295 0.03687 20.7655 0.3245
12 12.5092 0.0402462 22.9364 0.358425
13 17.7936 0.044046 23.0718 0.360541
14 21.8683 0.0506303 25.9741 0.405895
15 26.8958 0.0631038 31.4759 0.491871
16 30.9534 0.0767593 45.0571 0.704104
17 34.6545 0.0949243 52.4876 0.820219
18 37.9297 0.102912 62.0264 0.969281
19 40.603 0.107414 72.0339 1.12567
20 42.8345 0.117761 87.5476 1.3681
21 44.8511 0.130208 104.037 1.62577
22 47.9919 0.139903 117.905 1.84249
23 51.2085 0.167898 129.588 2.02506
24 52.2882 0.1819 141.675 2.21394
25 52.6221 0.211886 159.206 2.4879
26 53.7305 0.239003 179.518 2.80531
27 55.7349 0.276708 197.899 3.09255
28 61.7432 0.365147 216.8 3.38792
29 63.9752 0.449135 230.097 3.5957
30 66.4954 0.486626 230.349 3.59964

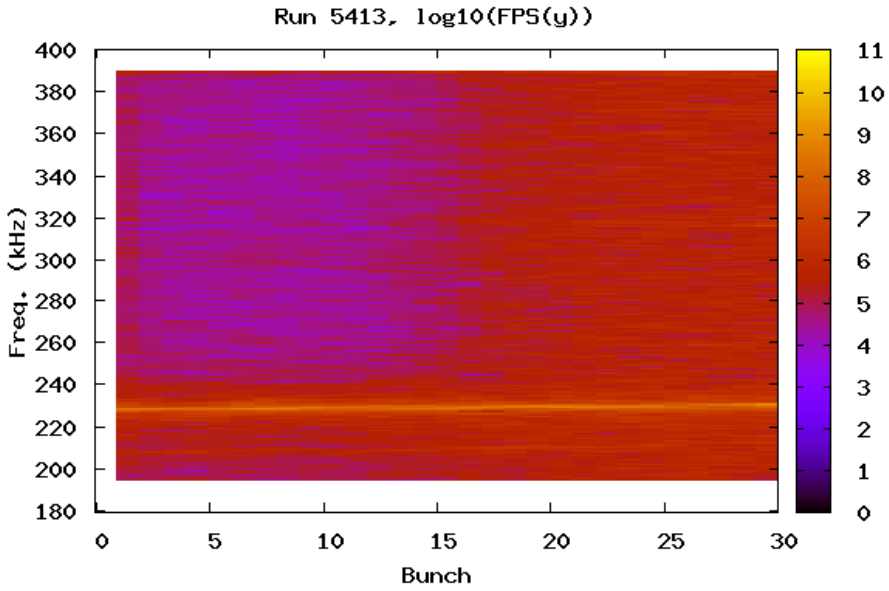


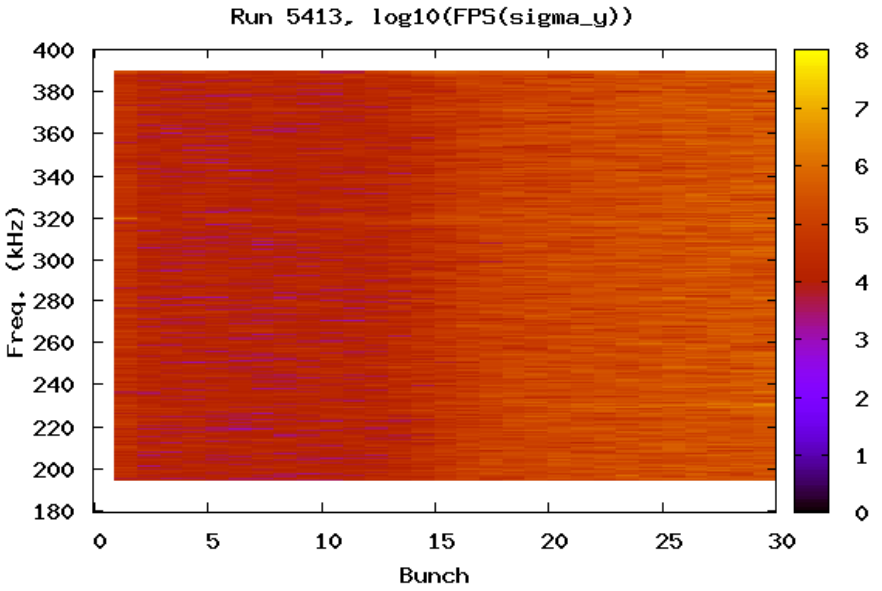


0.75 mA/bunch
Low Emittance
High V. Chrom.
Norm. FB
CA
4096 Turns

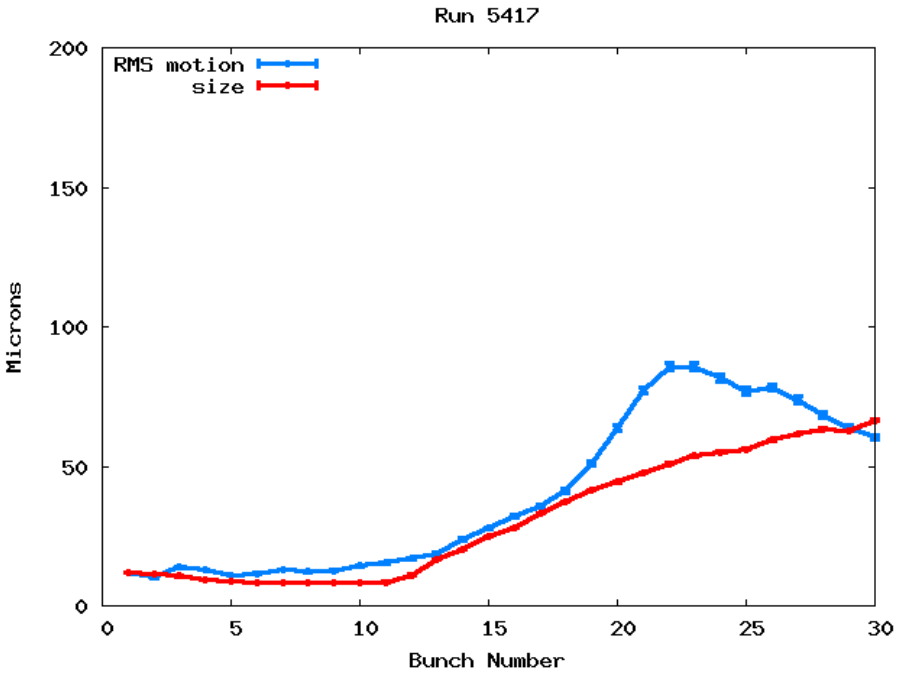


#Run 5413
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 36.3831 0.0895069 25.2548 0.394654
2 21.0443 0.044197 22.7244 0.355112
