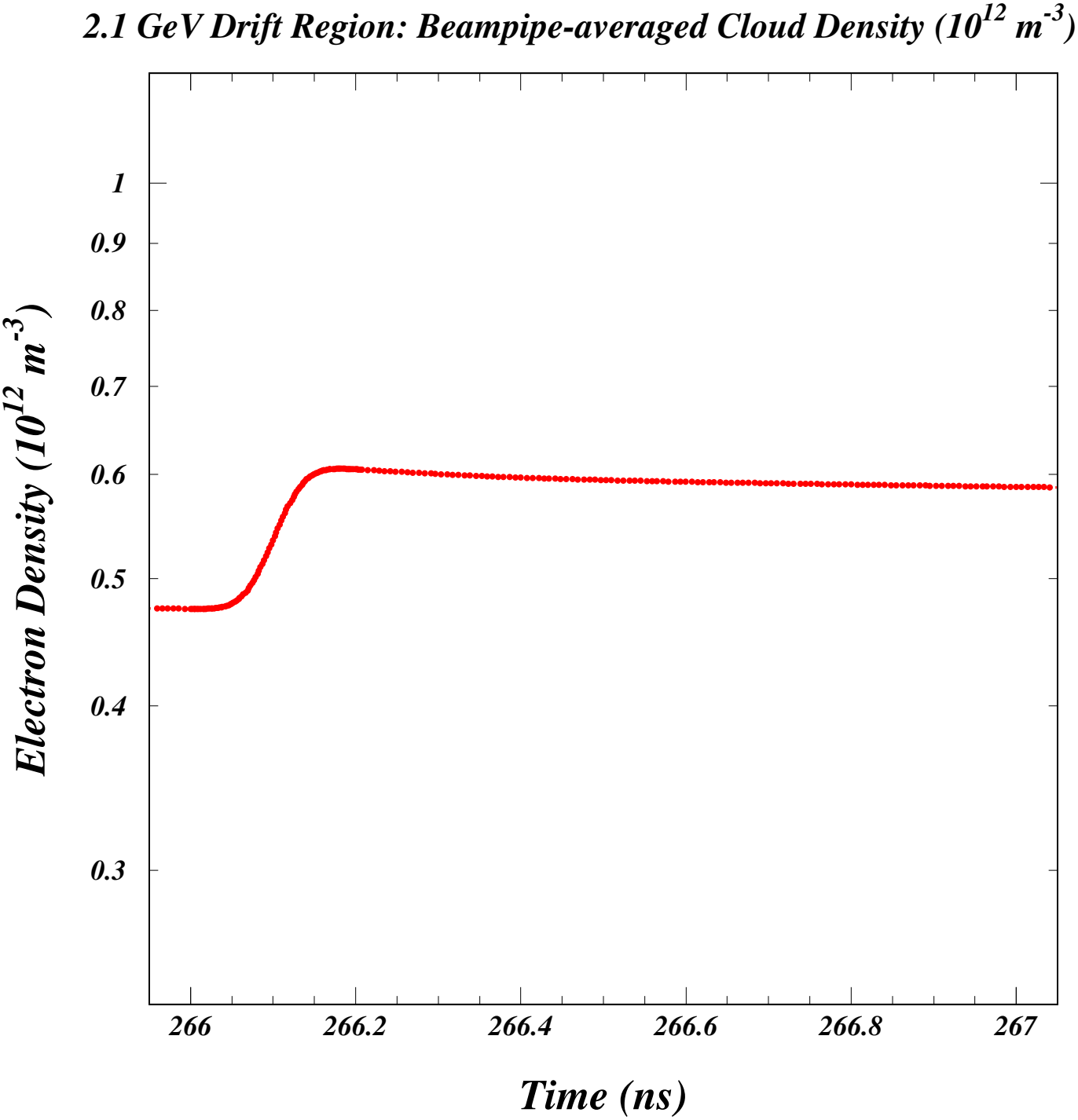
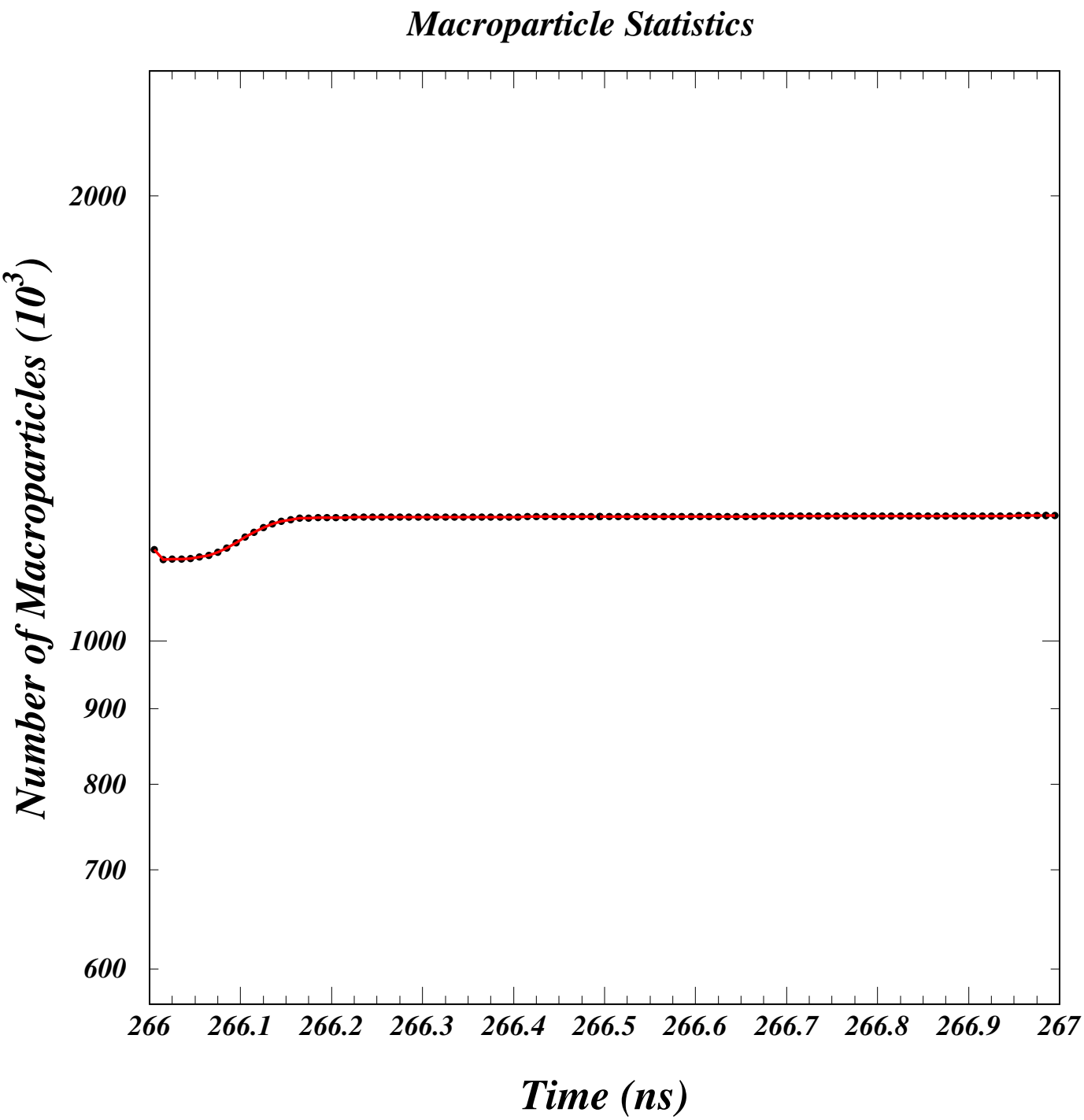

2.1 GeV Drift Region: Beampipe-averaged Cloud Density (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
266
266.2
266.4
266.6
266.8
267
Time (ns)


Macroparticle Statistics
Number of Macroparticles (10^3)
2000
1000
900
800
700
600
266
266.1
266.2
266.3
266.4
266.5
266.6
266.7
266.8
266.9
267
Time (ns)

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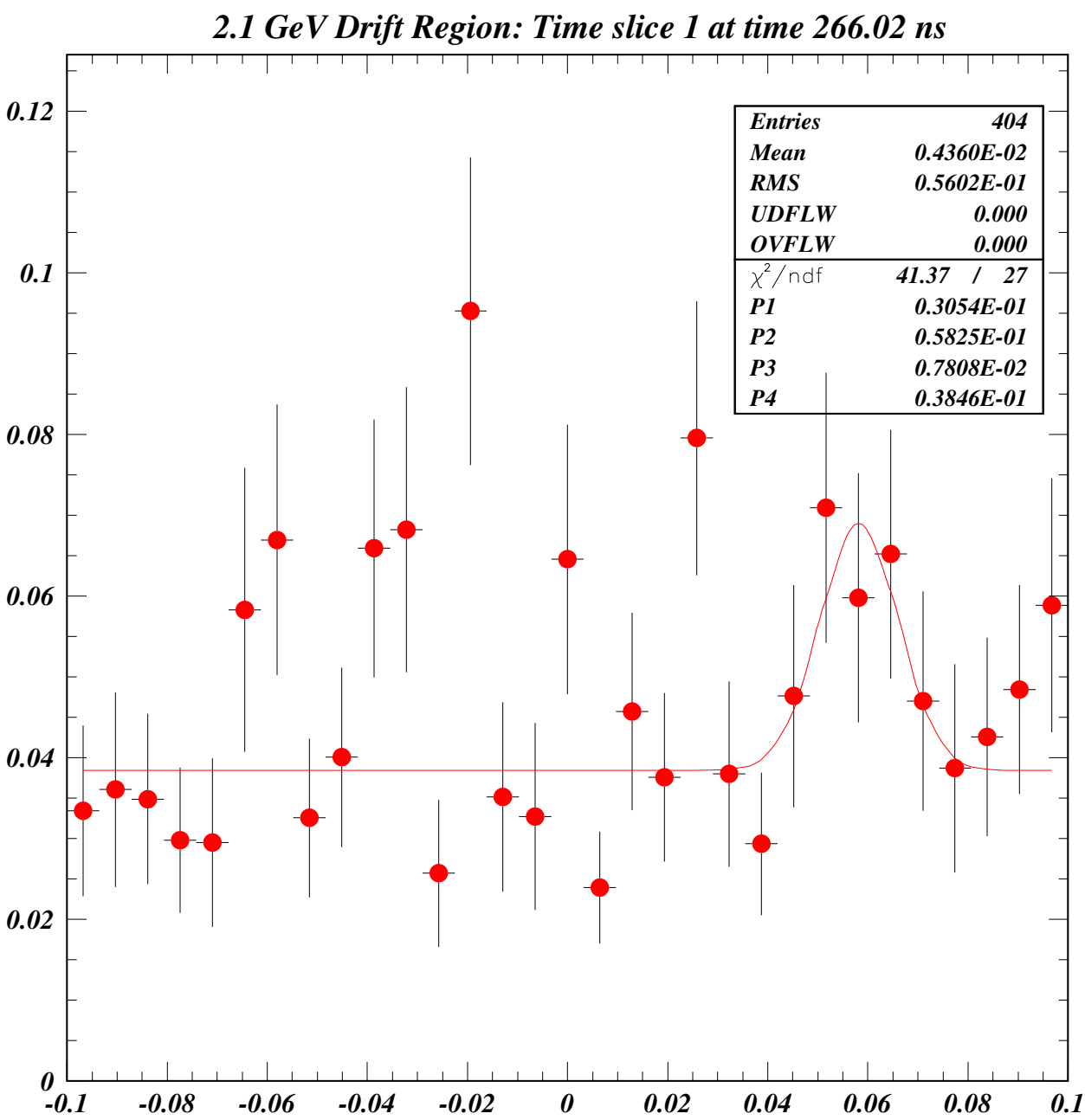
2.1 GeV Drift Region: Time slice 1 at time 266.02 ns
Entries 404
Mean 0.4360E-02
RMS 0.5602E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 41.37 / 27
P1 0.3054E-01
P2 0.5825E-01
P3 0.7808E-02
P4 0.3846E-01
