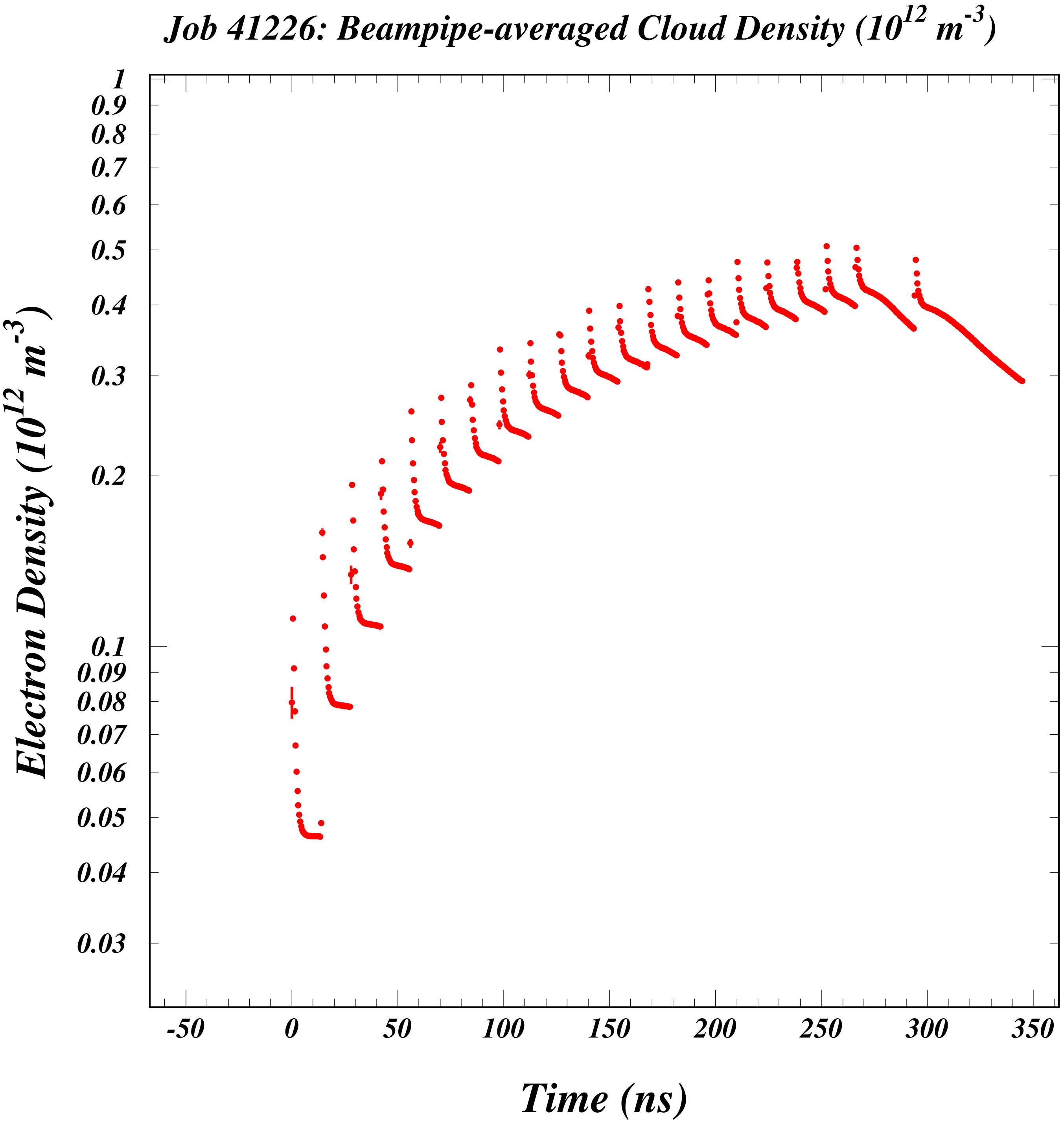
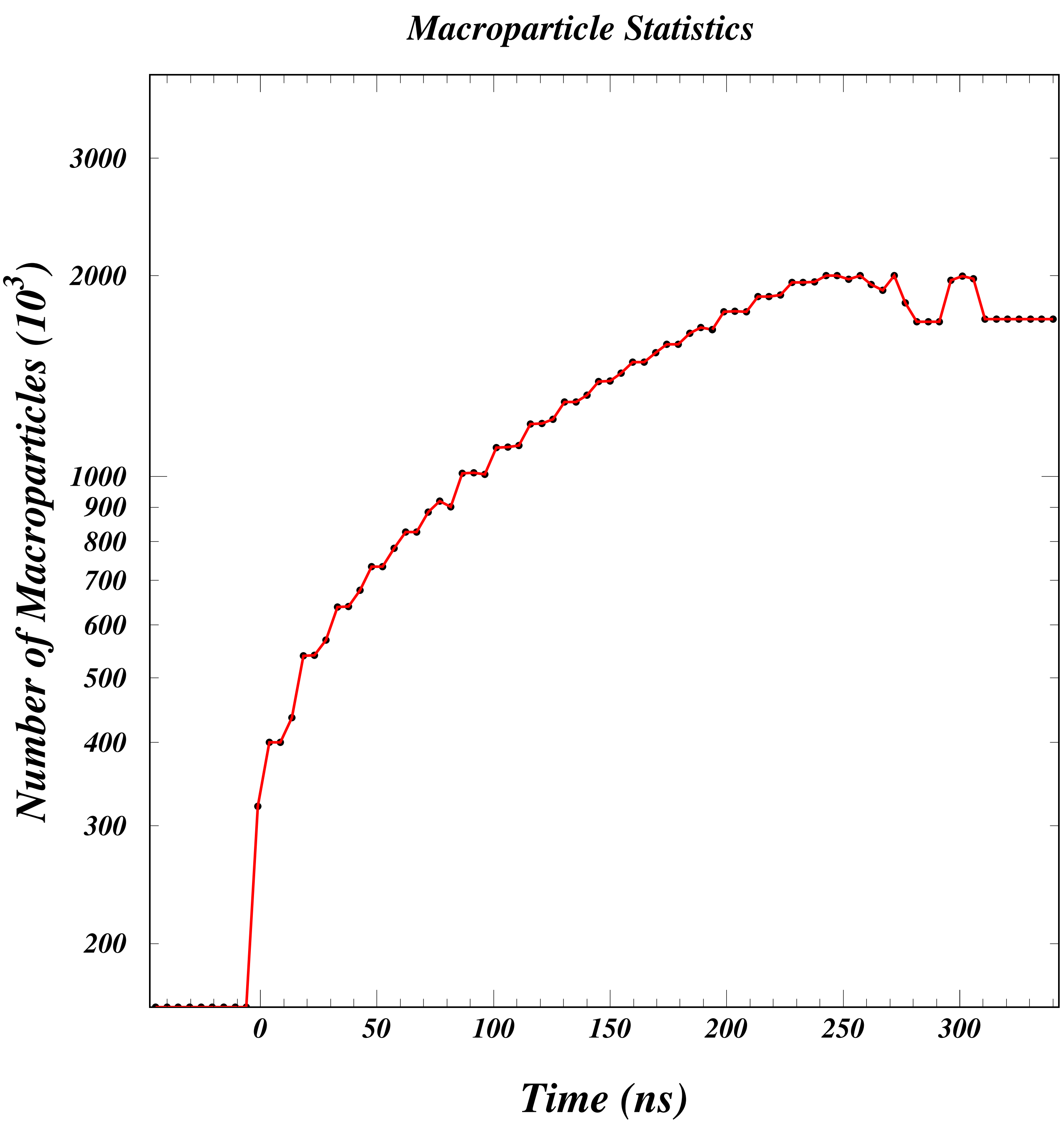
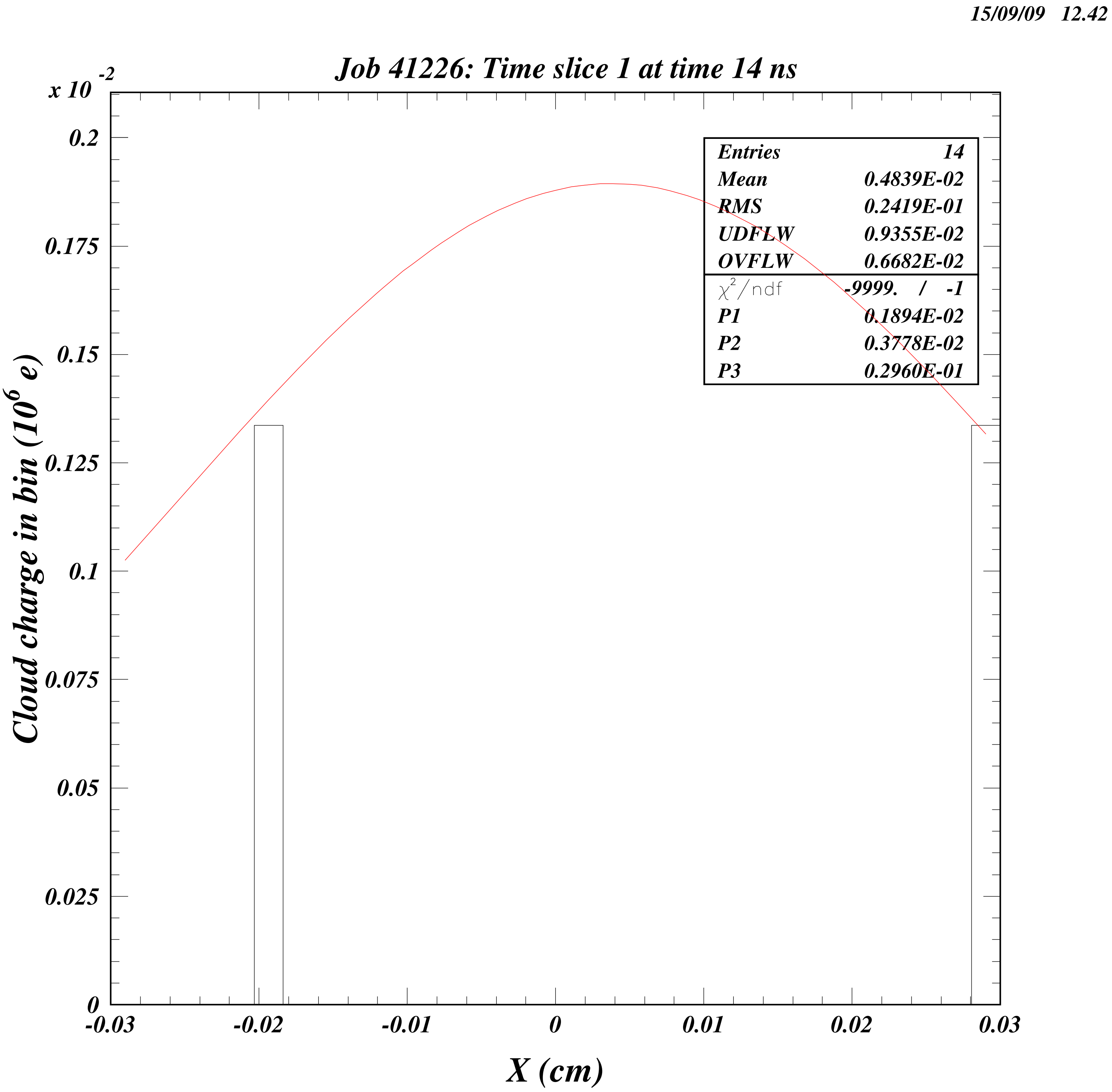


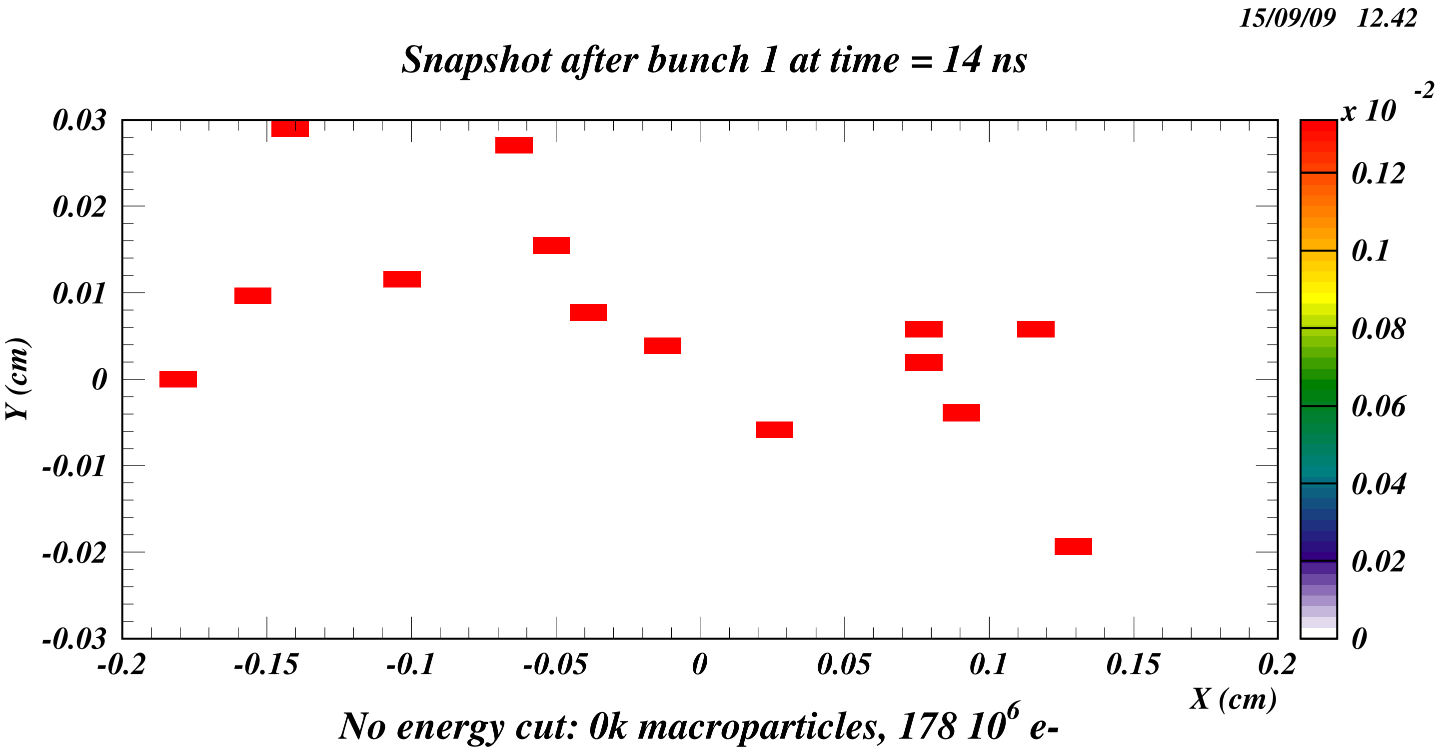
Job 41226: Beampipe-averaged Cloud Density (10^12 m^-3)
Electron Density (10^12 m^-3)
Time (ns)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
-50
0
50
100
150
200
250
300
350



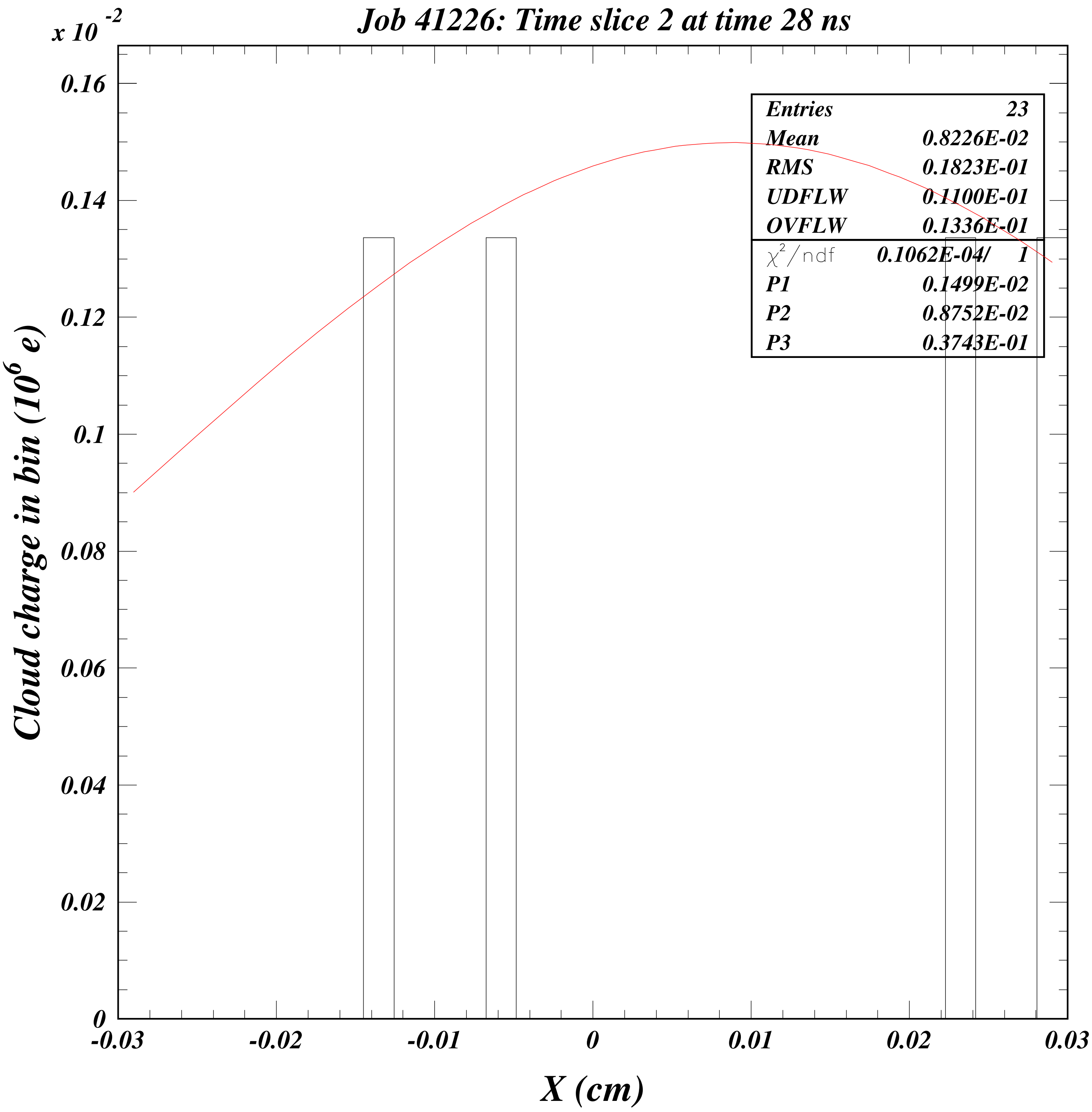
Macroparticle Statistics
Number of Macroparticles (10^3)
3000
2000
1000
900
800
700
600
500
400
300
200
0
50
100
150
200
250
300
Time (ns)