3 12.6935 0.035836 30.06 0.469744
4 10.8484 0.0384631 21.446 0.335135
5 10.0604 0.0382899 23.2638 0.363541
6 9.44458 0.03717 26.4931 0.414005
7 9.27979 0.0368591 29.2432 0.456981
8 9.1748 0.0375287 24.7981 0.387517
9 9.27734 0.0364305 24.9817 0.390387
10 9.41956 0.038482 22.0729 0.344932
11 11.1328 0.0383112 22.4158 0.350289
12 15.1306 0.0402179 24.5223 0.383208
13 20.0098 0.0455082 23.1767 0.36218
14 23.8501 0.0558779 26.228 0.409863
15 28.6041 0.0668801 25.6105 0.400212
16 34.3176 0.084192 28.5454 0.446076
17 38.501 0.0979222 26.662 0.416645
18 42.0715 0.108394 27.4544 0.429028
19 44.6021 0.117097 28.0521 0.438367
20 46.2238 0.119512 30.6012 0.478202
21 48.5107 0.129664 34.0729 0.532454
22 51.1224 0.133859 37.6601 0.58851
23 53.9124 0.145615 36.6443 0.572636
24 55.8685 0.150745 38.351 0.599307
25 57.2223 0.159522 41.2985 0.645368
26 56.546 0.170249 48.2074 0.753333
27 57.1661 0.170454 47.136 0.736591
28 58.501 0.187135 61.4212 0.959823
29 60.7349 0.195641 64.1468 1.00242
30 61.944 0.202408 65.7397 1.02731