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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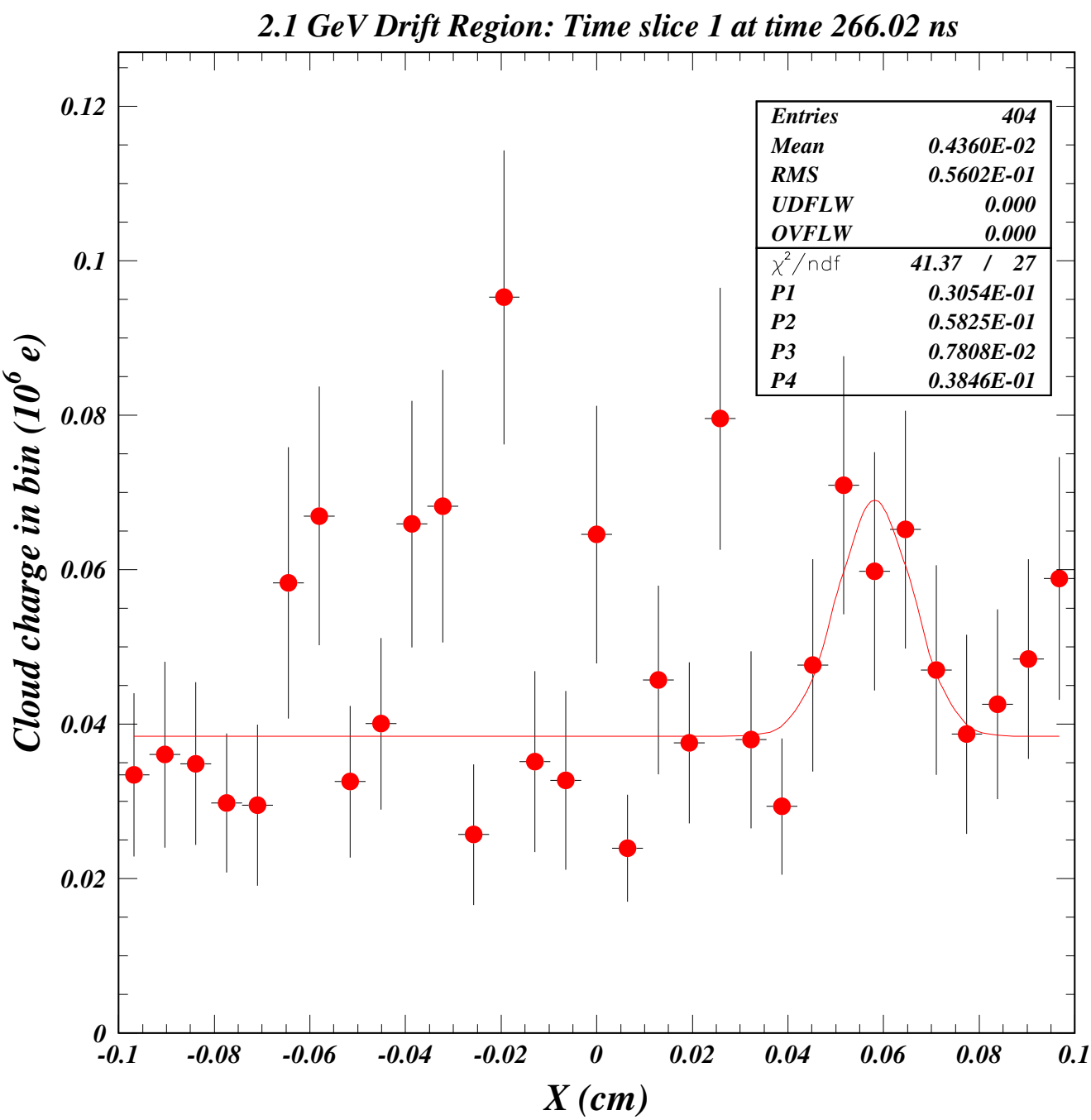
2.1 GeV Drift Region: Time slice 1 at time 266.02 ns
Entries 404
Mean 0.4360E-02
RMS 0.5602E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 41.37 / 27
P1 0.3054E-01
P2 0.5825E-01
P3 0.7808E-02
P4 0.3846E-01
Cloud charge in bin (10⁶ e)
X (cm)
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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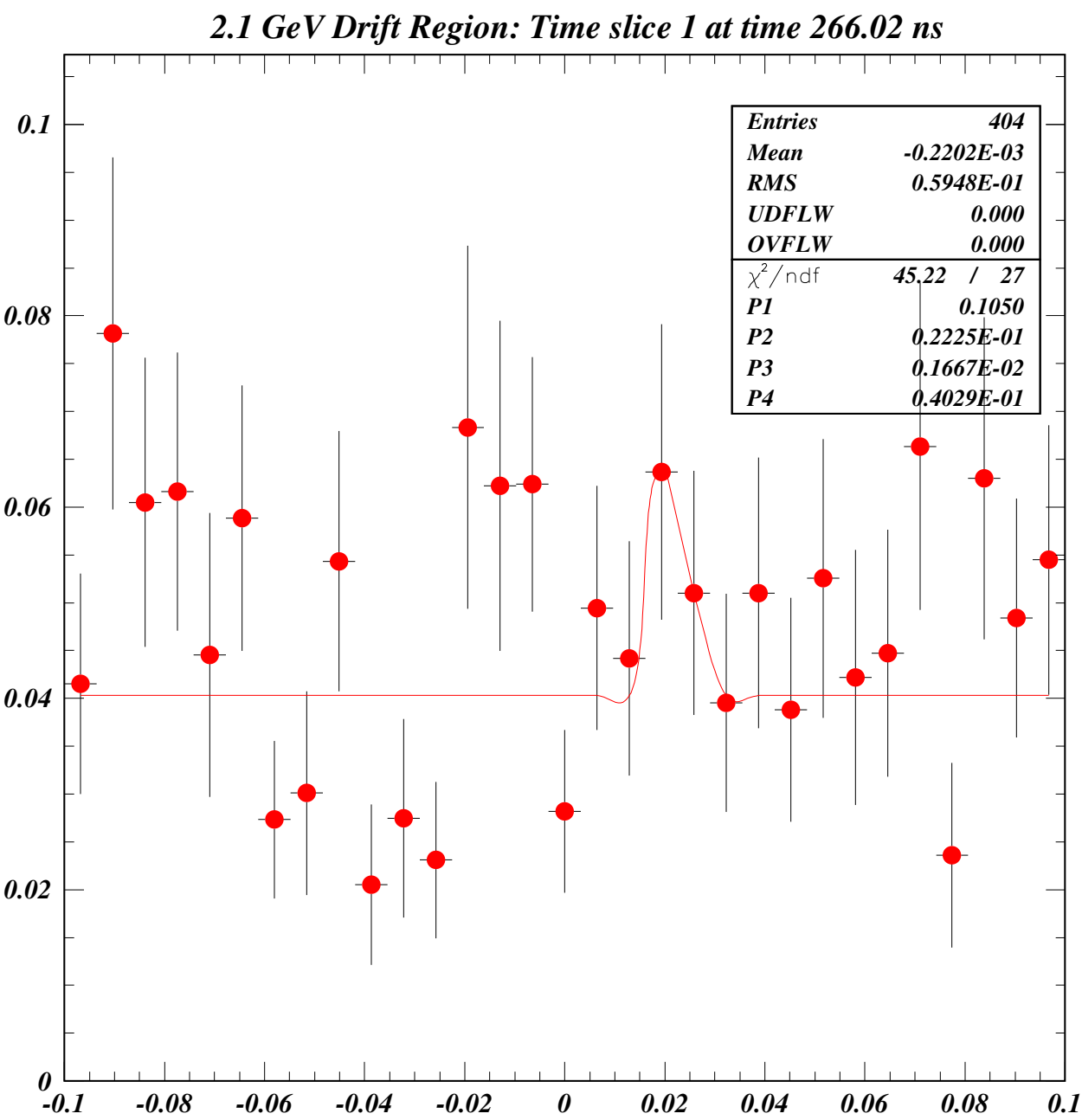
2.1 GeV Drift Region: Time slice 1 at time 266.02 ns
Entries 404
Mean -0.2202E-03
RMS 0.5948E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 45.22 / 27
P1 0.1050
P2 0.2225E-01
P3 0.1667E-02
P4 0.4029E-01