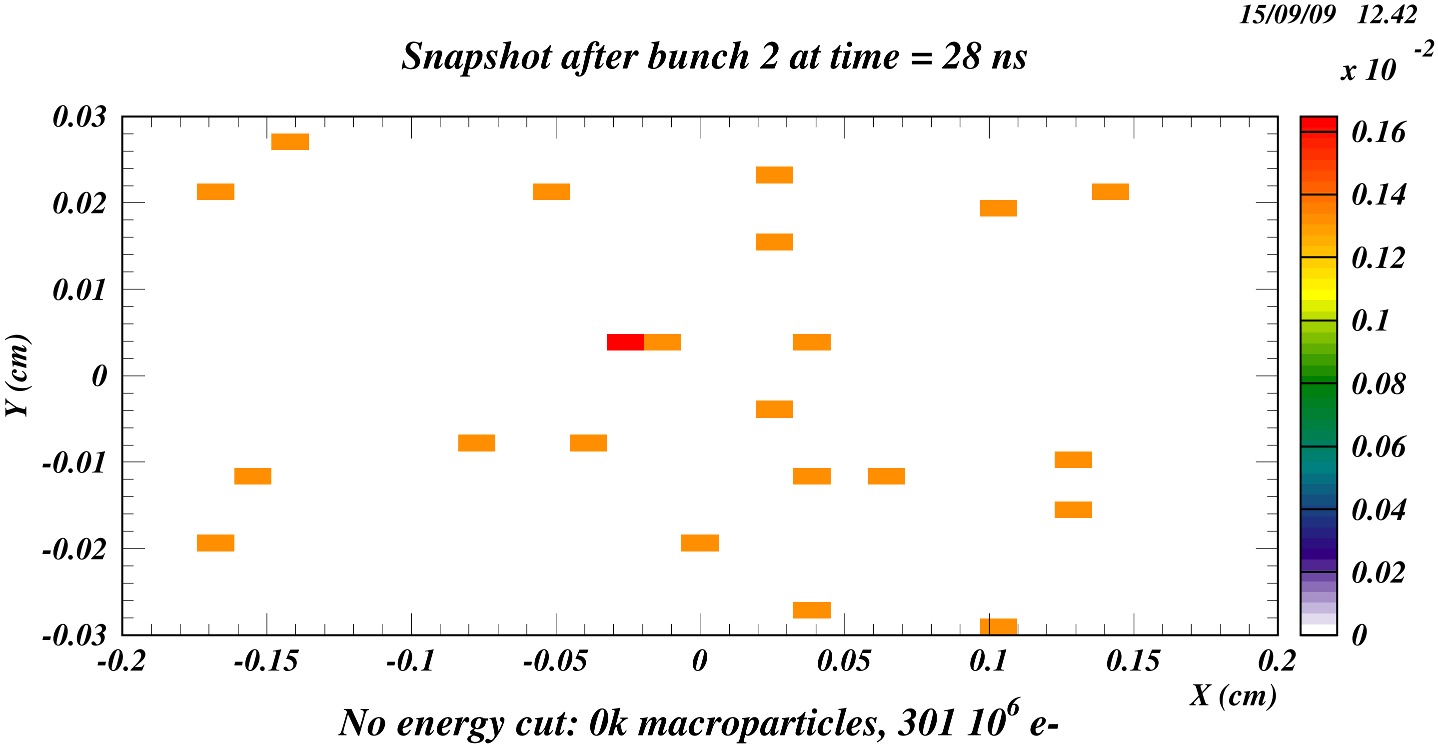


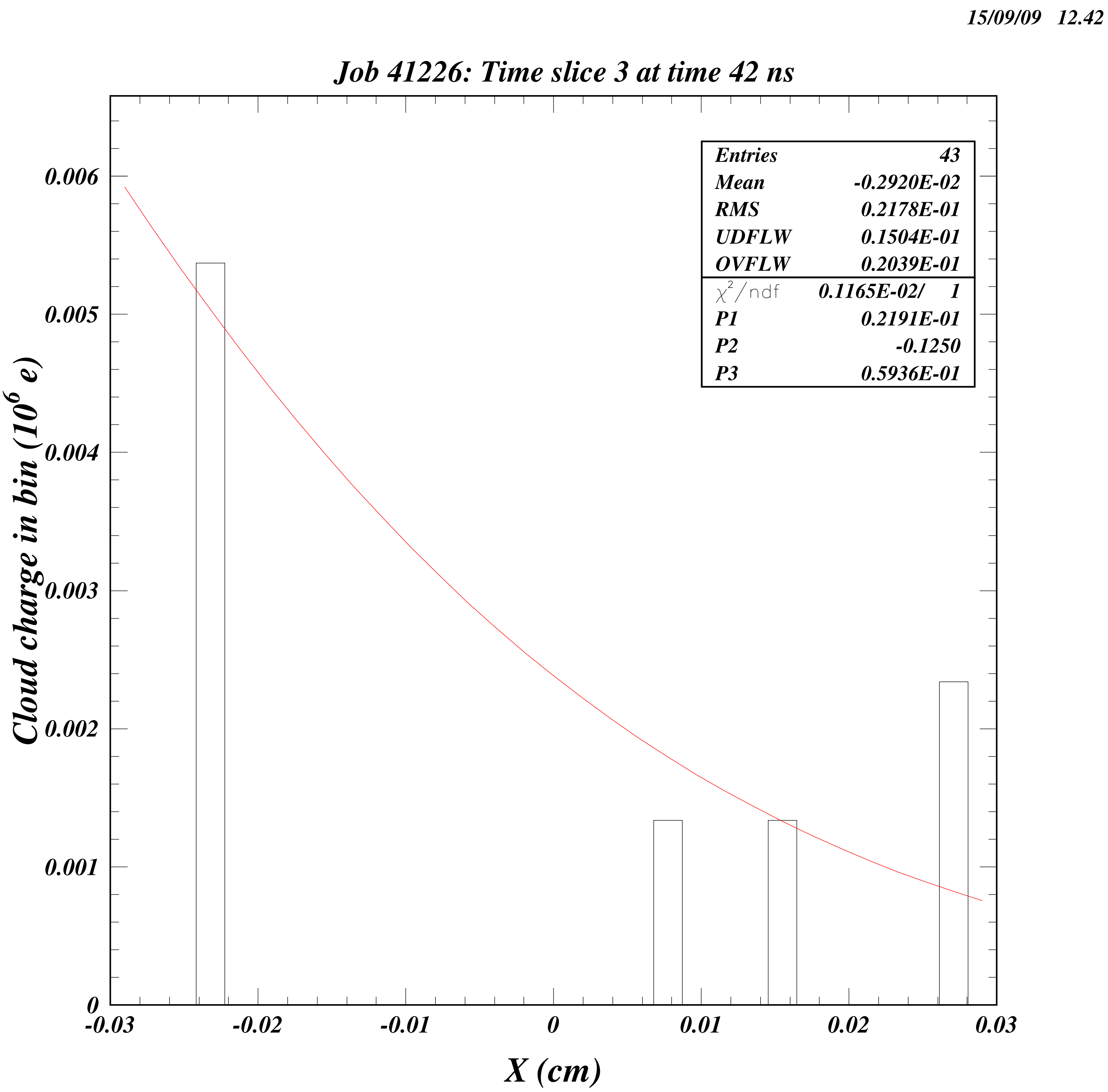
15/09/09 12.42
Job 41226: Time slice 1 at time 14 ns
x 10^-2
Entries 14
Mean 0.4839E-02
RMS 0.2419E-01
UDFLW 0.9355E-02
OVFLW 0.6682E-02
χ²/ndf -9999. / -1
P1 0.1894E-02
P2 0.3778E-02
P3 0.2960E-01
Cloud charge in bin (10^6 e)
X (cm)

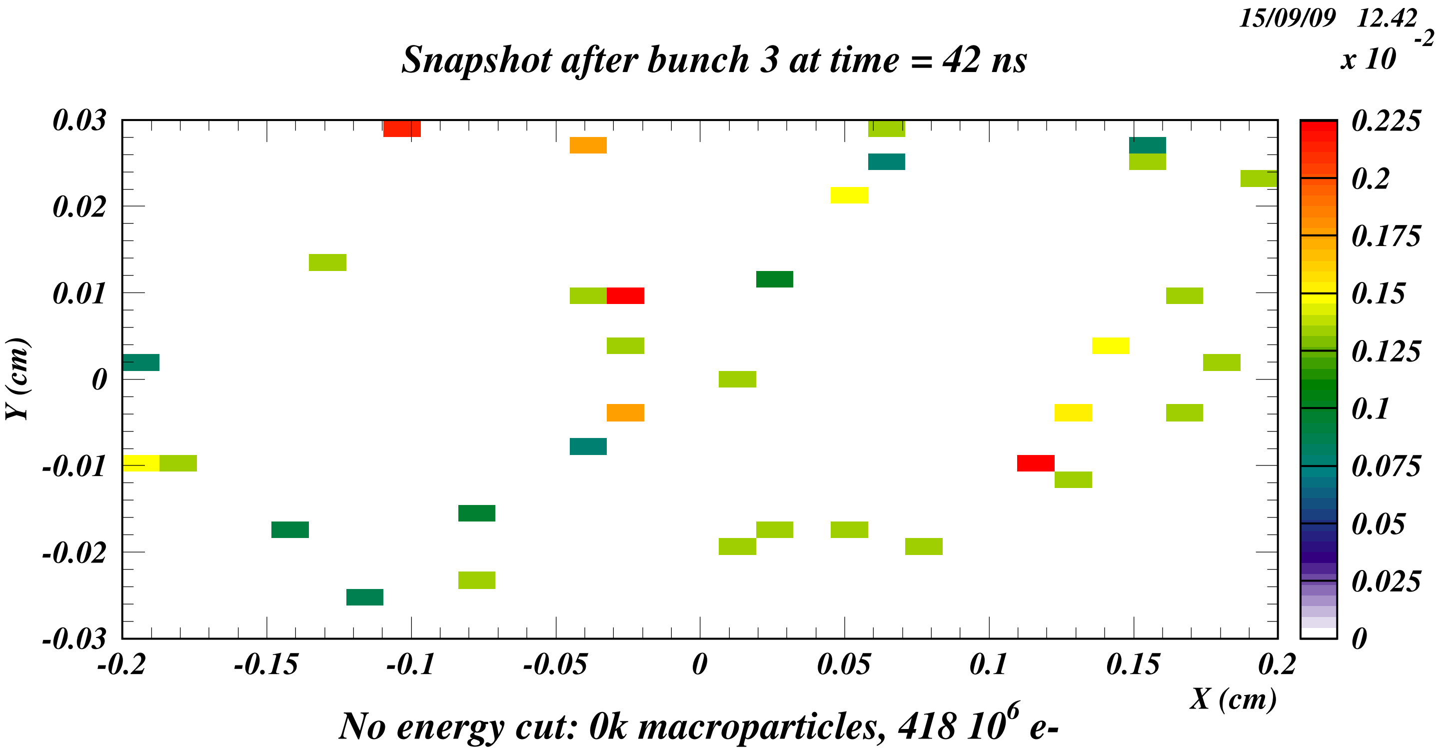


15/09/09 12.42
Snapshot after bunch 1 at time = 14 ns
Y (cm)
X (cm)
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
x 10 -2
0.12
0.1
0.08
0.06
0.04
0.02
0
No energy cut: 0k macroparticles, 178 10^6 e-

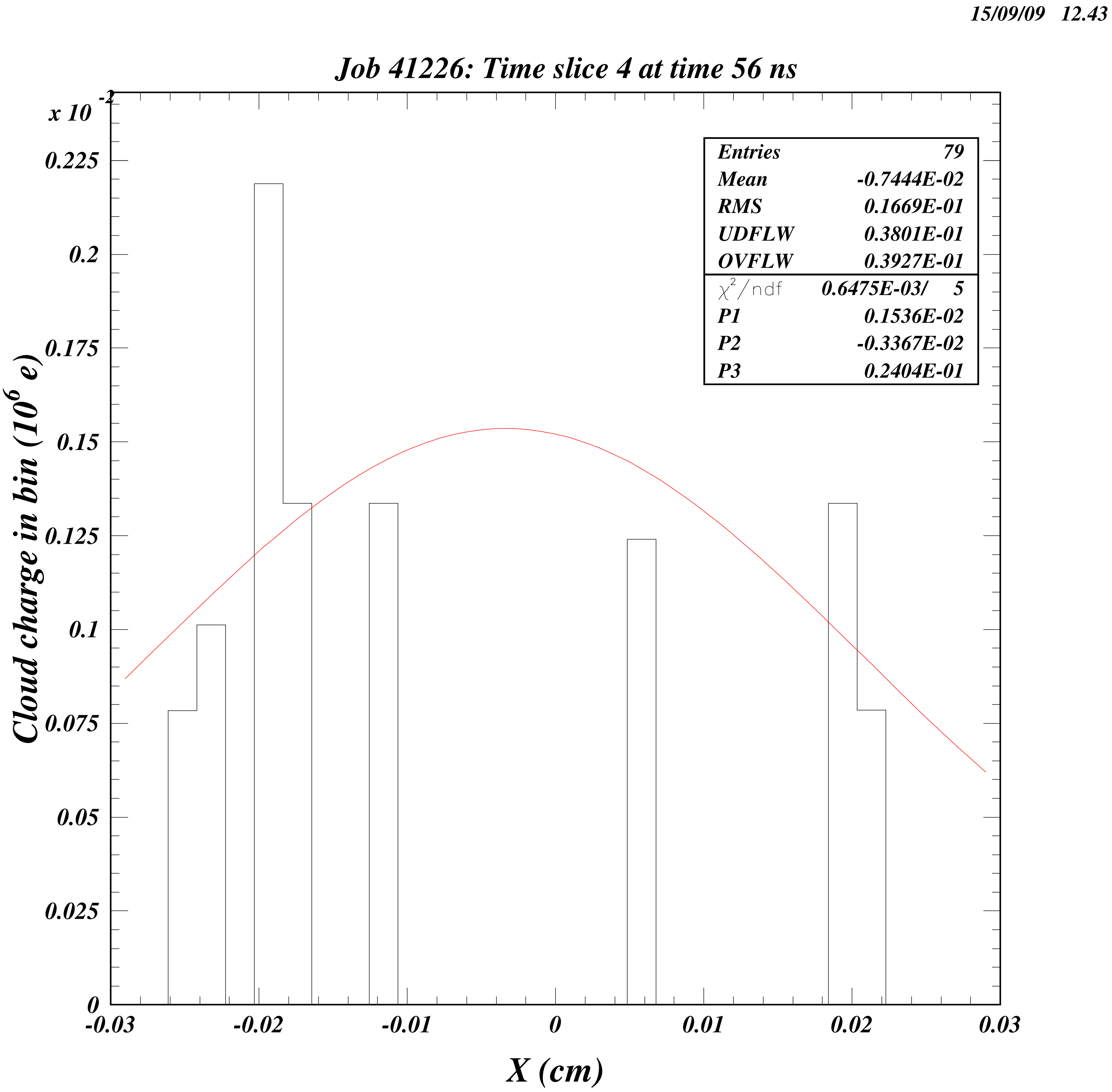

Job 41226: Time slice 2 at time 28 ns
x 10^-2
Cloud charge in bin (10^6 e)
X (cm)
Entries 23
Mean 0.8226E-02
RMS 0.1823E-01
UDFLW 0.1100E-01
OVFLW 0.1336E-01
χ²/ndf 0.1062E-04/ 1
P1 0.1499E-02
P2 0.8752E-02
P3 0.3743E-01
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.03
-0.02
-0.01
0
0.01
0.02
0.03