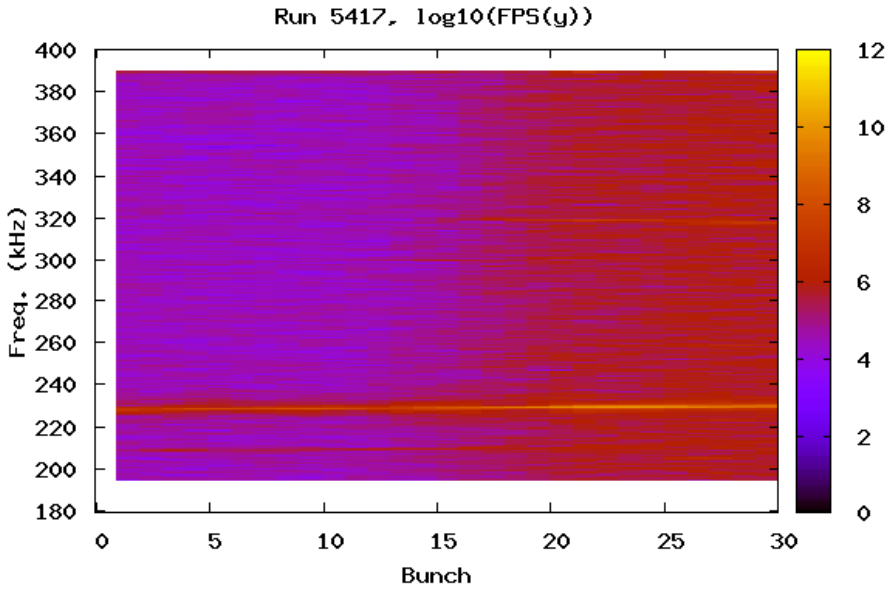


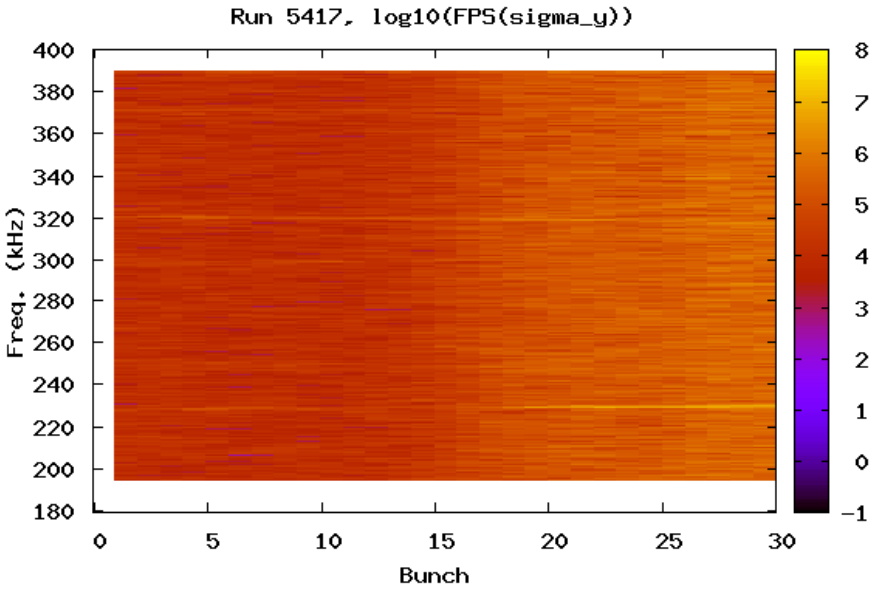


0.75 mA/bunch
Low Emittance
Low H. Chrom.
Norm. FB
CA
4096 Turns

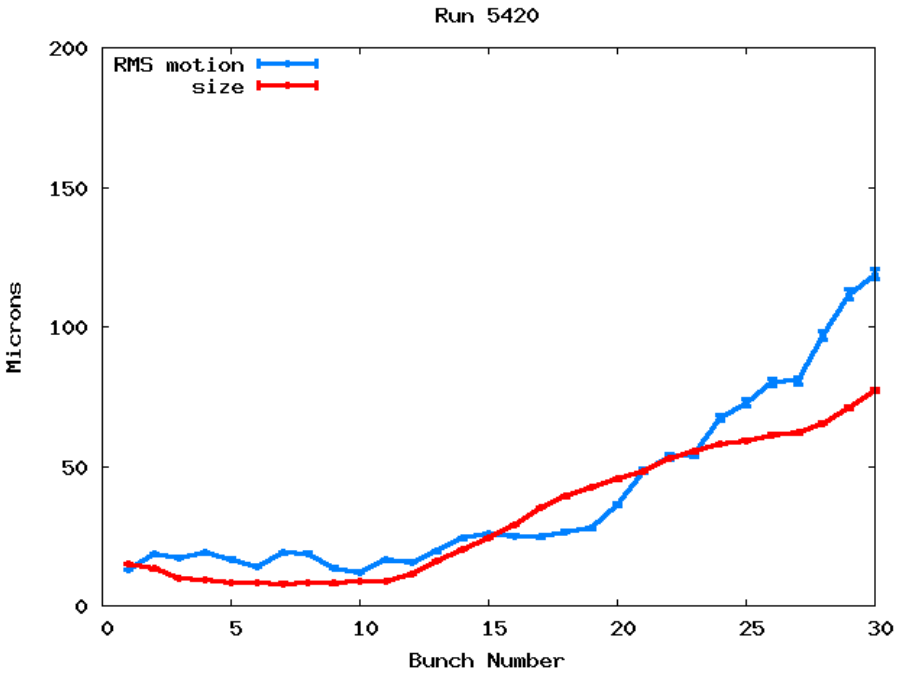


#Run 5417
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 12.0367 0.0329537 11.8775 0.185608
2 11.3556 0.0368623 10.2575 0.160293
3 10.658 0.0372924 13.8497 0.216428
4 9.41528 0.0371104 13.0003 0.203155
5 8.67065 0.0349805 10.9522 0.171148
6 8.38745 0.0346916 11.552 0.180521
7 8.48572 0.036166 12.9508 0.202382
8 8.14941 0.0363581 12.2714 0.191764
9 8.2605 0.036406 12.5744 0.196499
10 8.18787 0.0359733 14.4553 0.225892
11 8.5144 0.0362144 15.4551 0.241516
12 11.1298 0.0398067 16.8424 0.263195
13 16.5112 0.0428921 18.8166 0.294045
14 20.0677 0.0489179 23.8563 0.372801
15 24.8969 0.0590255 27.7856 0.434204
16 27.9456 0.0700047 32.2202 0.503503
17 33.1549 0.0855423 35.9415 0.561655
18 37.1655 0.103475 41.2824 0.645116
19 41.5686 0.114665 51.0301 0.797443
20 44.3457 0.126577 63.875 0.998169
21 47.7429 0.138871 77.1243 1.20521
22 50.965 0.145654 85.6891 1.33906
23 53.7097 0.146422 85.5705 1.3372
24 55.0458 0.14796 81.662 1.27612
25 56.1609 0.153282 76.8953 1.20164
26 59.35 0.191 78.2783 1.22325
27 61.684 0.214023 73.8173 1.15354
28 63.3563 0.215495 68.3726 1.06845
29 62.7057 0.206341 63.6184 0.994158
30 66.4954 0.235207 60.4471 0.944602