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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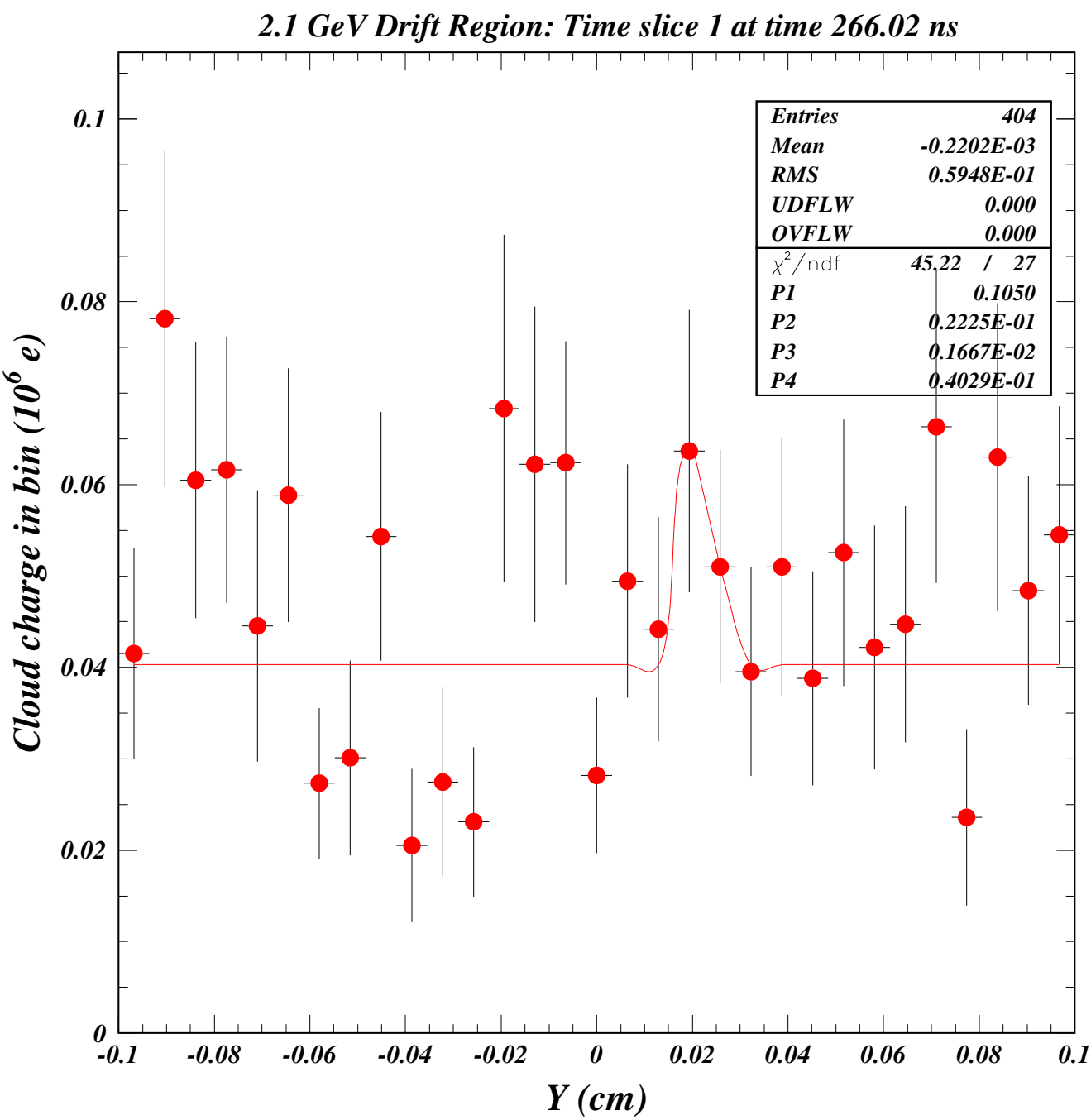
2.1 GeV Drift Region: Time slice 1 at time 266.02 ns
Entries 404
Mean -0.2202E-03
RMS 0.5948E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 45.22 / 27
P1 0.1050
P2 0.2225E-01
P3 0.1667E-02
P4 0.4029E-01
Cloud charge in bin (10⁶ e)
Y (cm)
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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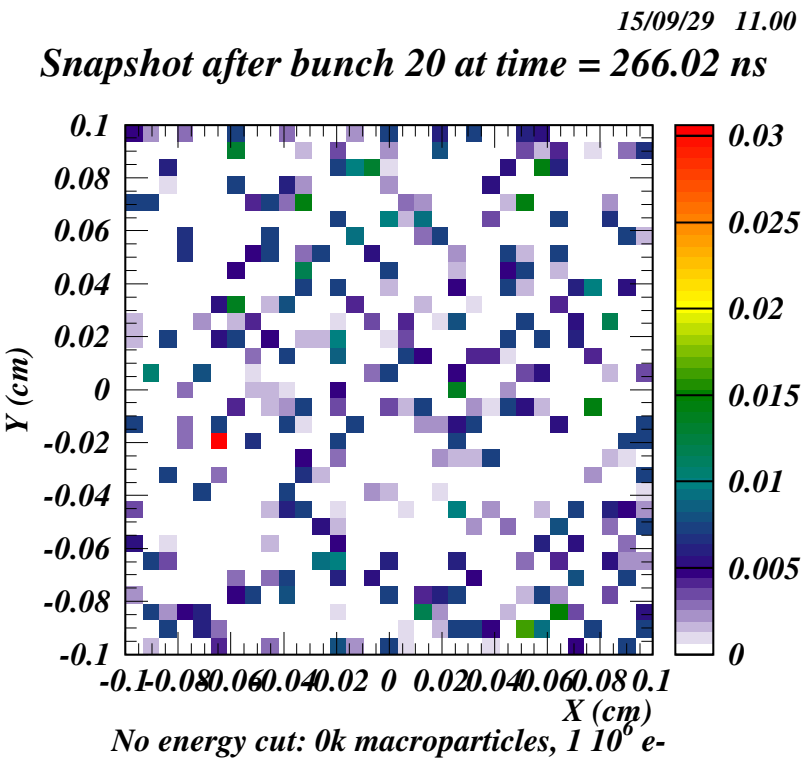
Snapshot after bunch 20 at time = 266.02 ns
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
Y (cm)
-0.1 -0.08 -0.06 -0.04 -0.02 0 0.02 0.04 0.06 0.08 0.1
X (cm)
0.03
0.025
0.02
0.015
0.01
0.005
0
No energy cut: 0k macroparticles, 1 10^6 e-