15/09/09 12.42
Snapshot after bunch 2 at time = 28 ns
x 10^-2
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
Y (cm)
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
X (cm)
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
No energy cut: 0k macroparticles, 301 10^6 e-

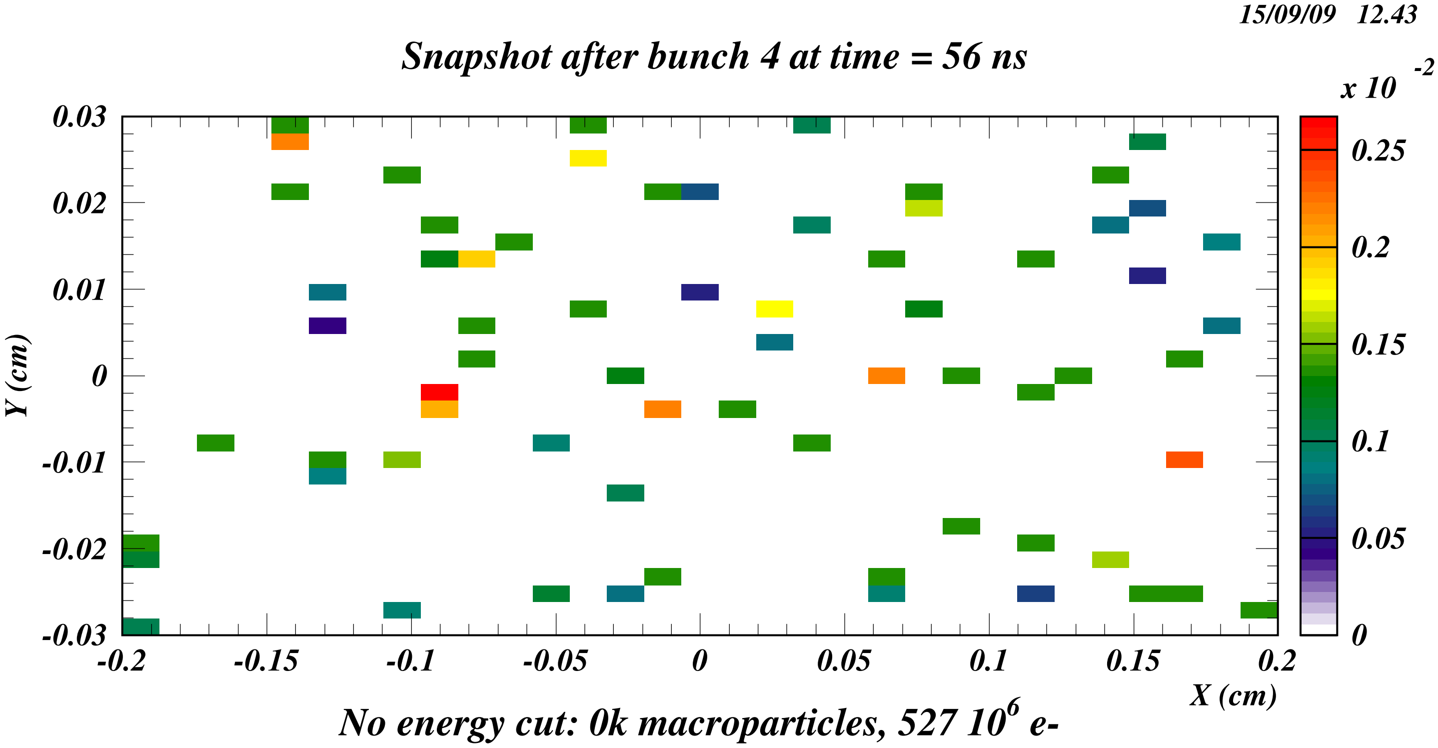

15/09/09 12.42
Job 41226: Time slice 3 at time 42 ns
Entries 43
Mean -0.2920E-02
RMS 0.2178E-01
UDFLW 0.1504E-01
OVFLW 0.2039E-01
χ²/ndf 0.1165E-02/ 1
P1 0.2191E-01
P2 -0.1250
P3 0.5936E-01
Cloud charge in bin (10⁶ e)
0.006
0.005
0.004
0.003
0.002
0.001
0
-0.03
-0.02
-0.01
0
0.01
0.02
0.03
X (cm)



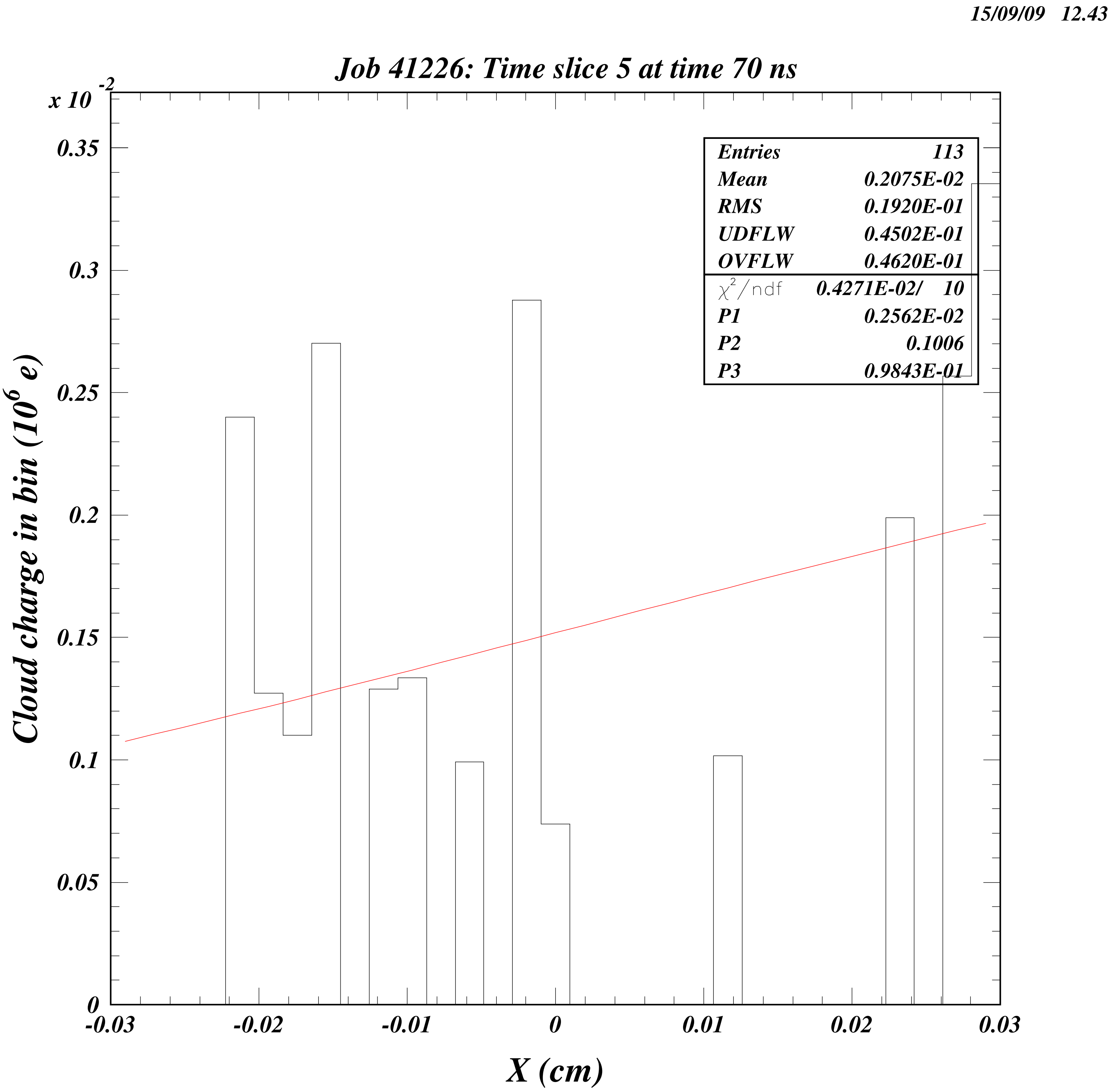
15/09/09 12.42
Snapshot after bunch 3 at time = 42 ns
x 10^-2
Y (cm)
X (cm)
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
0.225
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
0
No energy cut: 0k macroparticles, 418 10^6 e-



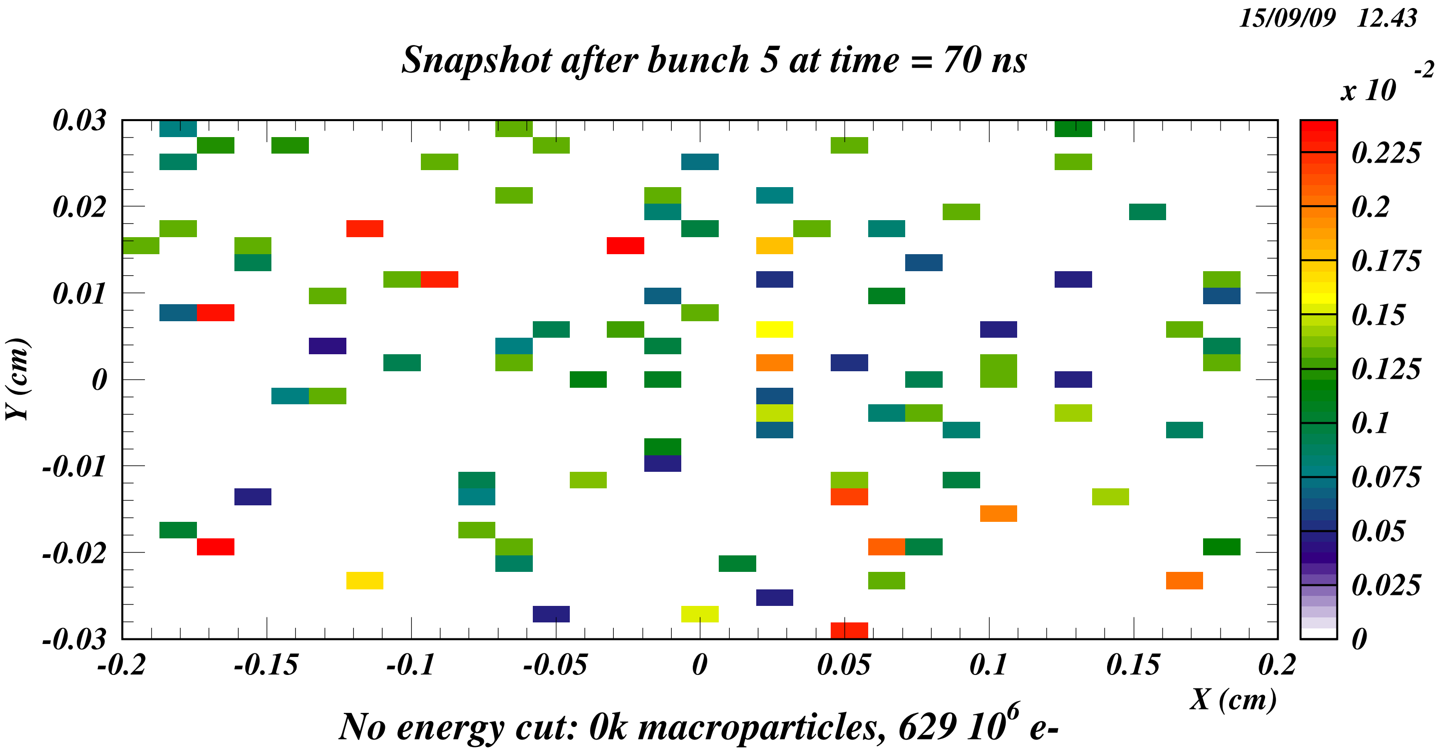
15/09/09 12.43
Job 41226: Time slice 4 at time 56 ns
x 10^-2
Entries 79
Mean -0.7444E-02
RMS 0.1669E-01
UDFLW 0.3801E-01
OVFLW 0.3927E-01
χ²/ndf 0.6475E-03/ 5
P1 0.1536E-02
P2 -0.3367E-02
P3 0.2404E-01
Cloud charge in bin (10^6 e)
X (cm)
0.225
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
0
-0.03
-0.02
-0.01
0
0.01
0.02
0.03



15/09/09 12.43
Snapshot after bunch 4 at time = 56 ns
x 10^-2
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
Y (cm)
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
X (cm)
0.25
0.2
0.15
0.1
0.05
0
No energy cut: 0k macroparticles, 527 10^6 e-

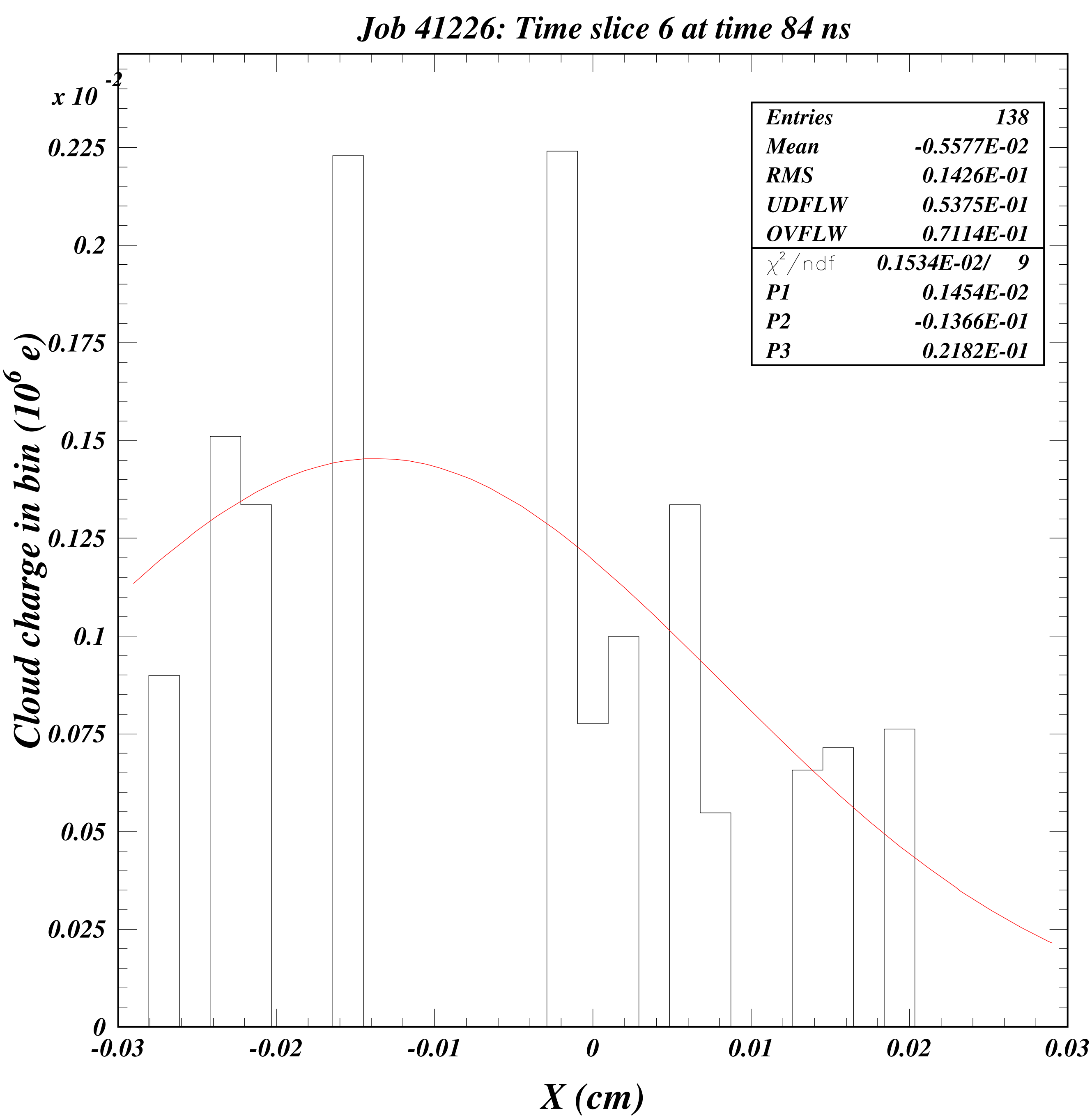


15/09/09 12.43
Job 41226: Time slice 5 at time 70 ns
x 10^-2
Entries 113
Mean 0.2075E-02
RMS 0.1920E-01
UDFLW 0.4502E-01
OVFLW 0.4620E-01
χ²/ndf 0.4271E-02/ 10
P1 0.2562E-02
P2 0.1006
P3 0.9843E-01
Cloud charge in bin (10^6 e)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.03
-0.02
-0.01
0
0.01
0.02
0.03
X (cm)