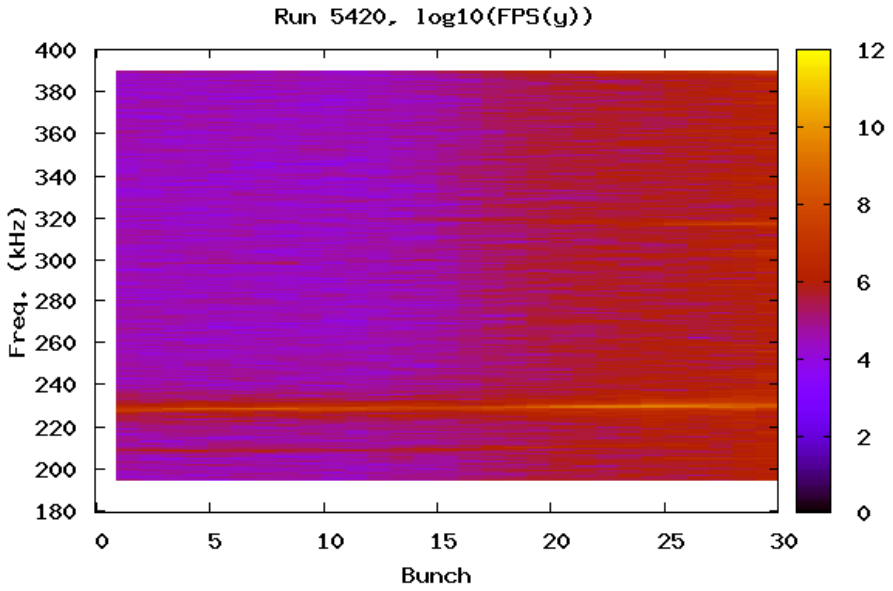


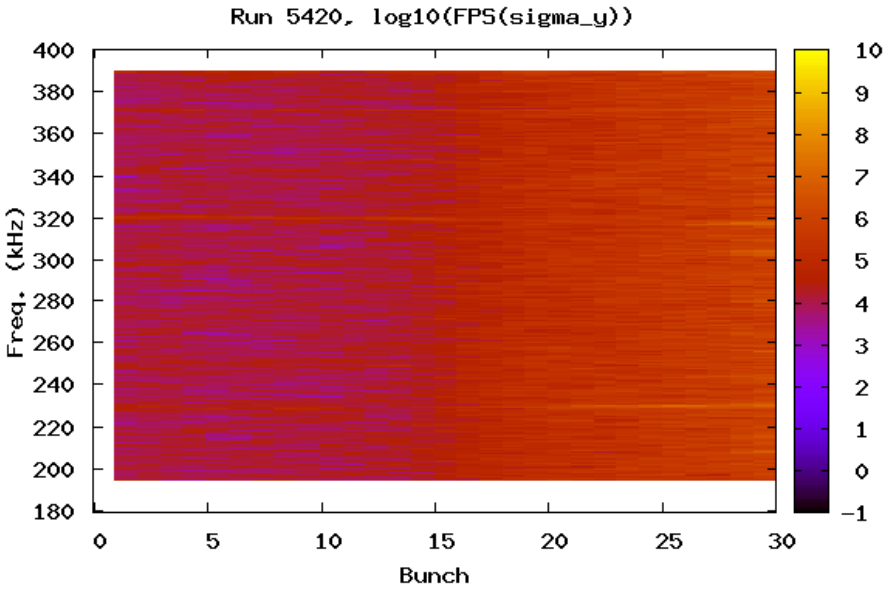


0.75 mA/bunch
Low Emittance
Norm. Chrom.
High FB
CA
4096 Turns

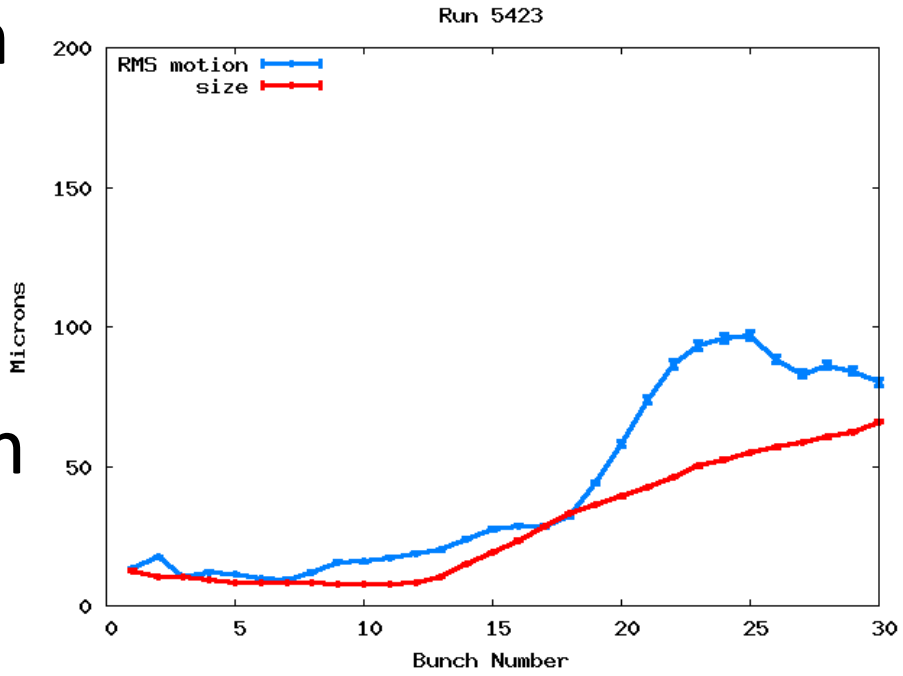


#Run 5420
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 15.2295 0.0335095 12.99 0.202994
2 13.23 0.0366193 18.4722 0.288664
3 9.97498 0.0376915 17.235 0.26933
4 9.10828 0.037836 19.1267 0.298891
5 8.37708 0.0356504 16.6586 0.260322
6 8.25012 0.0356054 14.149 0.221105
7 8.02673 0.0363456 18.9714 0.296464
8 8.08289 0.0357312 18.8423 0.294447
9 8.05542 0.0368681 13.6625 0.213502
10 8.59009 0.0374766 12.1422 0.189746
11 8.69873 0.0376008 16.4925 0.257726
12 11.5558 0.0402544 15.7785 0.246569
13 16.0834 0.0422907 19.5924 0.306169
14 20.3162 0.0485528 24.1472 0.377346
15 24.5312 0.0578844 25.7229 0.401969
16 29.0857 0.072397 25.0977 0.3922
17 35.1019 0.0886363 24.6368 0.384997
18 39.1364 0.102704 26.6507 0.416468
19 42.4371 0.118508 27.77 0.433959
20 45.354 0.124185 36.2605 0.56664
21 48.2861 0.130903 48.4235 0.75671
22 52.8357 0.144742 53.4175 0.83475
23 55.2338 0.156751 54.3418 0.849194
24 57.981 0.183037 67.1501 1.04935
25 59.2096 0.198051 72.7969 1.13759
26 61.2494 0.221294 80.1635 1.25271
27 61.9879 0.227871 80.6307 1.26001
28 65.4382 0.281391 96.7139 1.51134
29 71.0864 0.379074 111.581 1.74366
30 77.0673 0.452777 118.829 1.85694