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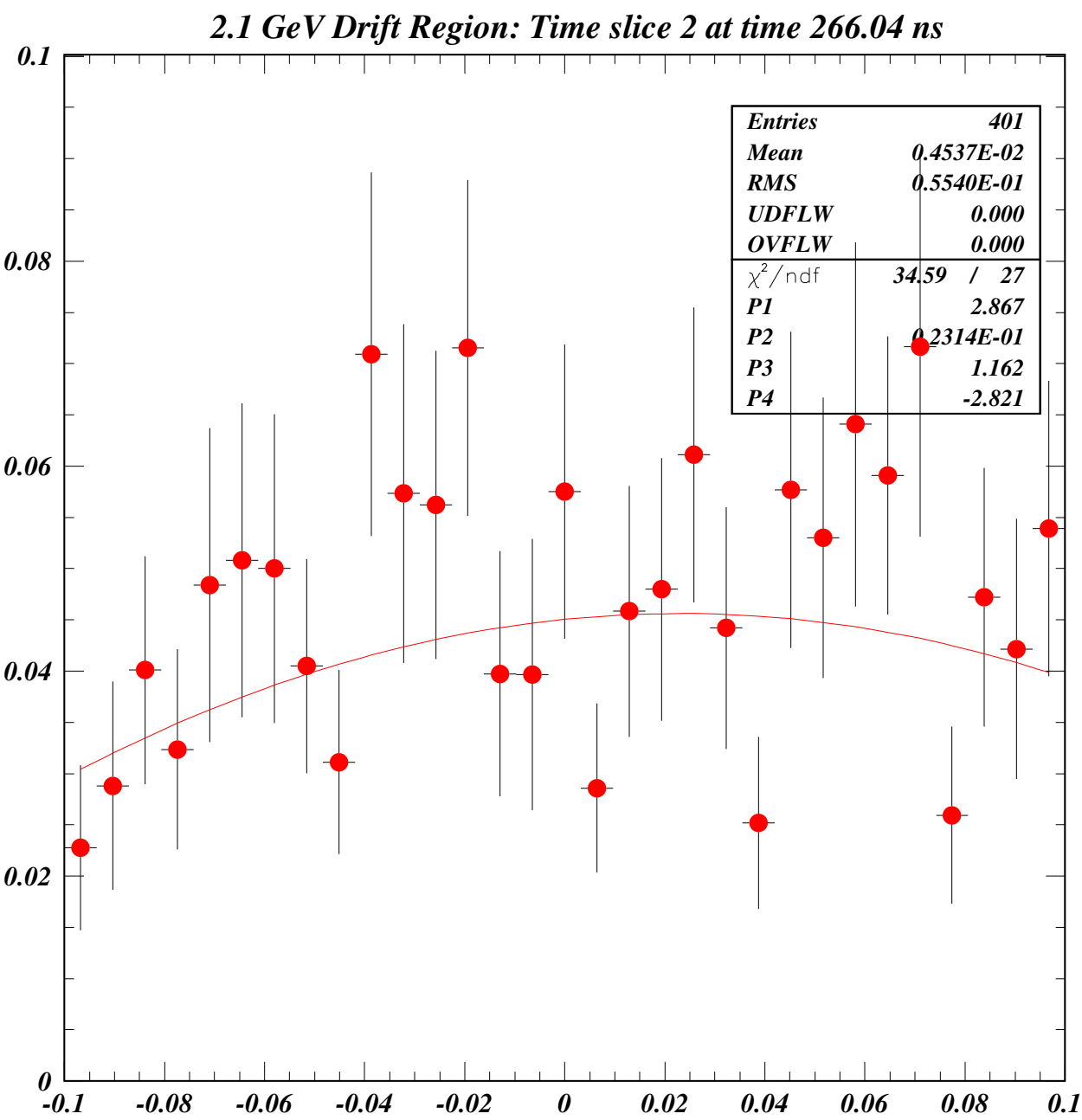
2.1 GeV Drift Region: Time slice 2 at time 266.04 ns
Entries 401
Mean 0.4537E-02
RMS 0.5540E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 34.59 / 27
P1 2.867
P2 0.2314E-01
P3 1.162
P4 -2.821
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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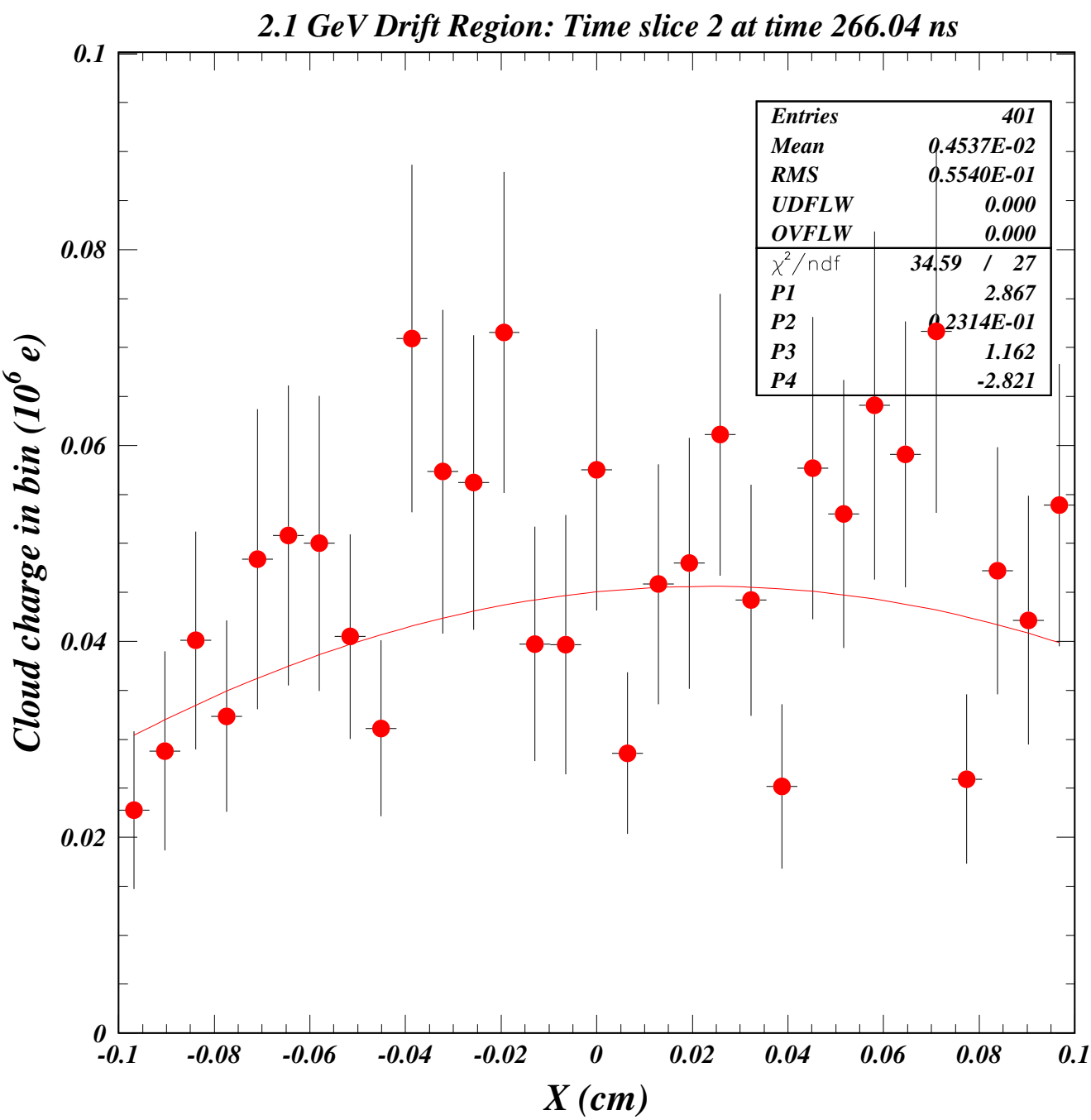
2.1 GeV Drift Region: Time slice 2 at time 266.04 ns
Entries 401
Mean 0.4537E-02
RMS 0.5540E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 34.59 / 27
P1 2.867
P2 0.2314E-01
P3 1.162
P4 -2.821
Cloud charge in bin (10⁶ e)
X (cm)