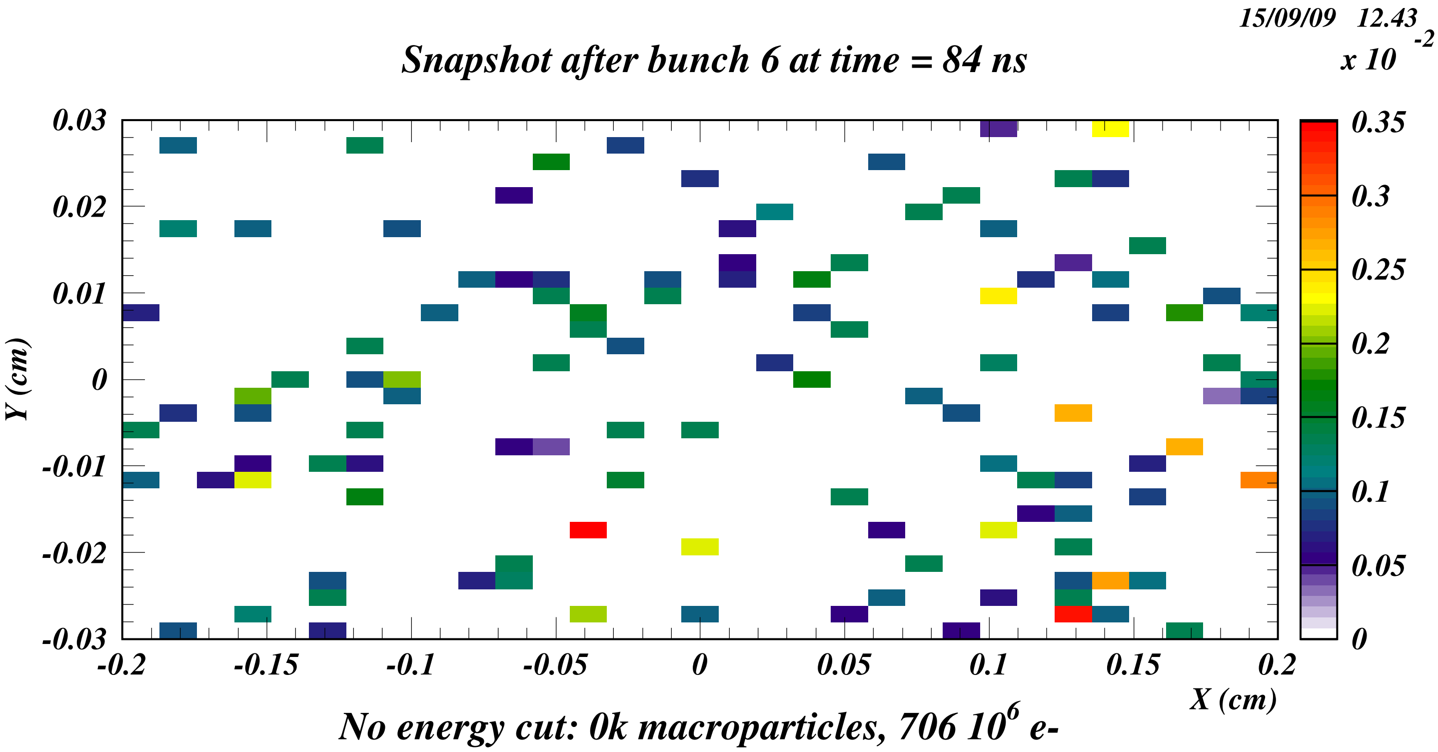


15/09/09 12.43
Snapshot after bunch 5 at time = 70 ns
x 10 -2
Y (cm)
X (cm)
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
0.225
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
0
No energy cut: 0k macroparticles, 629 10^6 e-

15/09/09 12.43

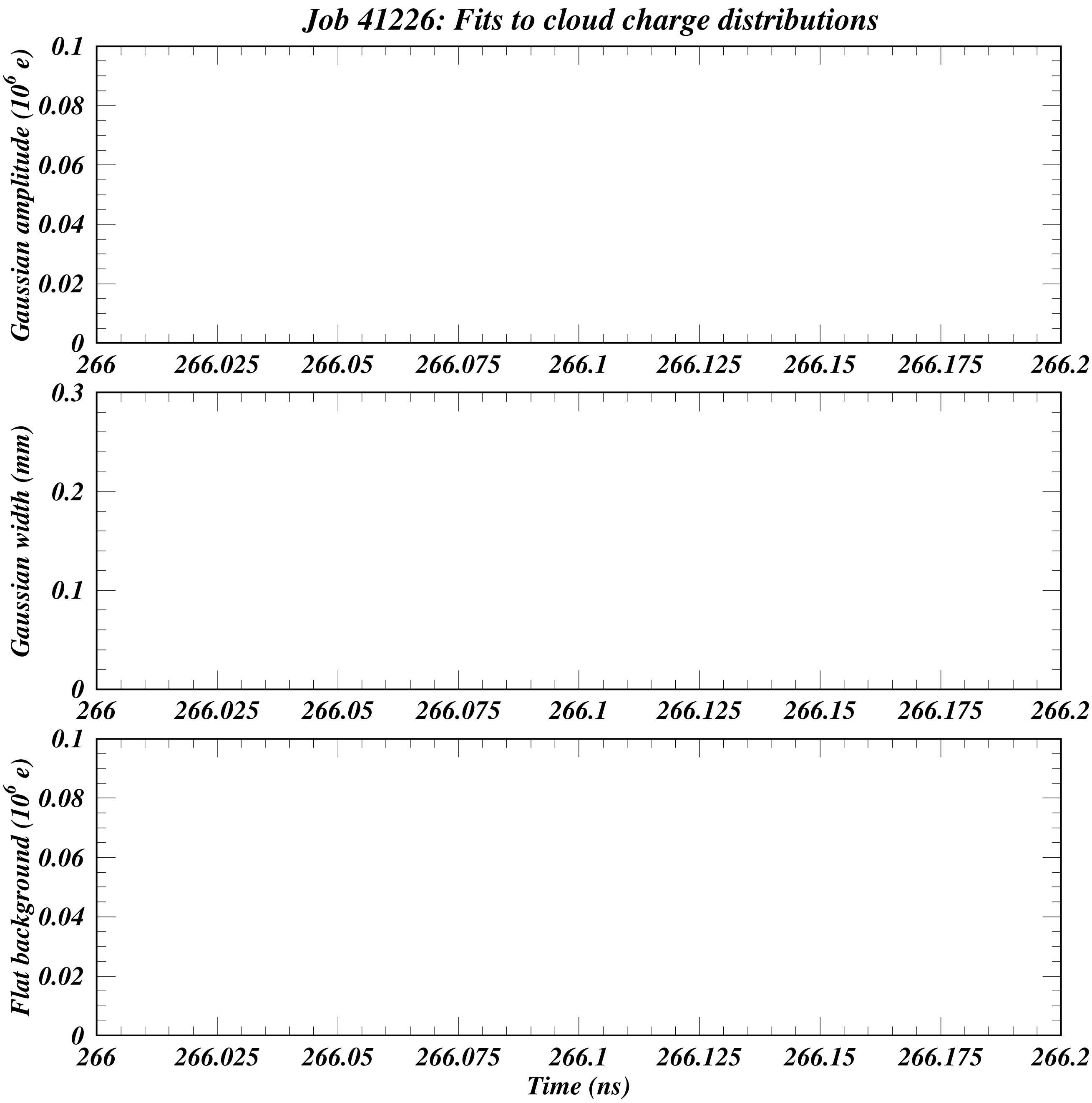


Job 41226: Time slice 6 at time 84 ns
x 10^-2
0.225
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
0
Cloud charge in bin (10^6 e)
-0.03
-0.02
-0.01
0
0.01
0.02
0.03
X (cm)
Entries 138
Mean -0.5577E-02
RMS 0.1426E-01
UDFLW 0.5375E-01
OVFLW 0.7114E-01
χ²/ndf 0.1534E-02/ 9
P1 0.1454E-02
P2 -0.1366E-01
P3 0.2182E-01



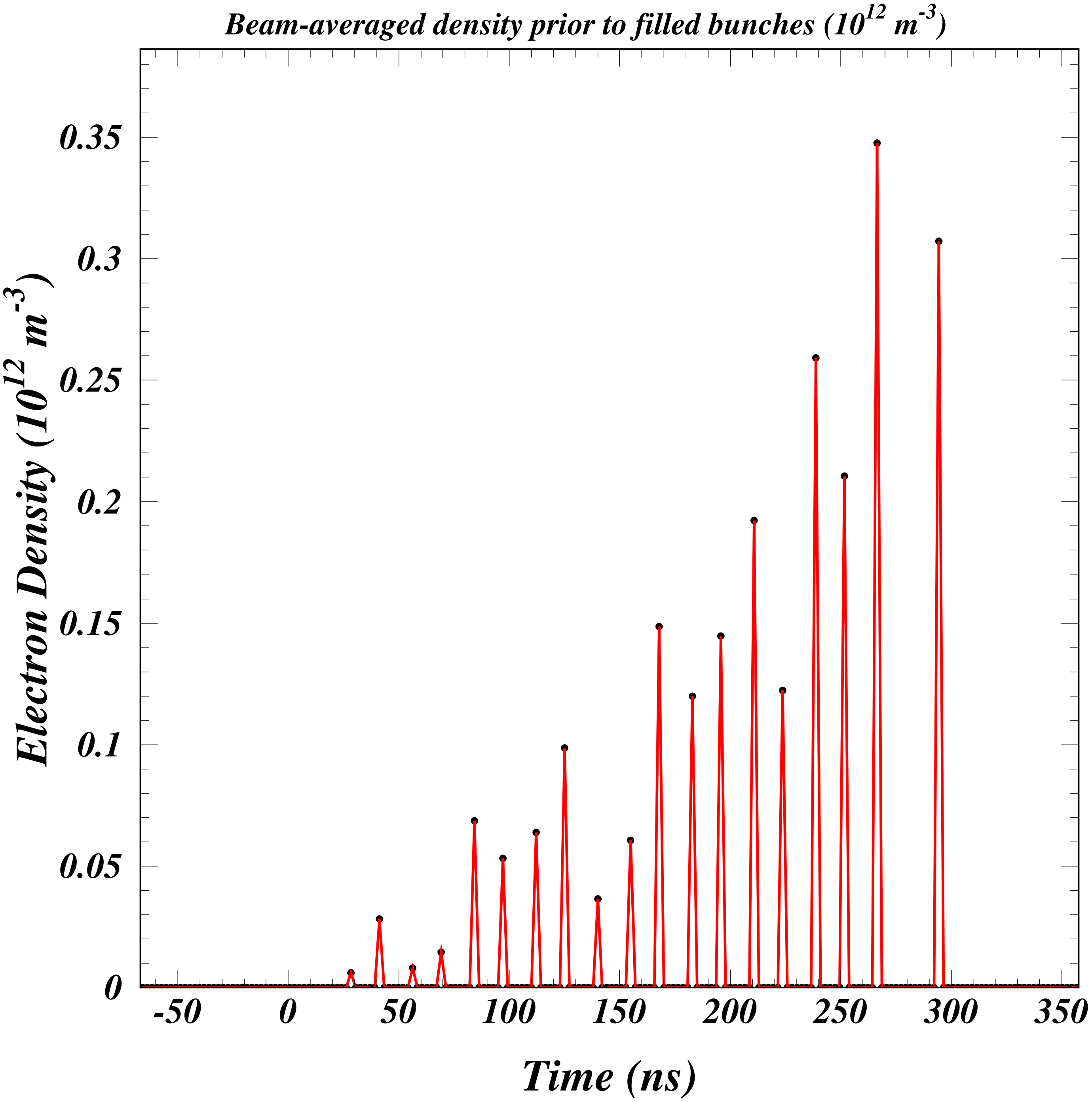
15/09/09 12.43
Snapshot after bunch 6 at time = 84 ns
x 10^-2
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
Y (cm)
-0.2
-0.15
-0.1
-0.05
0
0.05
0.1
0.15
0.2
X (cm)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
No energy cut: 0k macroparticles, 706 10^6 e-