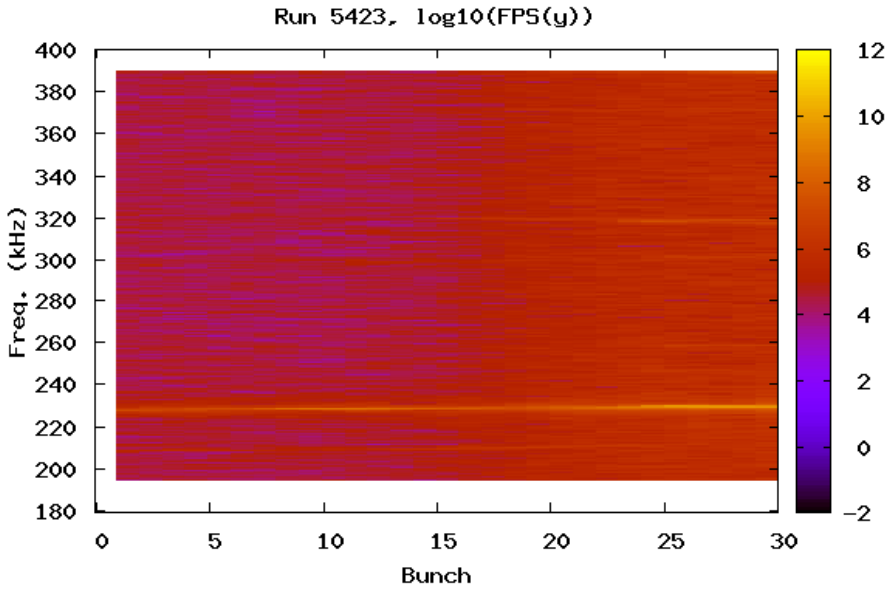


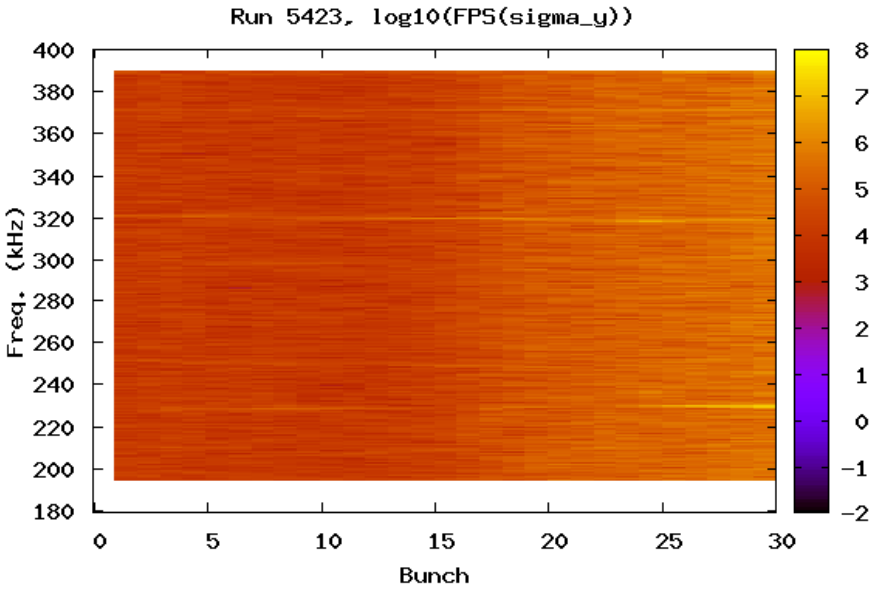


0.75 mA/bunch Low Emittance Norm. Chrom. Norm. FB Precursor Bunch CA 4096 Turns

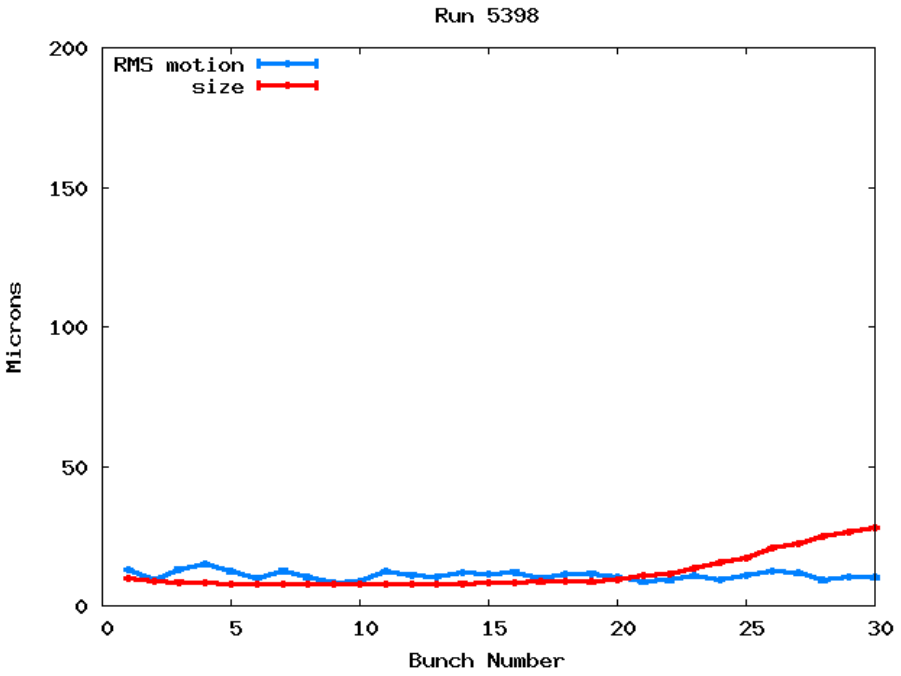


#Run 5423
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 12.6697 0.0338505 13.3622 0.20881
2 10.5627 0.0362084 17.5733 0.274616
3 10.52 0.0395732 10.5148 0.164314
4 9.22302 0.0389209 12.0645 0.188531
5 8.48572 0.0376303 11.378 0.177803
6 8.14758 0.0372818 9.93783 0.155298
7 8.20129 0.0375334 9.46037 0.147836
8 8.11218 0.0365716 12.0646 0.188533
9 7.97363 0.0352834 15.7759 0.246528
10 7.8479 0.0354714 15.884 0.248217
11 7.88147 0.0354449 17.3393 0.27096
12 8.32947 0.0359276 18.7276 0.292655
13 10.2734 0.0401816 20.0315 0.31303
14 15.0494 0.0421654 24.0388 0.375652
15 19.292 0.0467583 27.6289 0.431754
16 23.5748 0.0555182 28.7403 0.449122
17 28.4015 0.0710574 28.5256 0.445767
18 33.0219 0.0848262 32.0163 0.500316
19 36.1664 0.0957988 43.9918 0.687455
20 39.1443 0.103272 57.9302 0.90527
21 42.4451 0.112491 73.7729 1.15284
22 46.1938 0.122192 86.5513 1.35253
23 50.105 0.133769 93.184 1.45618
24 52.572 0.140539 95.7366 1.49607
25 54.8468 0.162081 96.7037 1.51118
26 56.8451 0.154796 88.212 1.37848
27 58.6017 0.172766 82.9556 1.29634
28 60.5371 0.196736 86.124 1.34585
29 62.2925 0.209603 84.1301 1.31469