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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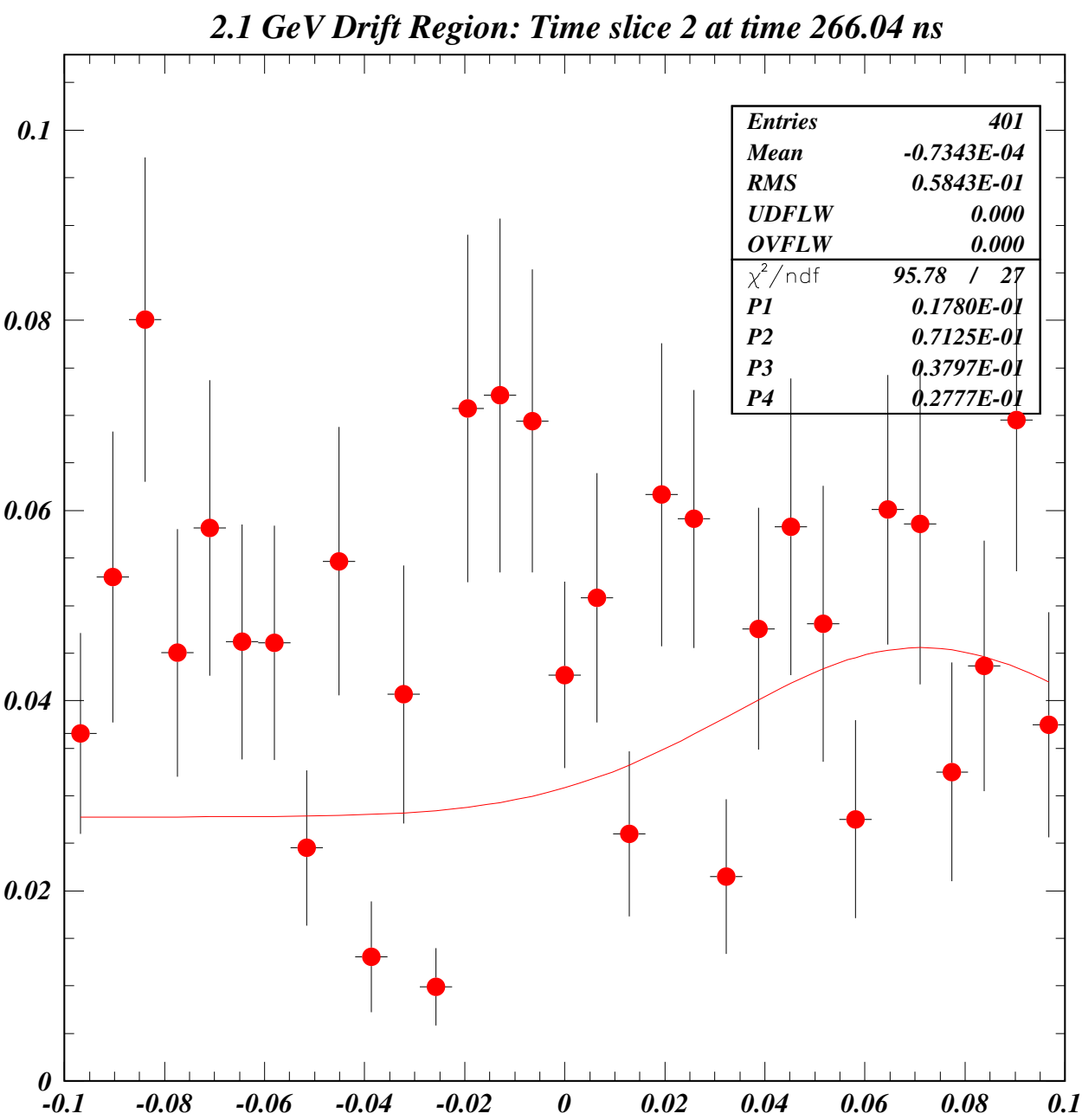
2.1 GeV Drift Region: Time slice 2 at time 266.04 ns
Entries 401
Mean -0.7343E-04
RMS 0.5843E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 95.78 / 27
P1 0.1780E-01
P2 0.7125E-01
P3 0.3797E-01
P4 0.2777E-01
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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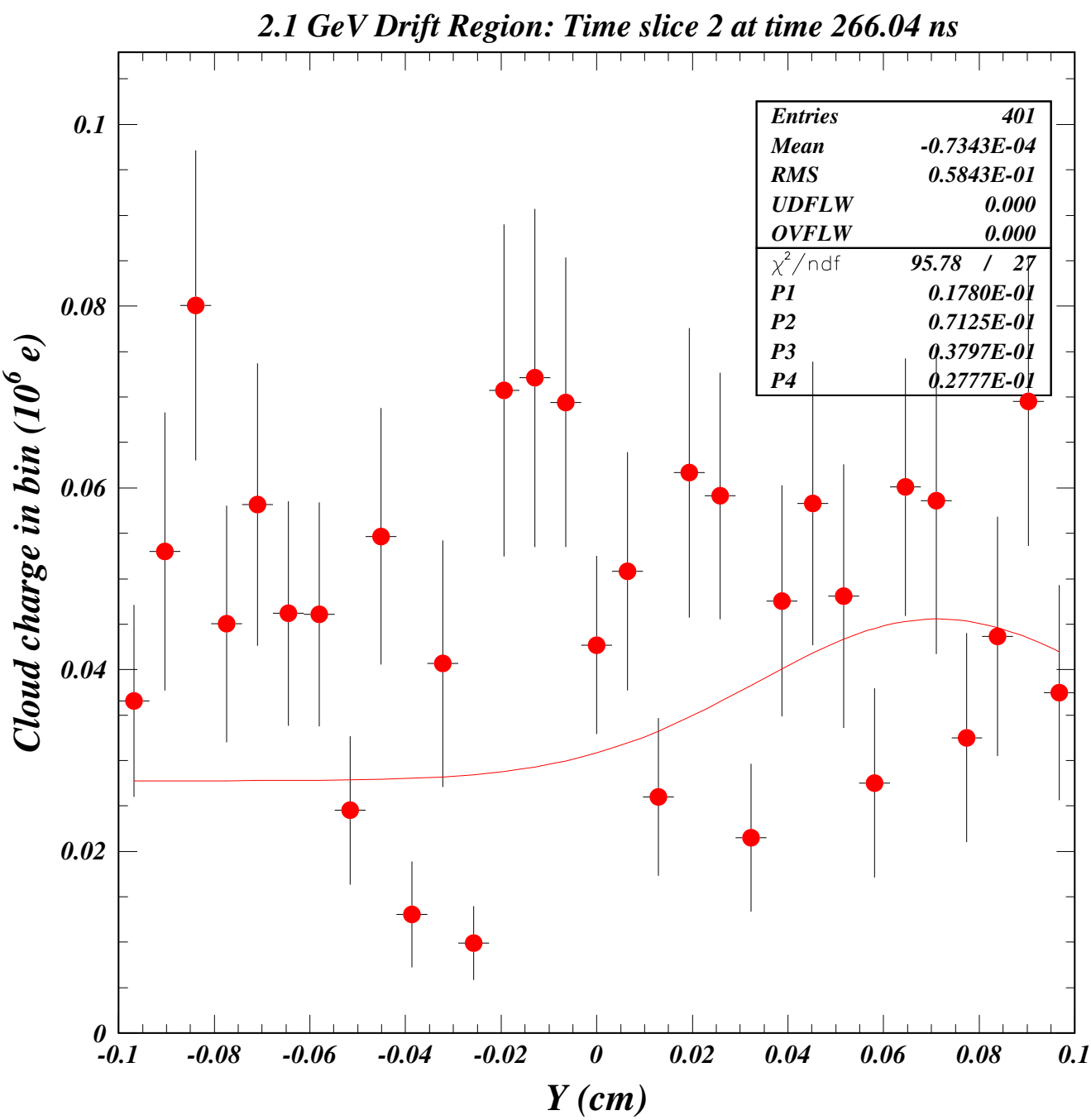
2.1 GeV Drift Region: Time slice 2 at time 266.04 ns
Entries 401
Mean -0.7343E-04
RMS 0.5843E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 95.78 / 27
P1 0.1780E-01
P2 0.7125E-01
P3 0.3797E-01
P4 0.2777E-01
Cloud charge in bin (10⁶ e)
Y (cm)