15/09/09 12.43

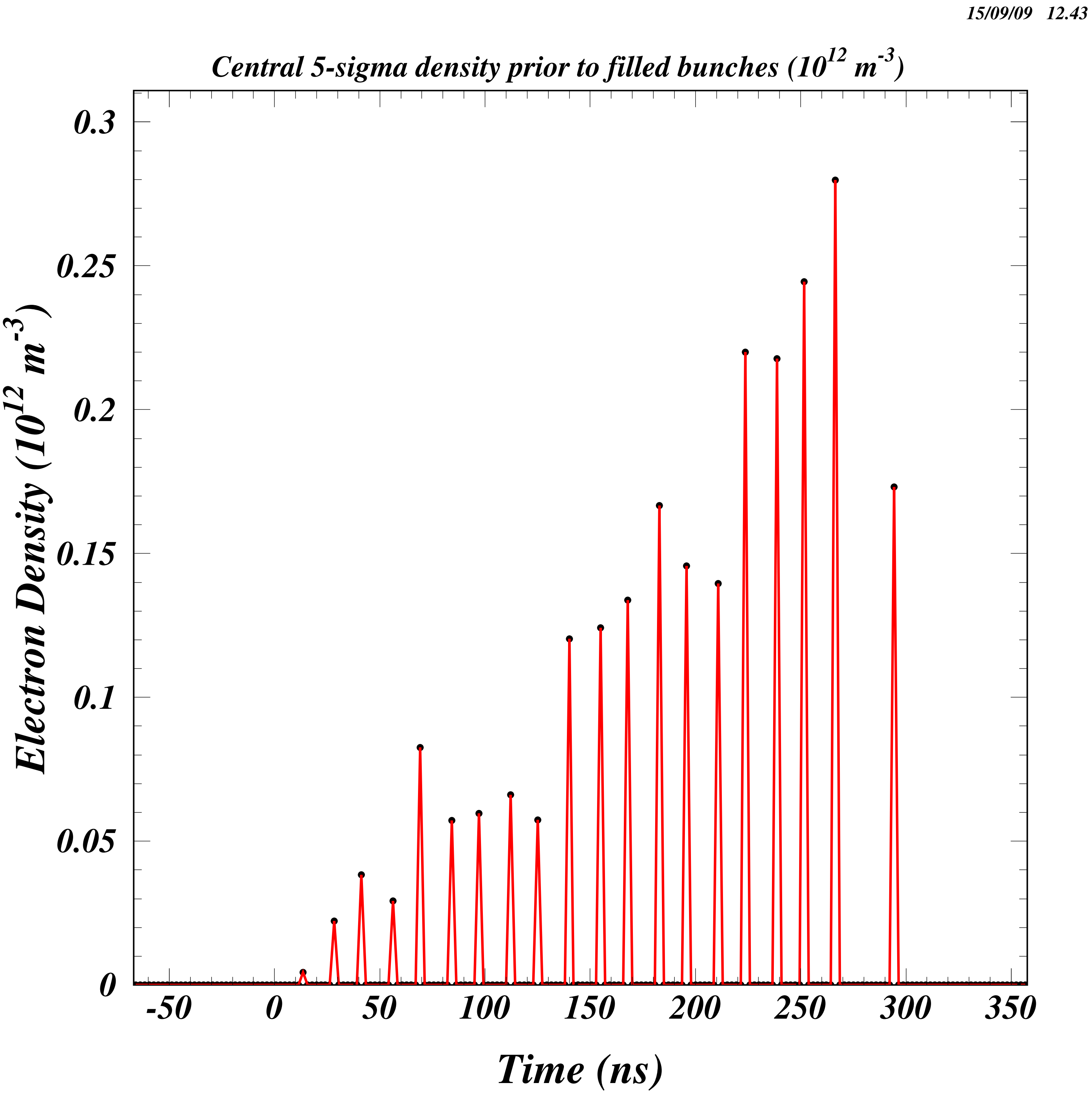


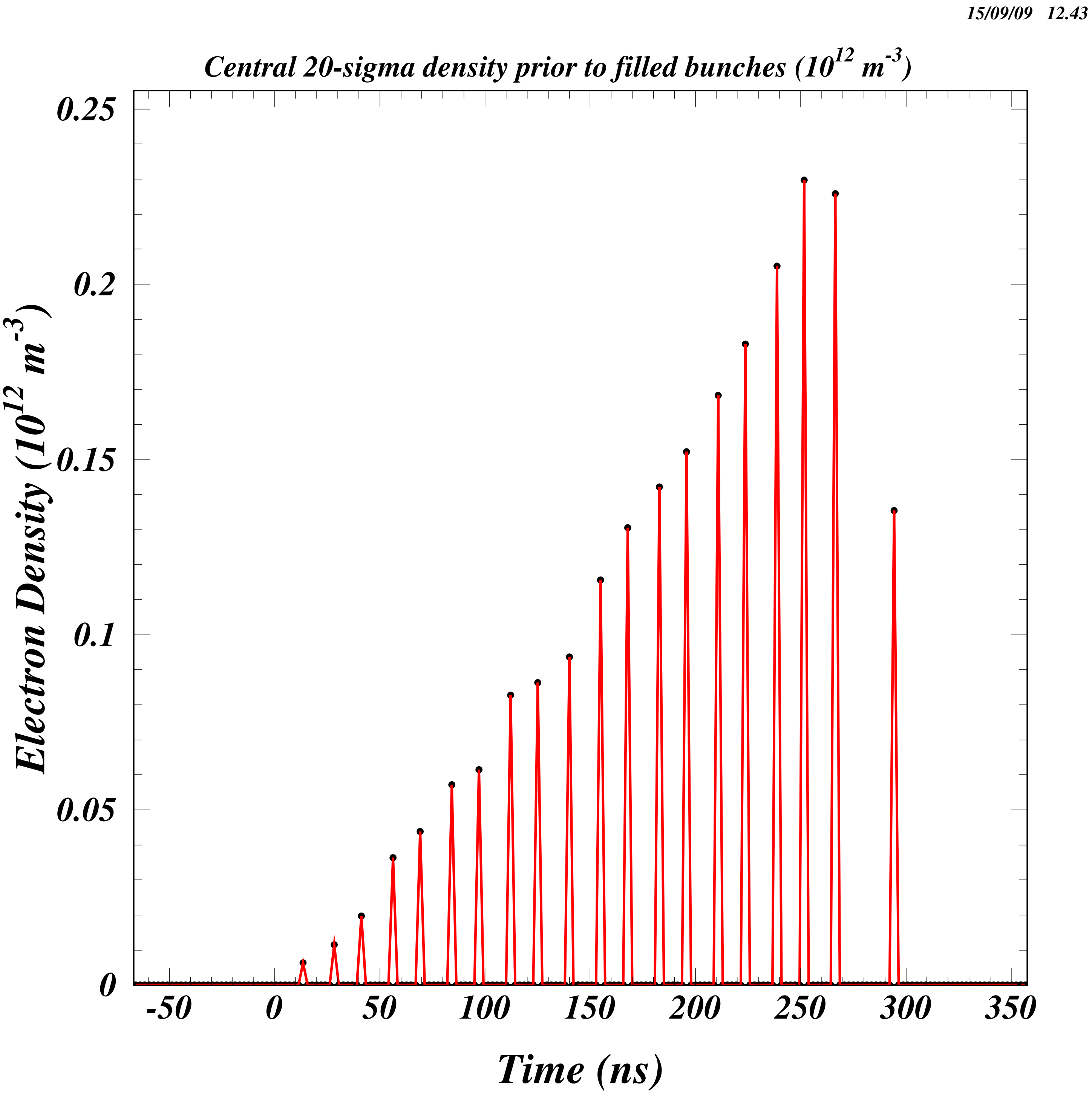
Job 41226: Fits to cloud charge distributions
Gaussian amplitude (10^6 e)
0.1
0.08
0.06
0.04
0.02
0
266
266.025
266.05
266.075
266.1
266.125
266.15
266.175
266.2
Gaussian width (mm)
0.3
0.2
0.1
0
Flat background (10^6 e)
Time (ns)

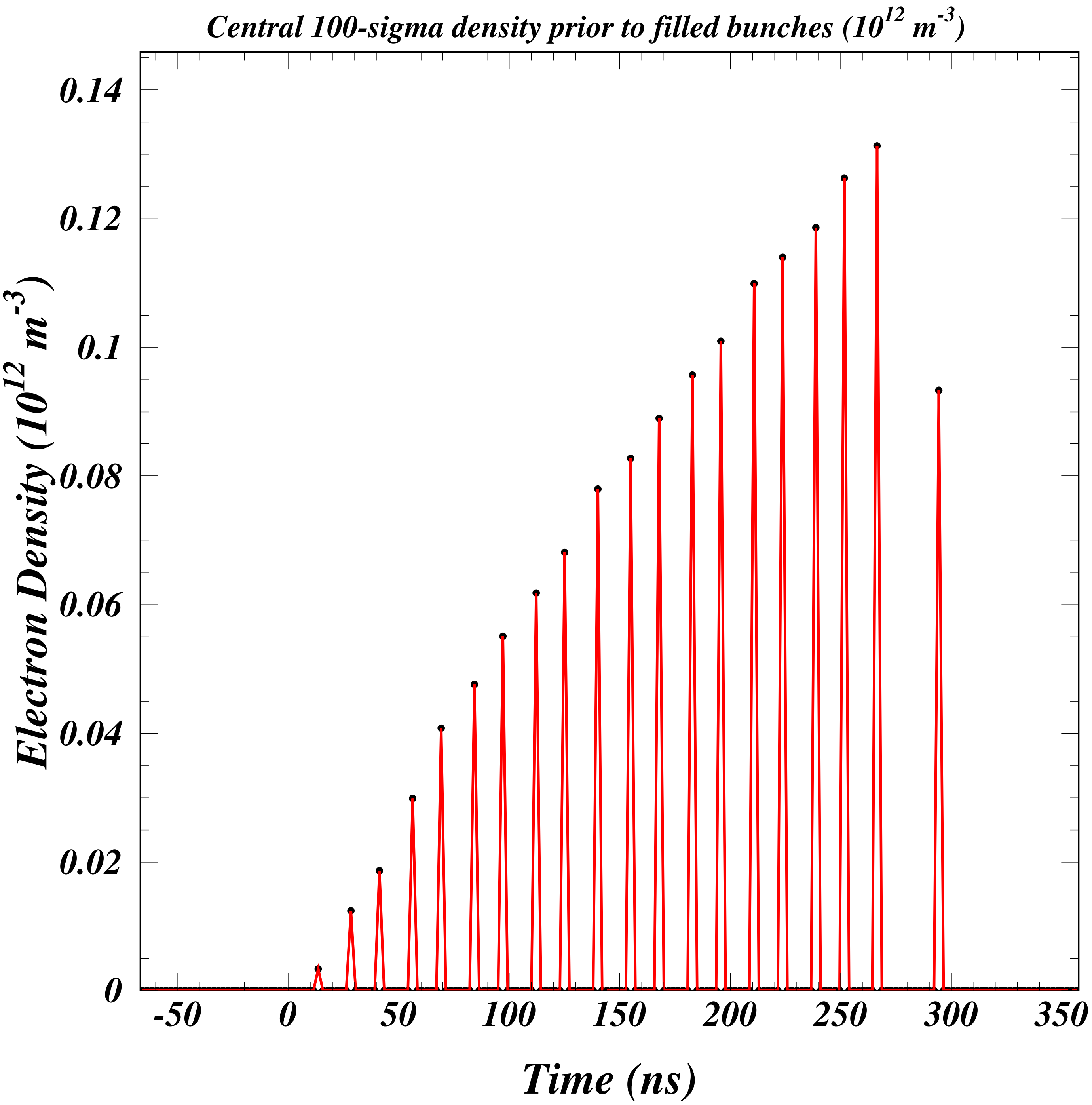
15/09/09 12.43



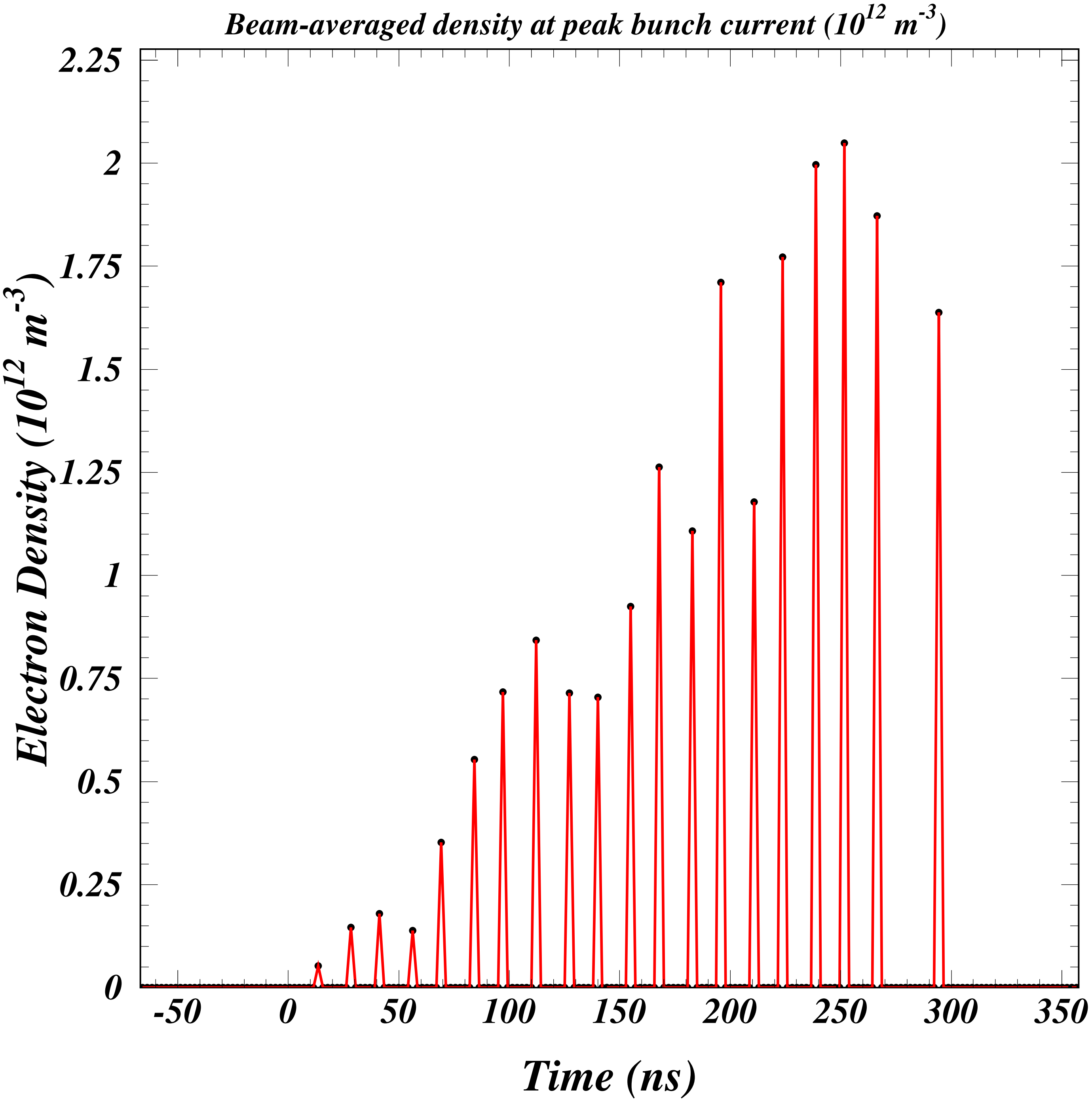
Beam-averaged density prior to filled bunches (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
-50
0
50
100
150
200
250
300
350
Time (ns)


15/09/09 12.43
Central 5-sigma density prior to filled bunches (10^12 m^-3)
Electron Density (10^12 m^-3)
0.3
0.25
0.2
0.15
0.1
0.05
0
-50
0
50
100
150
200
250
300
350
Time (ns)

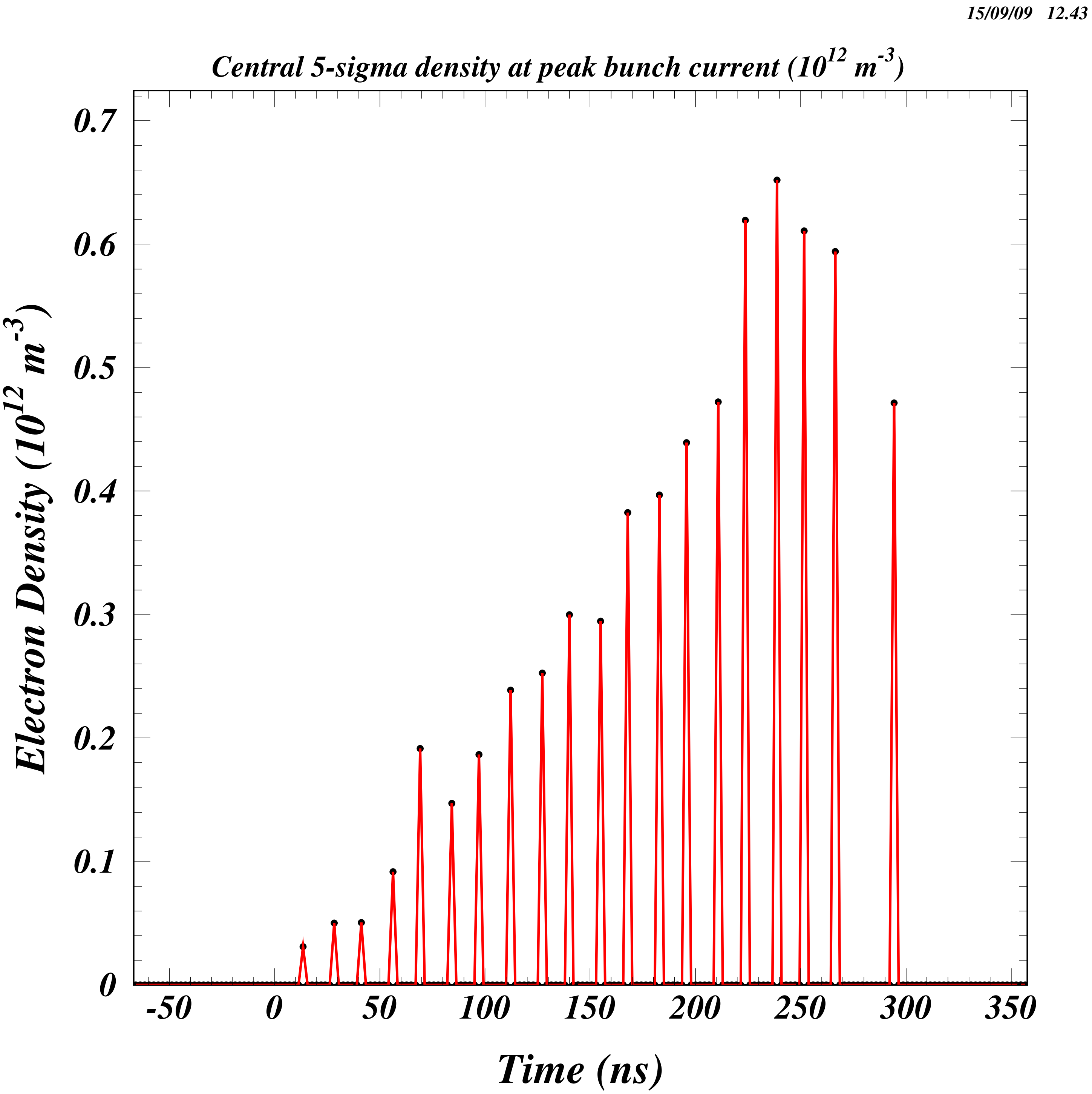

15/09/09 12.43
Central 20-sigma density prior to filled bunches (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
0
0.05
0.1
0.15
0.2
0.25
-50
0
50
100
150
200
250
300
350
Time (ns)

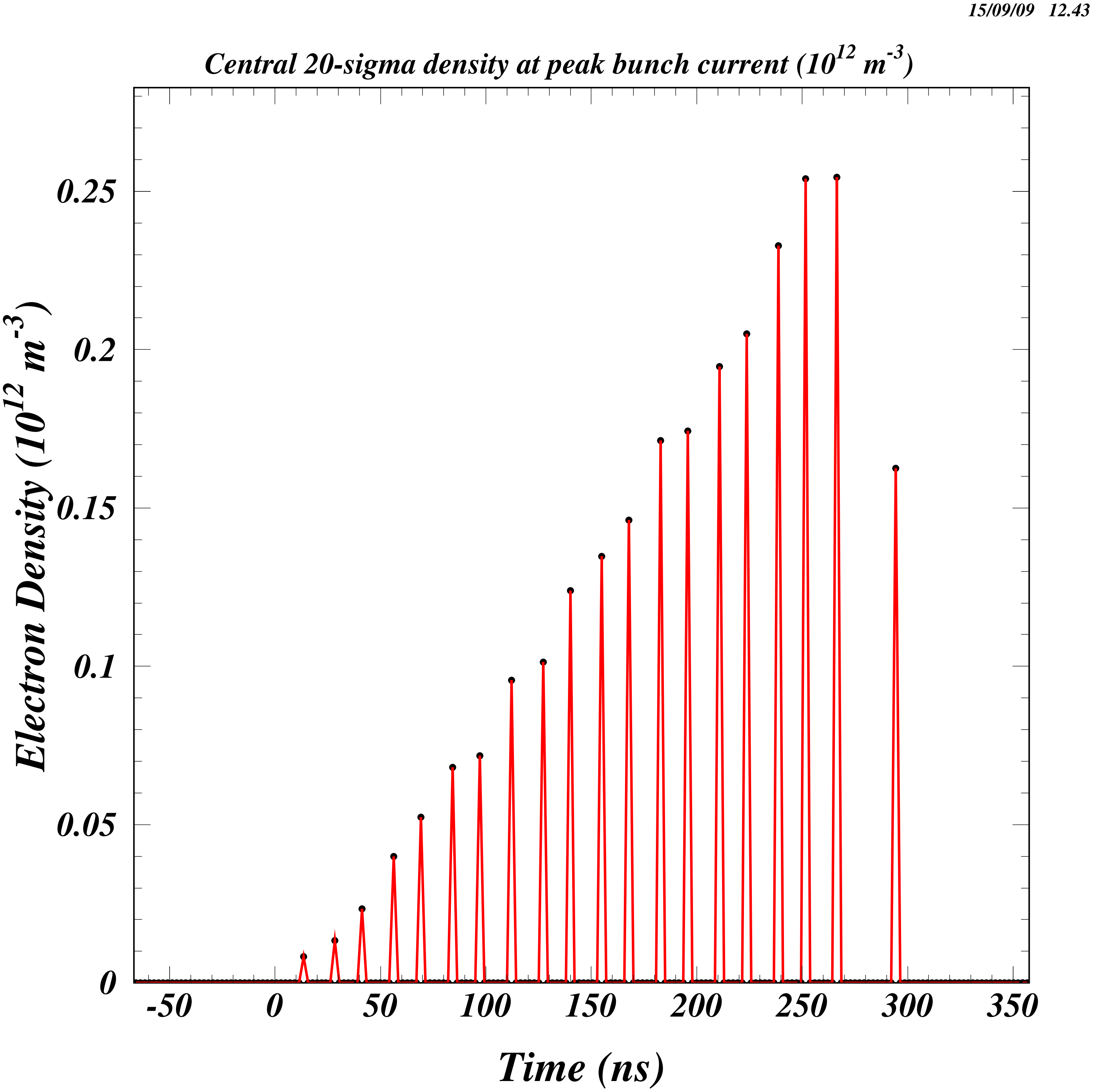

Central 100-sigma density prior to filled bunches (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
-50
0
50
100
150
200
250
300
350
Time (ns)