30 65.9277 0.247202 80.1872 1.25308





0.50 mA/bunch Low Emittance Super-high Chrom. Norm. FB CA 4096 Turns



#Run 5398
#bunch ave(size) sig(size)/sqrt(n-1) sig(pos) sig(pos)/sqrt(n-1)
1 10.0116 0.03889 12.9196 0.201894
2 8.66211 0.0383109 9.2096 0.143917
3 8.52478 0.0395731 13.0919 0.204586
4 8.16406 0.0394328 14.7744 0.230879
5 7.82959 0.037195 12.1874 0.190451
6 7.96265 0.0381979 9.92435 0.155087
7 7.7063 0.0364732 12.6242 0.197277
8 7.77466 0.0368617 10.1913 0.159258
9 7.89062 0.0367373 8.18653 0.12793
10 7.94861 0.0377039 8.71465 0.136183
11 7.82349 0.0379517 12.2026 0.190689
12 7.71057 0.0374403 11.1248 0.173847
13 7.85461 0.0376816 10.4114 0.162698
14 8.03101 0.0388723 11.8728 0.185536
15 8.10852 0.0388104 11.3577 0.177486
16 8.32092 0.0398947 12.0078 0.187645
17 8.56201 0.0409706 9.95913 0.15563
18 8.76709 0.0411022 11.3486 0.177344
19 8.58582 0.0419747 11.6271 0.181695
20 9.36462 0.0428449 10.3414 0.161605
21 10.7776 0.0444051 8.65144 0.135195
22 11.5253 0.0472296 9.11516 0.142442
23 13.6078 0.0488751 10.9071 0.170445
24 15.4205 0.0514684 9.33618 0.145896
25 17.2198 0.0541512 10.8134 0.16898
26 20.899 0.0586113 12.4804 0.195029
27 22.1234 0.0642488 11.8309 0.18488
28 24.7638 0.0687981 9.19246 0.14365
29 26.5161 0.0753069 10.4435 0.1632
30 27.8613 0.0865438 10.1071 0.157942