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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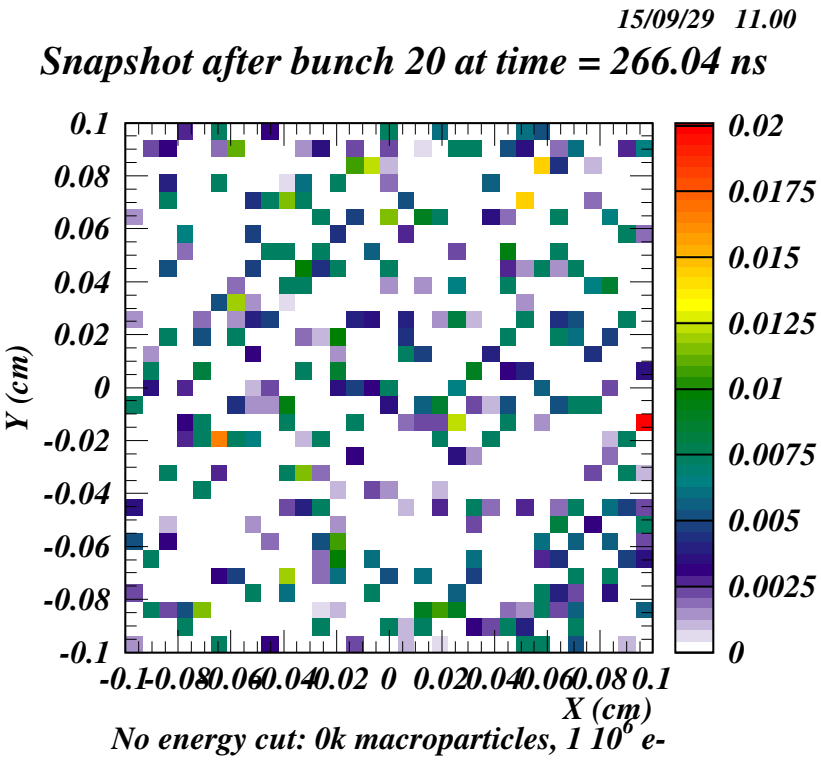
Snapshot after bunch 20 at time = 266.04 ns
Y (cm)
X (cm)
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
0.02
0.0175
0.015
0.0125
0.01
0.0075
0.005
0.0025
0
No energy cut: 0k macroparticles, 1 10^6 e-

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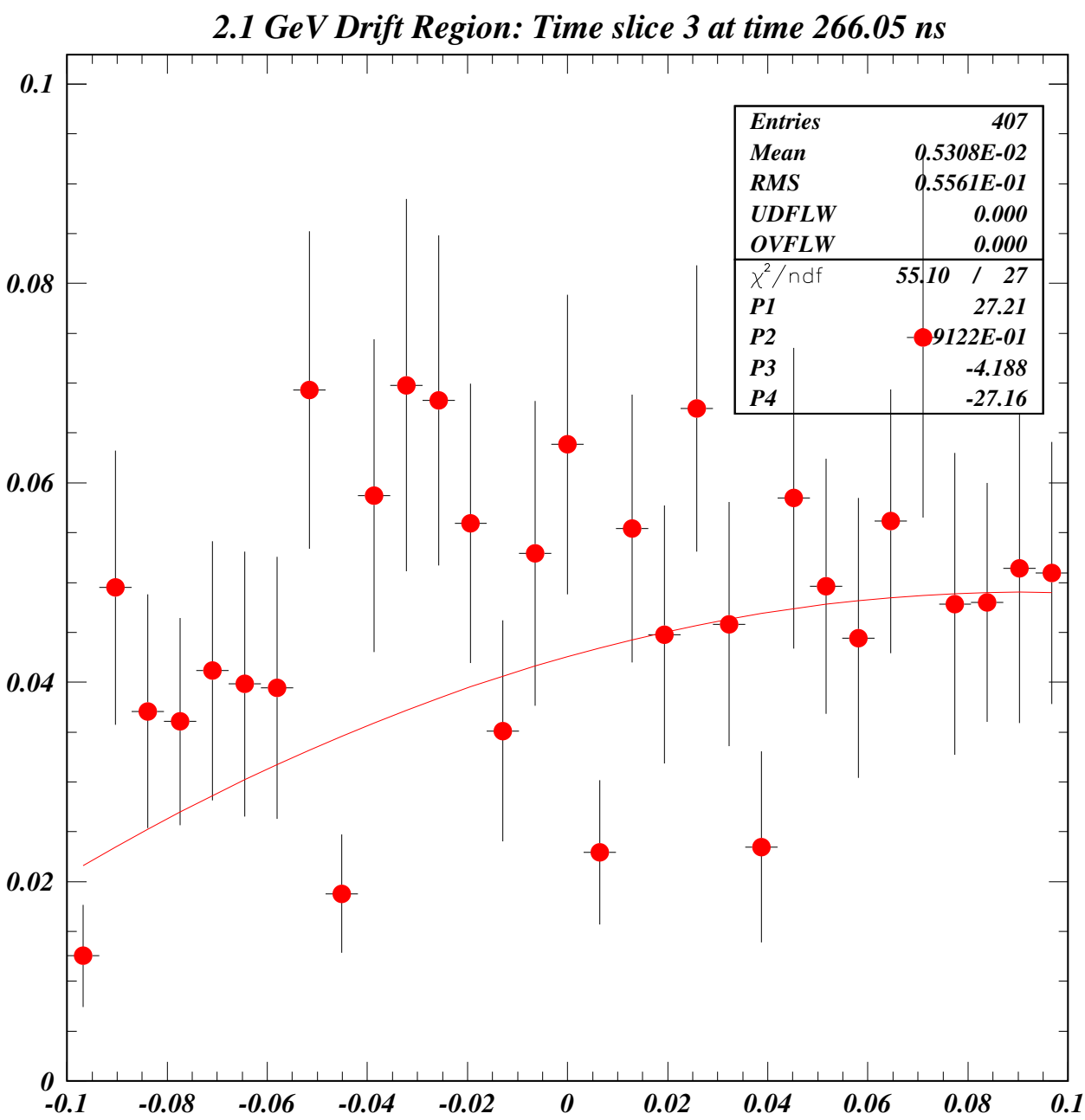
2.1 GeV Drift Region: Time slice 3 at time 266.05 ns
Entries 407
Mean 0.5308E-02
RMS 0.5561E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 55.10 / 27
P1 27.21
P2 9122E-01
P3 -4.188
P4 -27.16
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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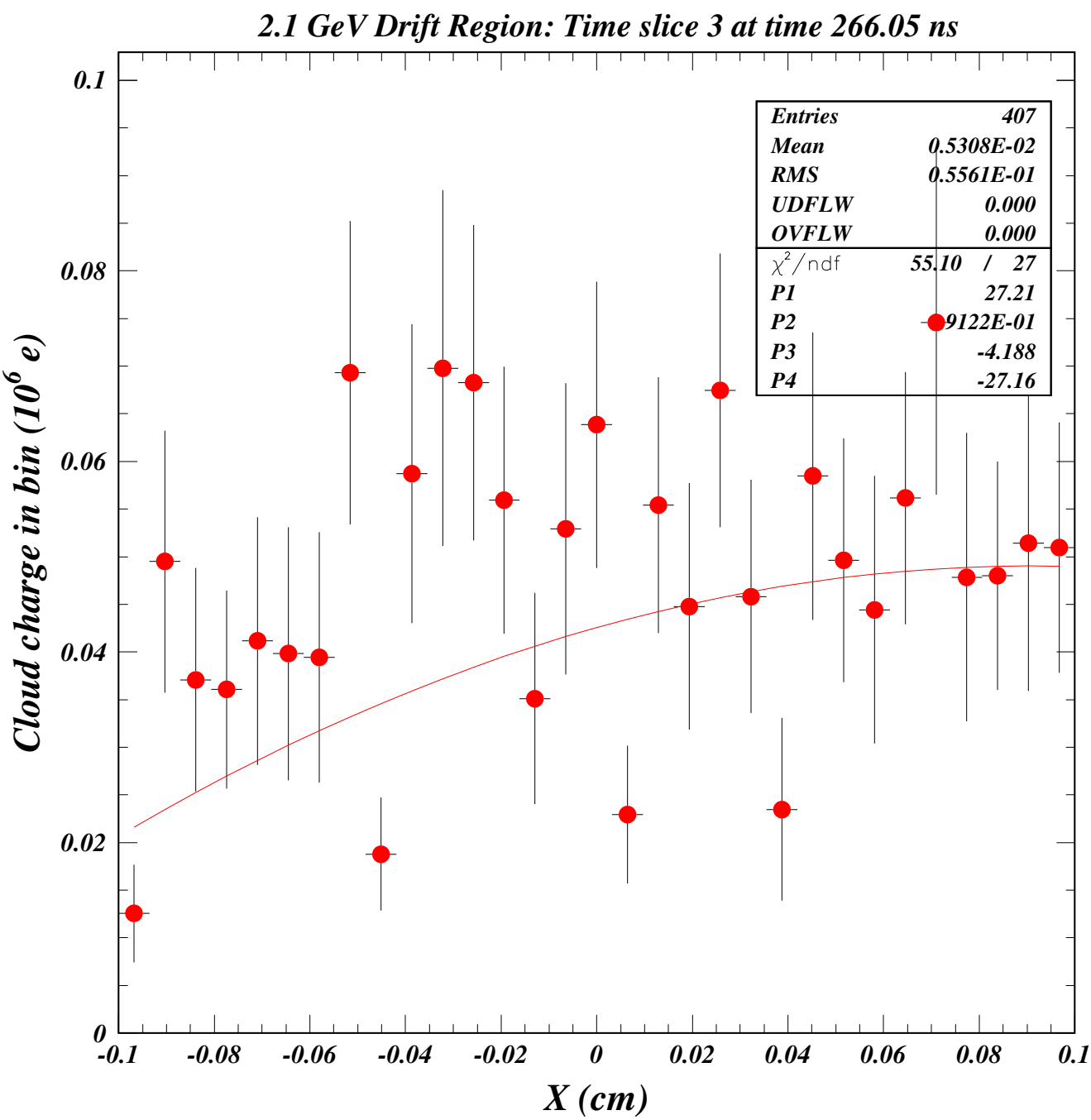