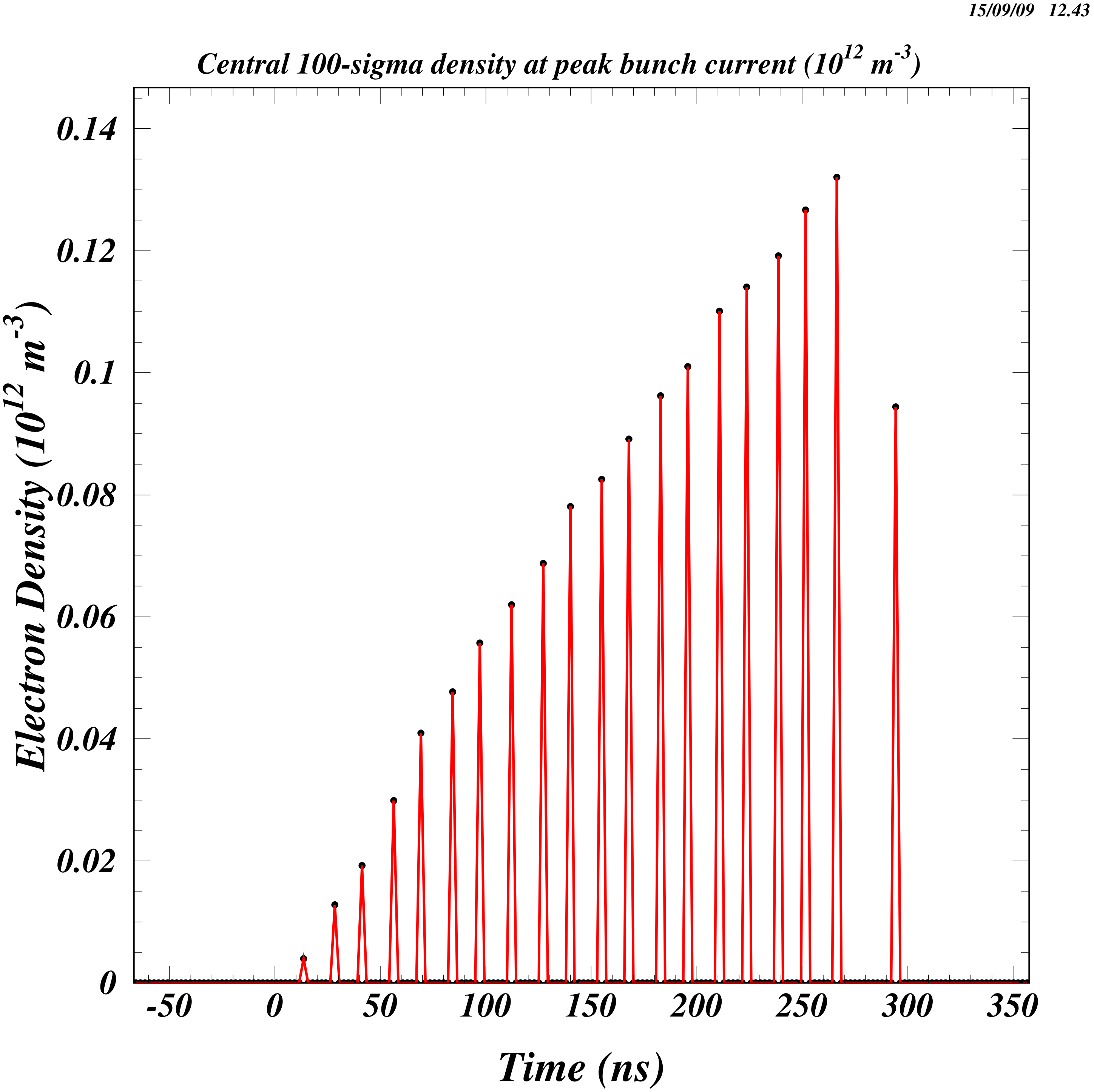
15/09/09 12.43

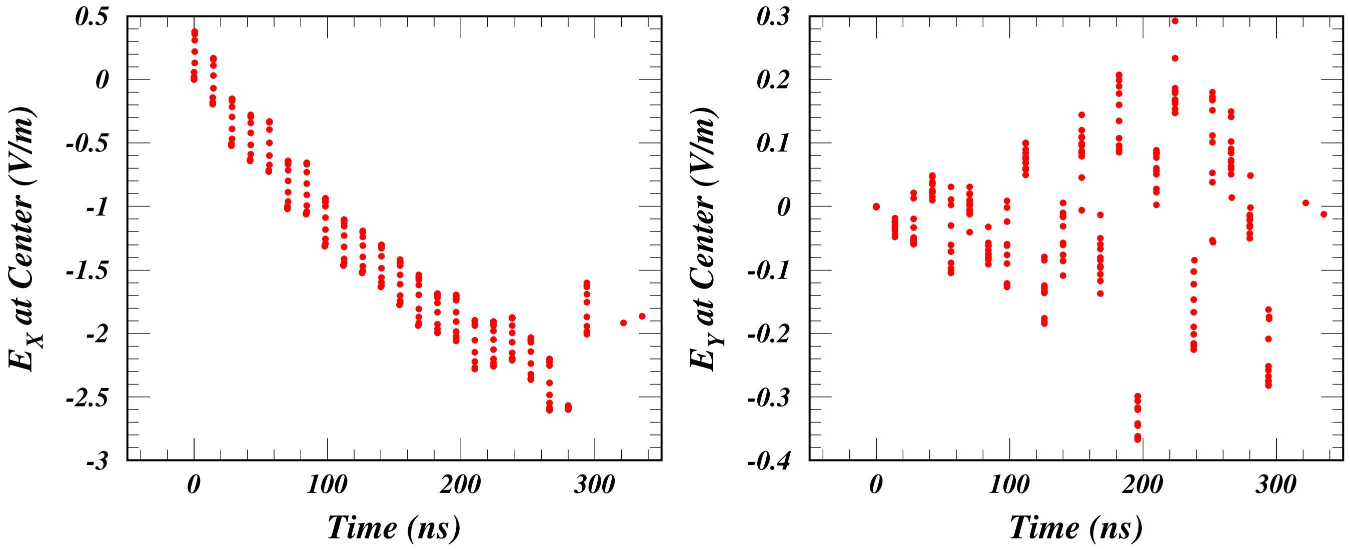


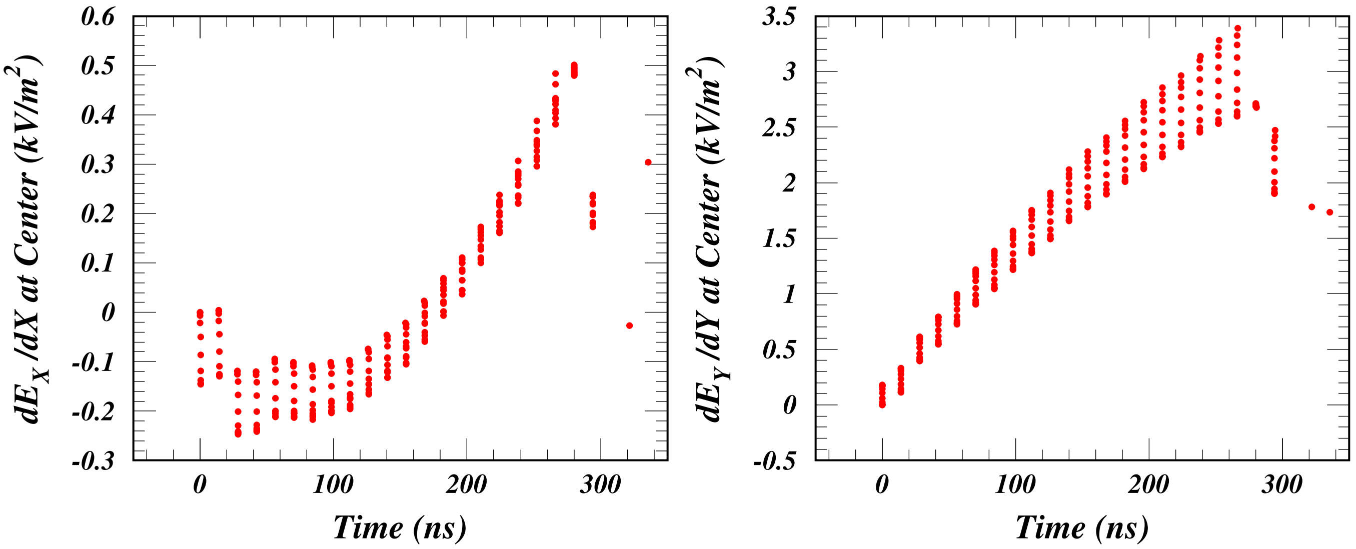
Beam-averaged density at peak bunch current (10^{12} m^{-3})
2.25
2
1.75
1.5
1.25
1
0.75
0.5
0.25
0
Electron Density (10^{12} m^{-3})
-50
0
50
100
150
200
250
300
350
Time (ns)


15/09/09 12.43
Central 5-sigma density at peak bunch current (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
-50
0
50
100
150
200
250
300
350
Time (ns)

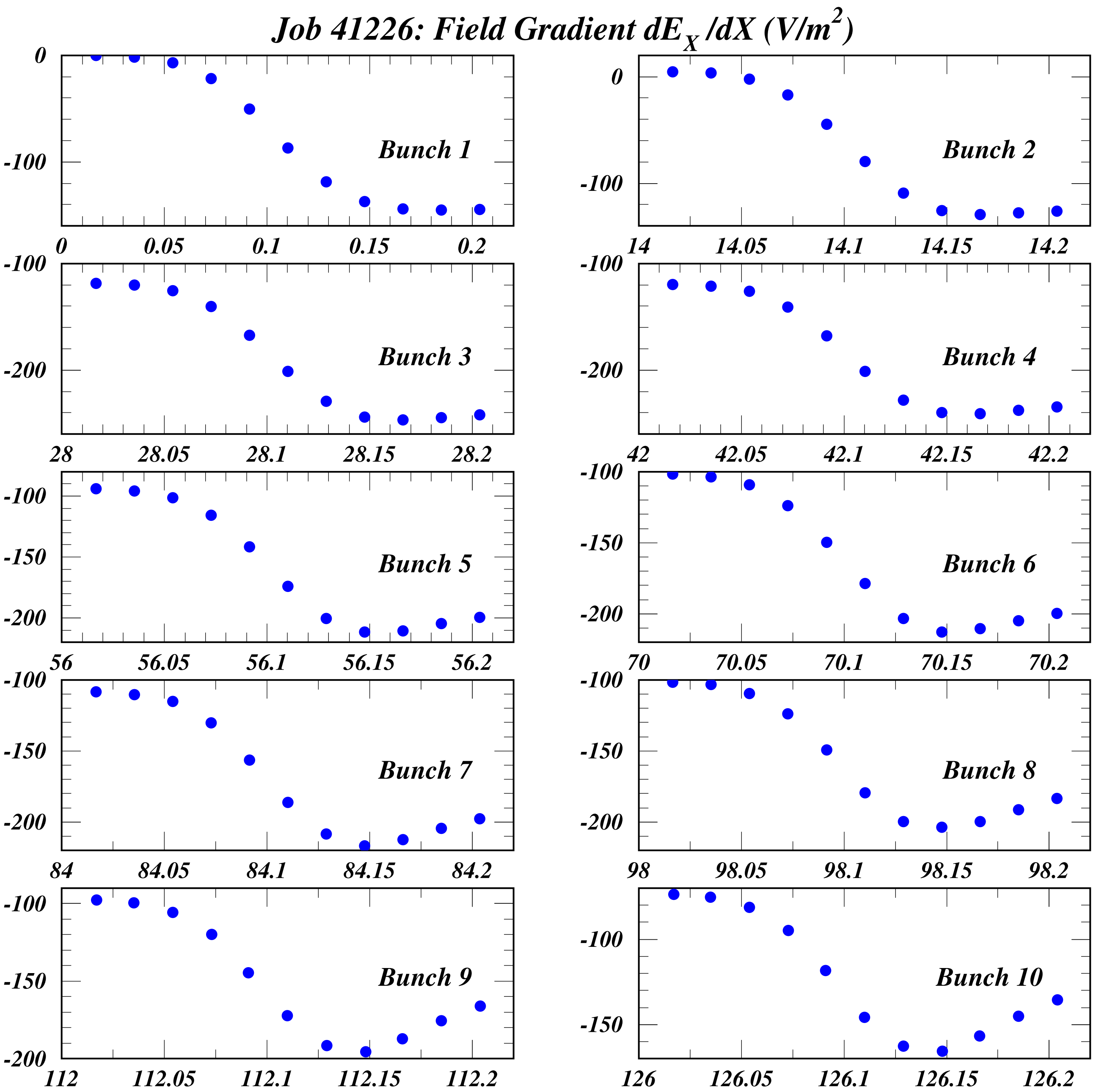

15/09/09 12.43
Central 20-sigma density at peak bunch current (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
0.25
0.2
0.15
0.1
0.05
0
-50
0
50
100
150
200
250
300
350
Time (ns)


15/09/09 12.43
Central 100-sigma density at peak bunch current (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
-50
0
50
100
150
200
250
300
350
Time (ns)


0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
E_X at Center (V/m)
0
100
200
300
Time (ns)
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
E_Y at Center (V/m)
0
100
200
300
Time (ns)