2.1 GeV Drift Region: Time slice 3 at time 266.05 ns
Entries 407
Mean 0.5308E-02
RMS 0.5561E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 55.10 / 27
P1 27.21
P2 9122E-01
P3 -4.188
P4 -27.16
Cloud charge in bin (10⁶ e)
X (cm)
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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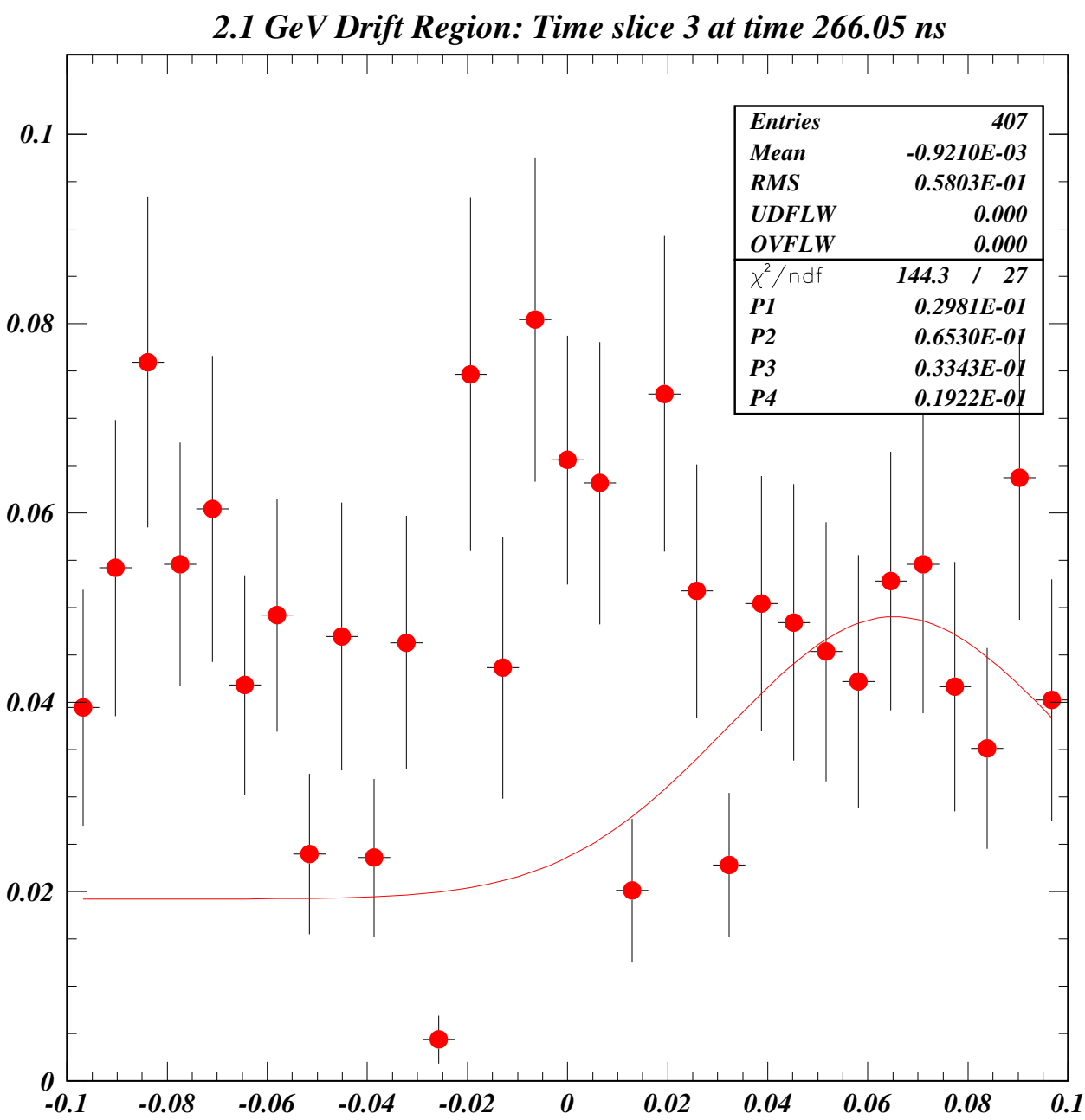
2.1 GeV Drift Region: Time slice 3 at time 266.05 ns
Entries 407
Mean -0.9210E-03
RMS 0.5803E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 144.3 / 27
P1 0.2981E-01
P2 0.6530E-01
P3 0.3343E-01
P4 0.1922E-01
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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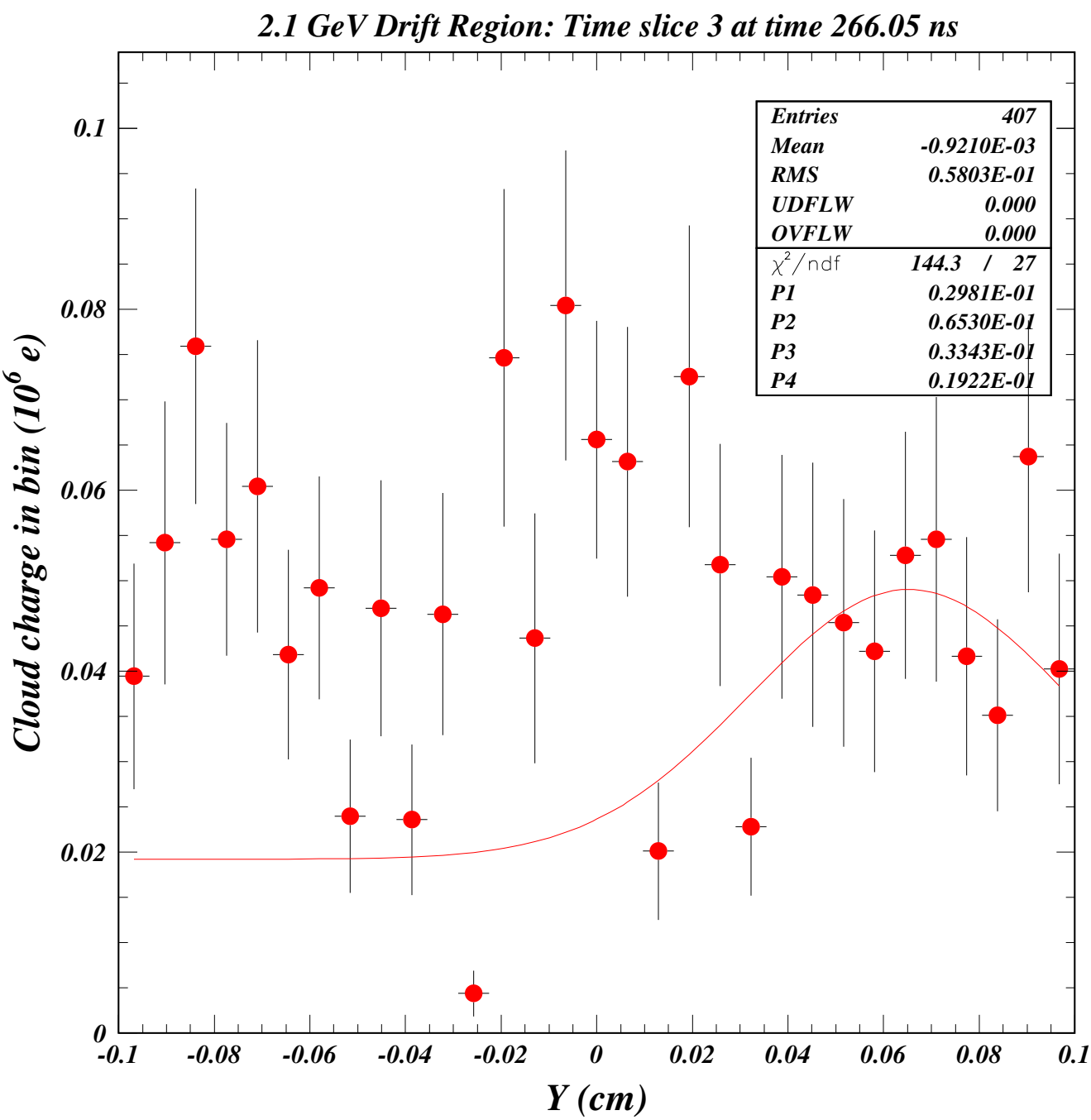