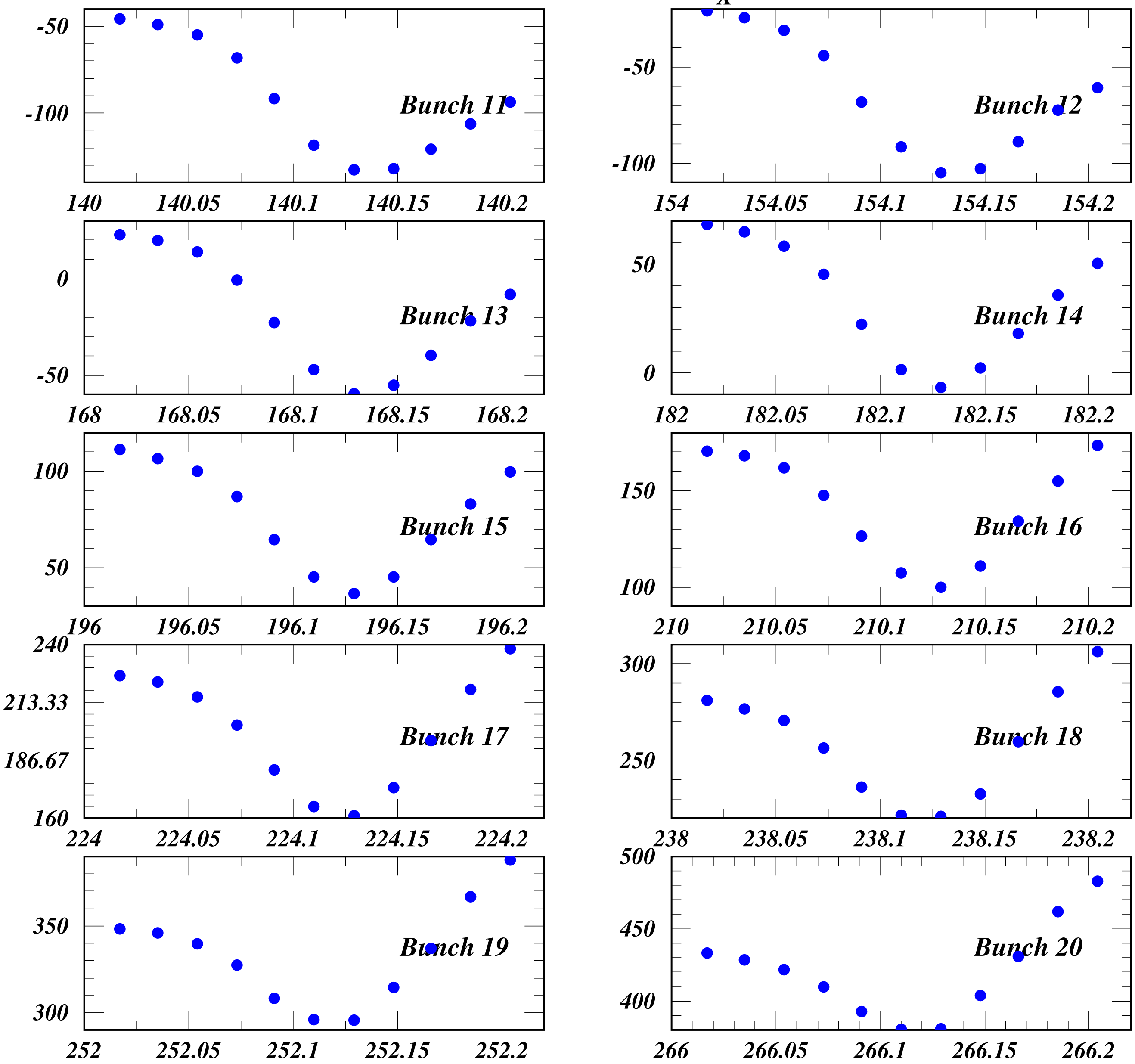


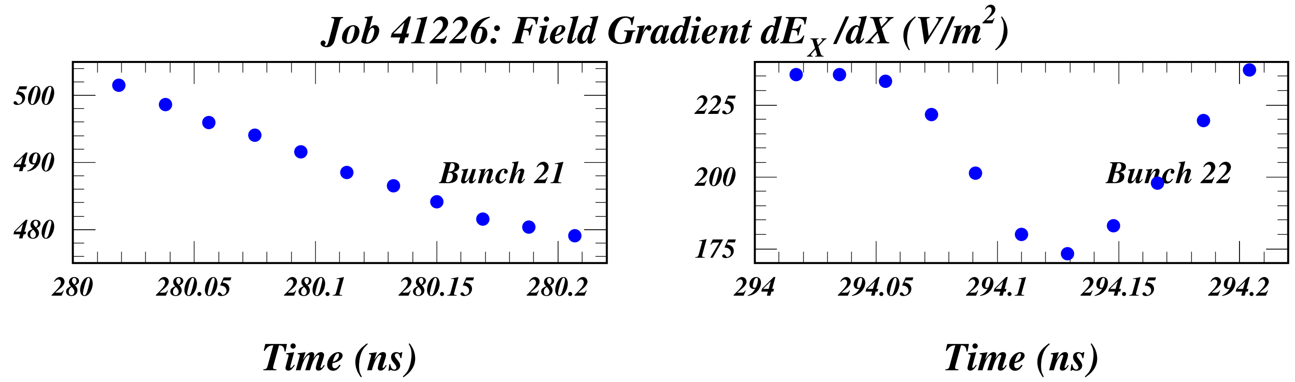
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
0
100
200
300
Time (ns)
dE_X /dX at Center (kV/m^2)
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
0
100
200
300
Time (ns)
dE_Y /dY at Center (kV/m^2)



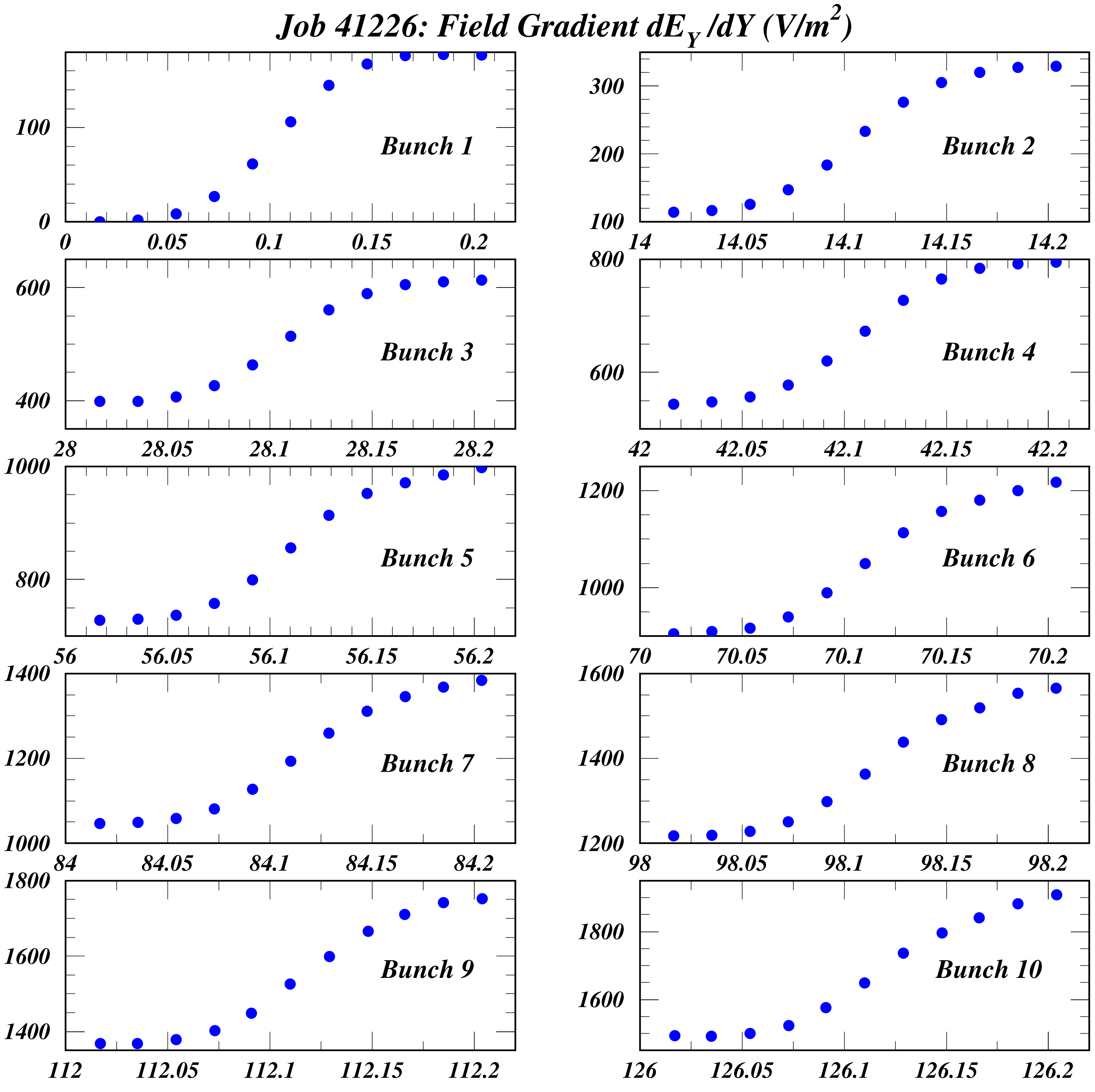
Job 41226: Field Gradient dE_X /dX (V/m^2)
Bunch 1
Bunch 2
Bunch 3
Bunch 4
Bunch 5
Bunch 6
Bunch 7
Bunch 8
Bunch 9
Bunch 10

$$Job\ 41226:\ Field\ Gradient\ dE_X/dX\ (V/m^2)$$

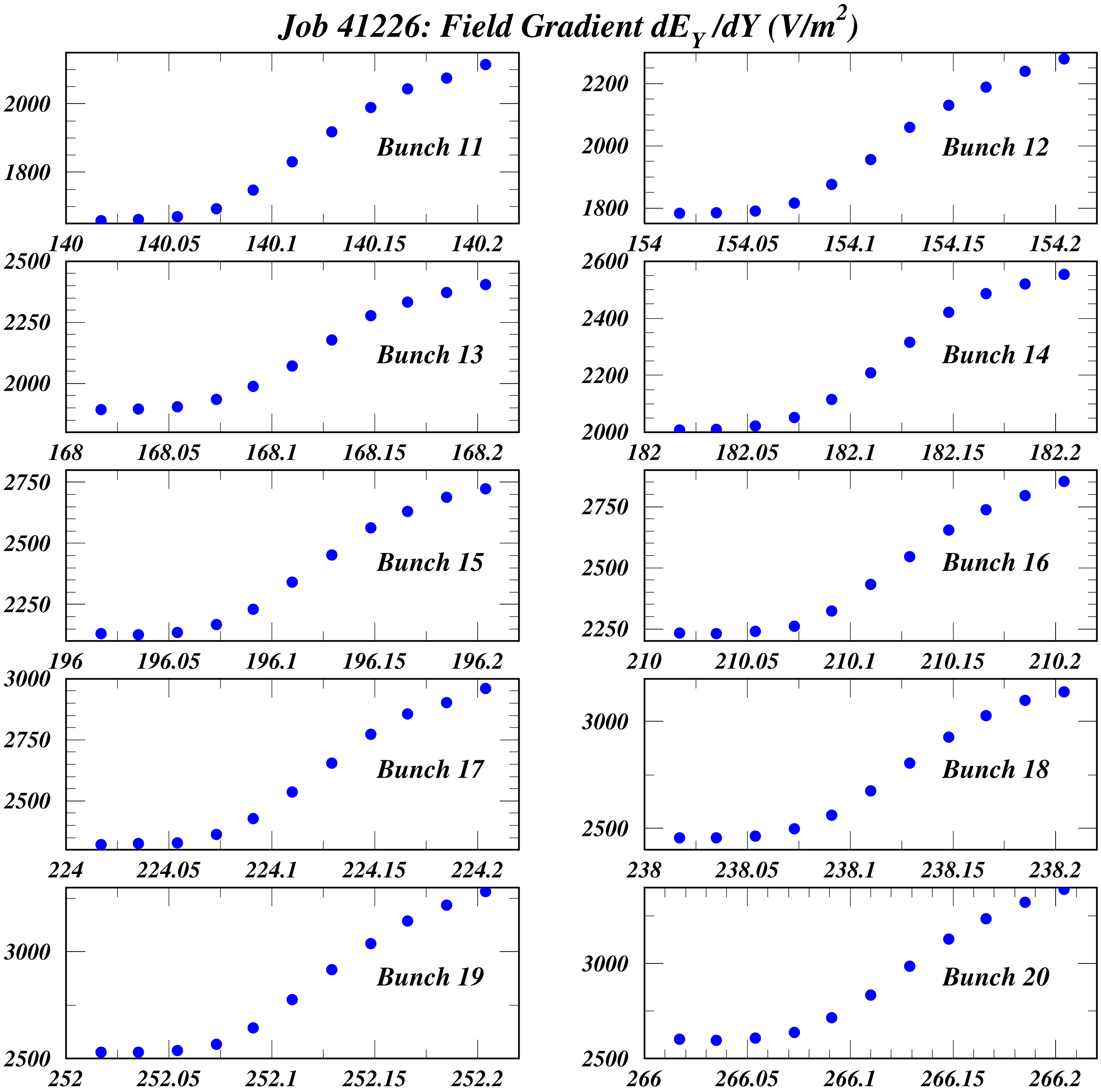


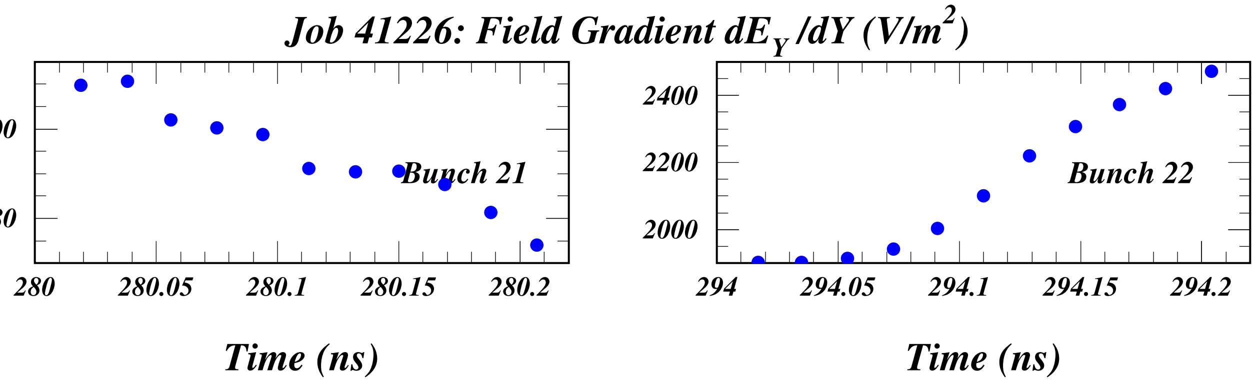


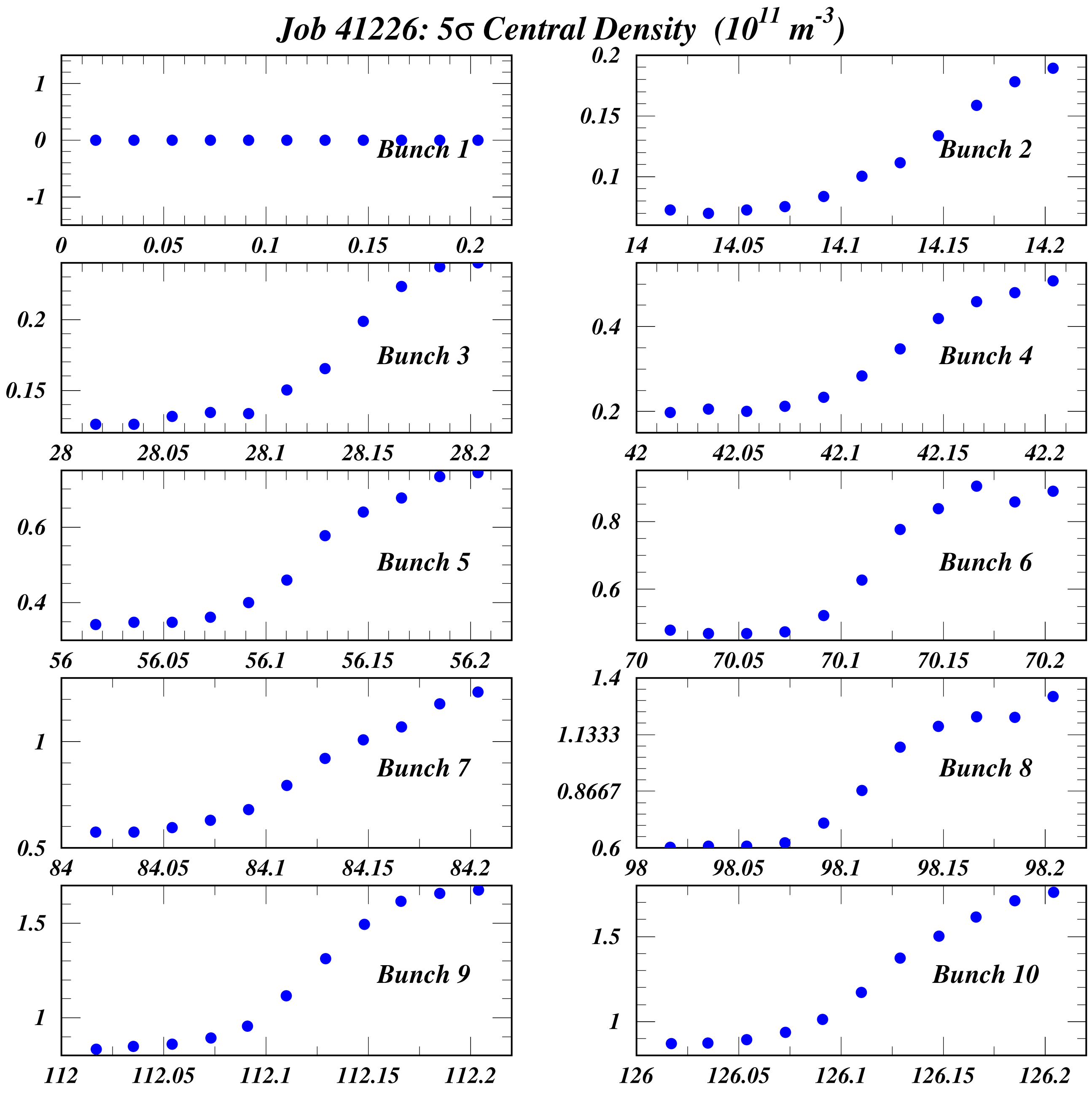
Job 41226: Field Gradient dE_X /dX (V/m^2)
500
490
480
Bunch 21
280
280.05
280.1
280.15
280.2
Time (ns)
225
200
175
Bunch 22
294
294.05
294.1
294.15
294.2
Time (ns)



Job 41226: Field Gradient dE_Y/dY (V/m^2)
Bunch 1
Bunch 2
Bunch 3
Bunch 4
Bunch 5
Bunch 6
Bunch 7
Bunch 8
Bunch 9
Bunch 10

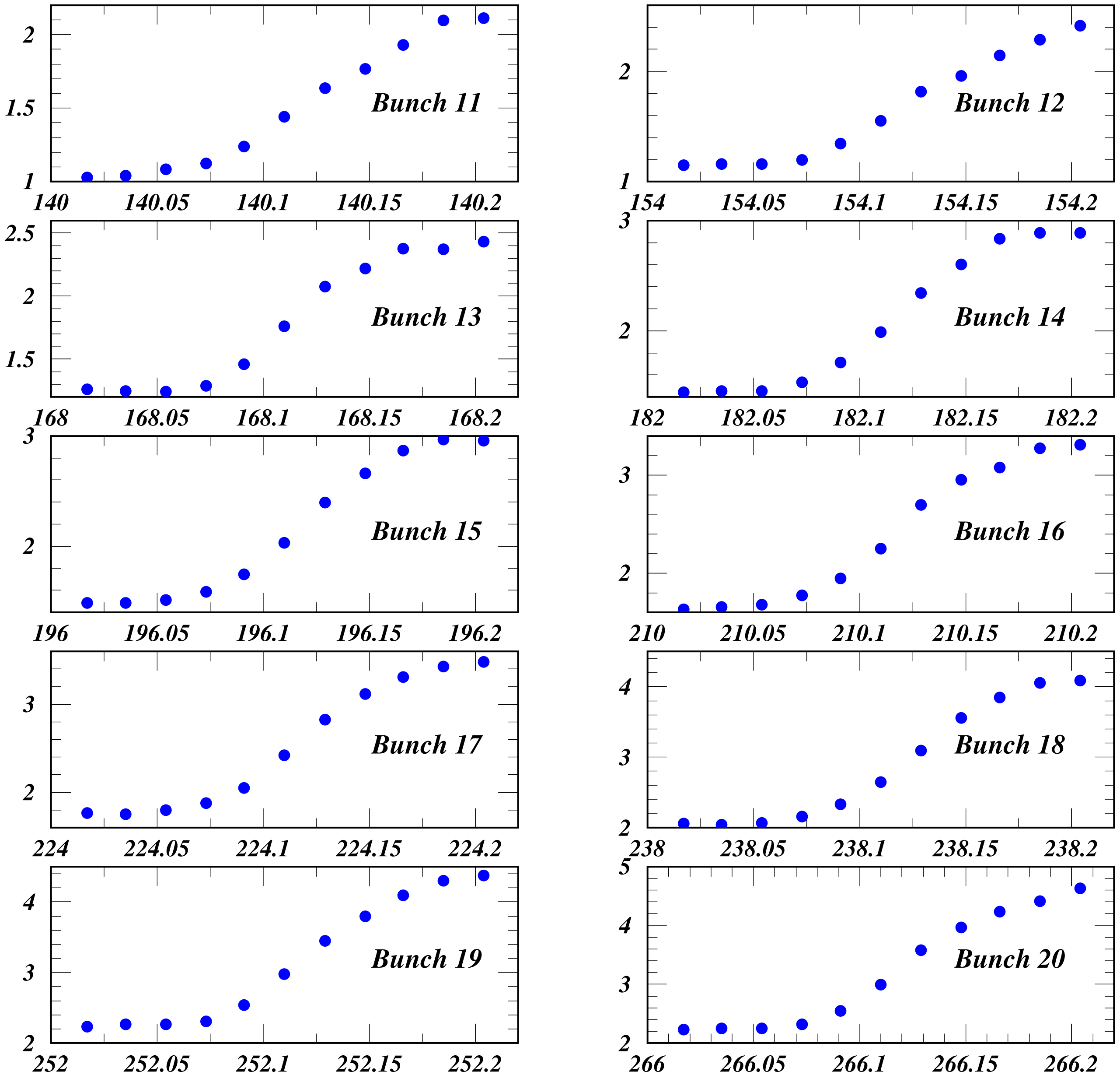

Job 41226: Field Gradient dE_Y/dY (V/m^2)
Bunch 11
Bunch 12
Bunch 13
Bunch 14
Bunch 15
Bunch 16
Bunch 17
Bunch 18
Bunch 19
Bunch 20

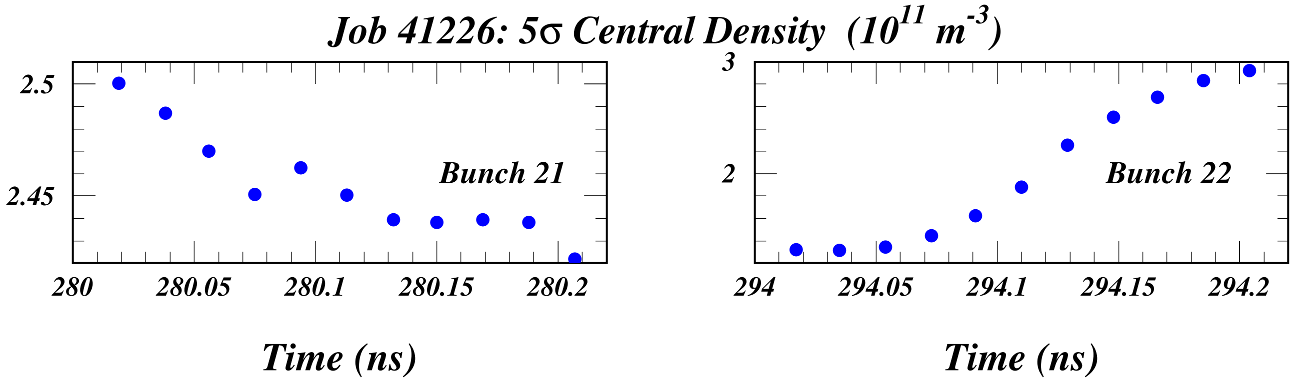

Job 41226: Field Gradient dE_Y /dY (V/m^2)
2700
2680
Bunch 21
280
280.05
280.1
280.15
280.2
Time (ns)
2400
2200
2000
Bunch 22
294
294.05
294.1
294.15
294.2
Time (ns)



Job 41226: 5σ Central Density (10^11 m^-3)
Bunch 1
Bunch 2
Bunch 3
Bunch 4
Bunch 5
Bunch 6
Bunch 7
Bunch 8
Bunch 9
Bunch 10
1
0
-1
0
0.05
0.1
0.15
0.2
0.15
0.1
14
14.05
14.1
14.15
14.2
0.2
0.15
28
28.05
28.1
28.15
28.2
0.4
0.2
42
42.05
42.1
42.15
42.2
0.6
0.4
56
56.05
56.1
56.15
56.2
0.8
0.6
70
70.05
70.1
70.15
70.2
1
0.5
84
84.05
84.1
84.15
84.2
1.4
1.1333
0.8667
0.6
98
98.05
98.1
98.15
98.2
1.5
1
112
112.05
112.1
112.15
112.2
1.5
1
126
126.05
126.1
126.15
126.2

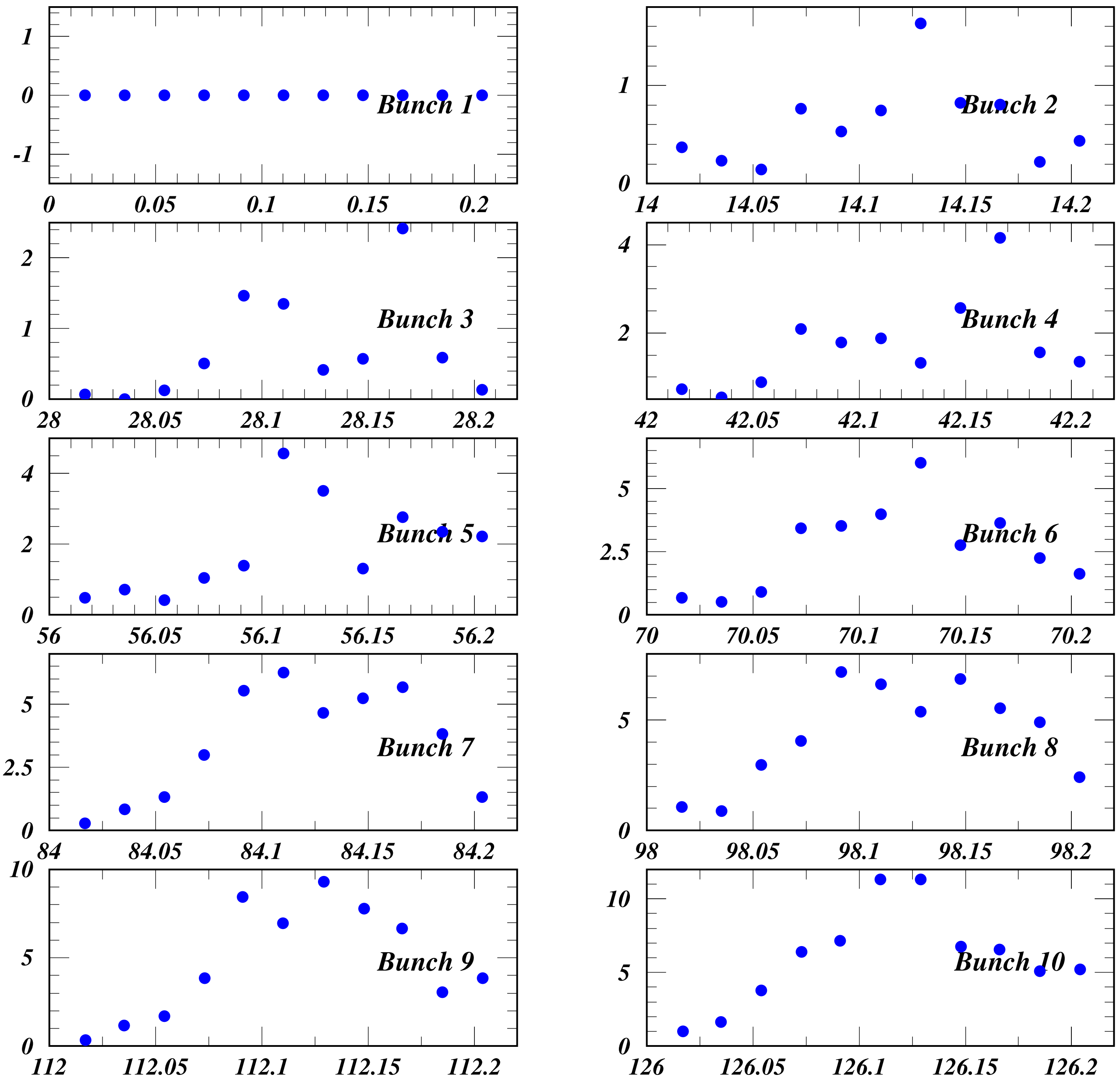
Job 41226: 5σ Central Density $(10^{11}\ m^{-3})$

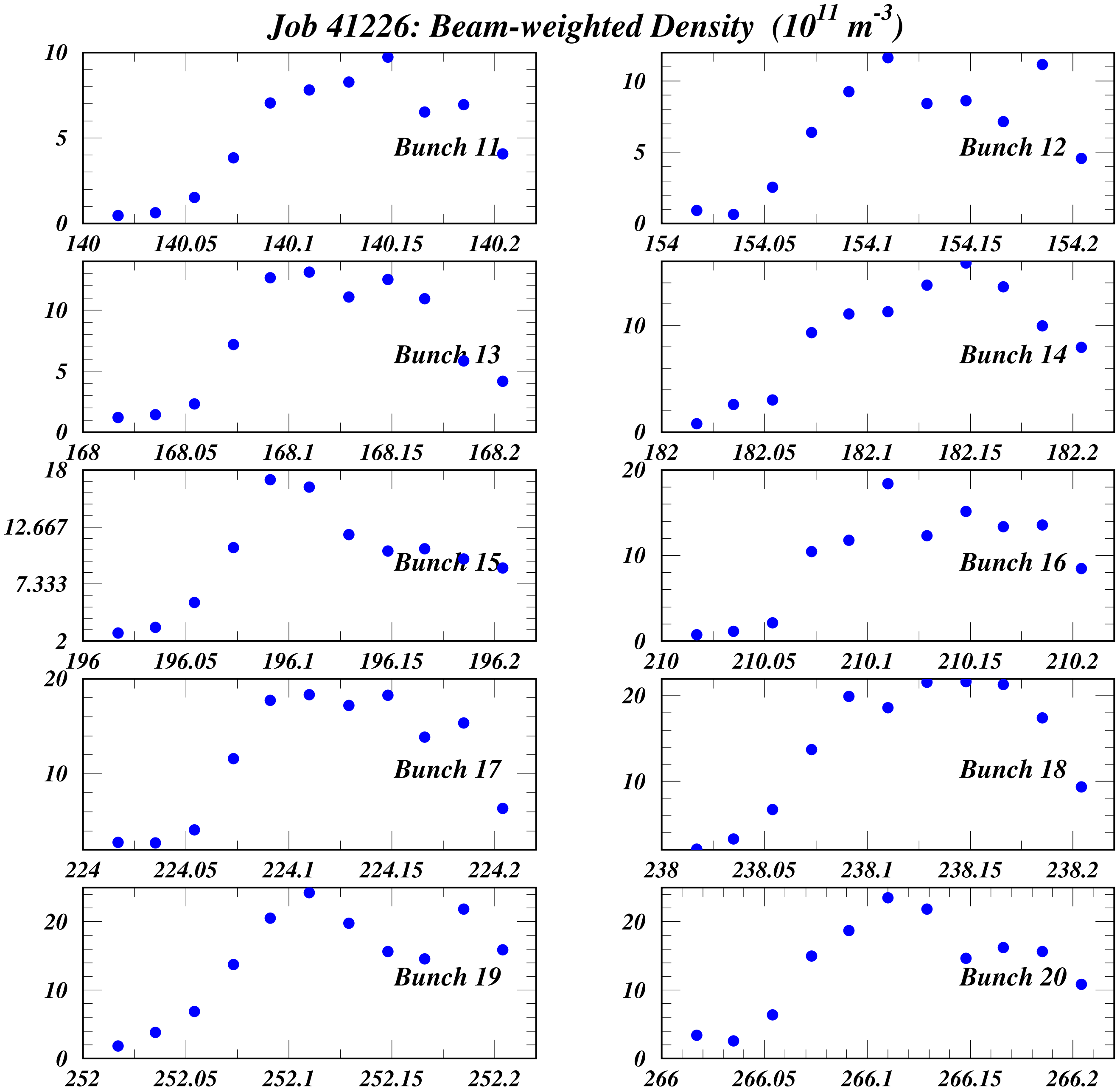




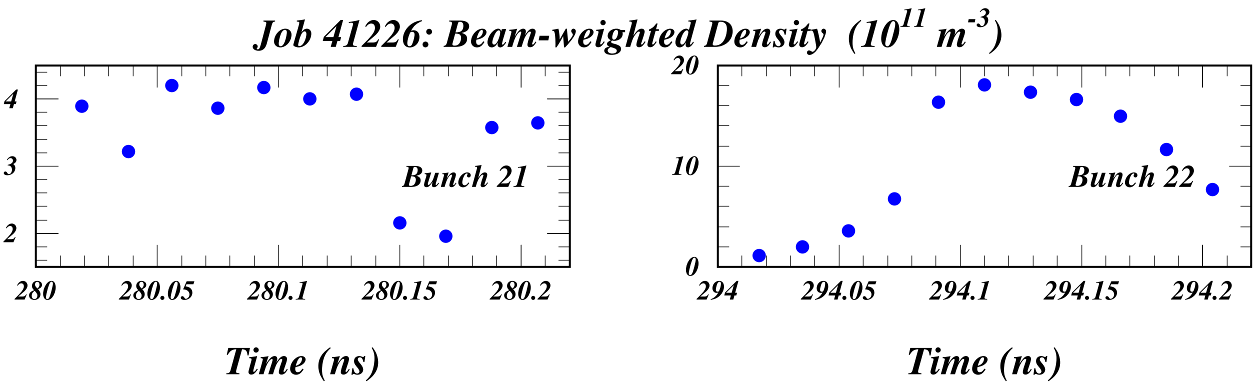
Job 41226: 5σ Central Density (10^11 m^-3)
2.5
2.45
Bunch 21
280
280.05
280.1
280.15
280.2
Time (ns)
3
2
Bunch 22
294
294.05
294.1
294.15
294.2
Time (ns)

Job 41226: Beam-weighted Density $(10^{11}\ m^{-3})$





Job 41226: Beam-weighted Density $(10^{11}\ m^{-3})$
Bunch 11
Bunch 12
Bunch 13
Bunch 14
Bunch 15
Bunch 16
Bunch 17
Bunch 18
Bunch 19
Bunch 20


Job 41226: Beam-weighted Density (10^11 m^-3)
Bunch 21
Bunch 22
4
3
2
280
280.05
280.1
280.15
280.2
20
10
0
294
294.05
294.1
294.15
294.2
Time (ns)
Time (ns)