2.1 GeV Drift Region: Time slice 3 at time 266.05 ns
Entries 407
Mean -0.9210E-03
RMS 0.5803E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 144.3 / 27
P1 0.2981E-01
P2 0.6530E-01
P3 0.3343E-01
P4 0.1922E-01
Cloud charge in bin (10⁶ e)
Y (cm)
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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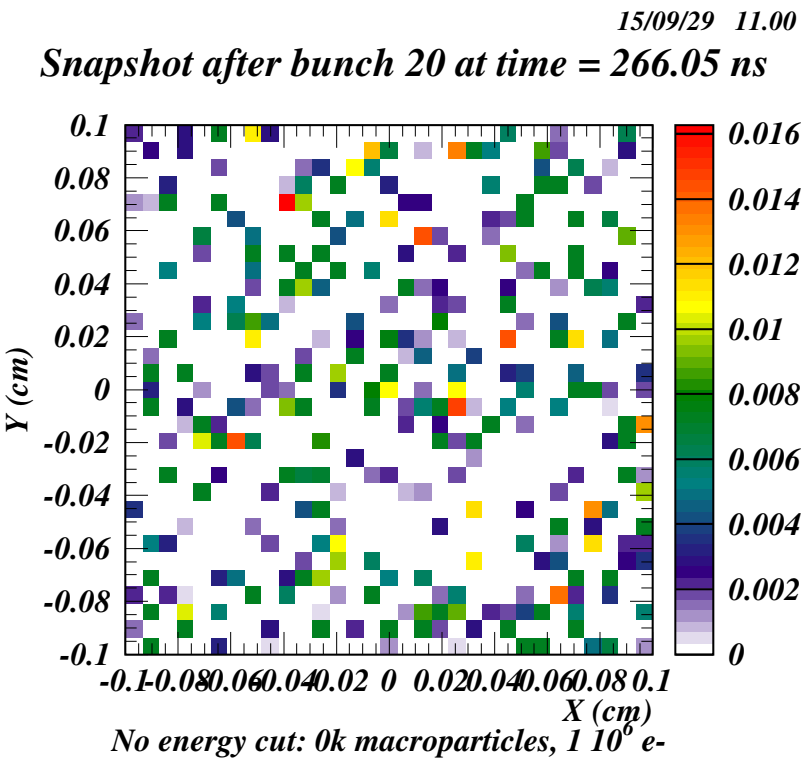
Snapshot after bunch 20 at time = 266.05 ns
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
Y (cm)
-0.1 -0.08 -0.06 -0.04 -0.02 0 0.02 0.04 0.06 0.08 0.1
X (cm)
0.016
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
No energy cut: 0k macroparticles, 1 10^6 e-

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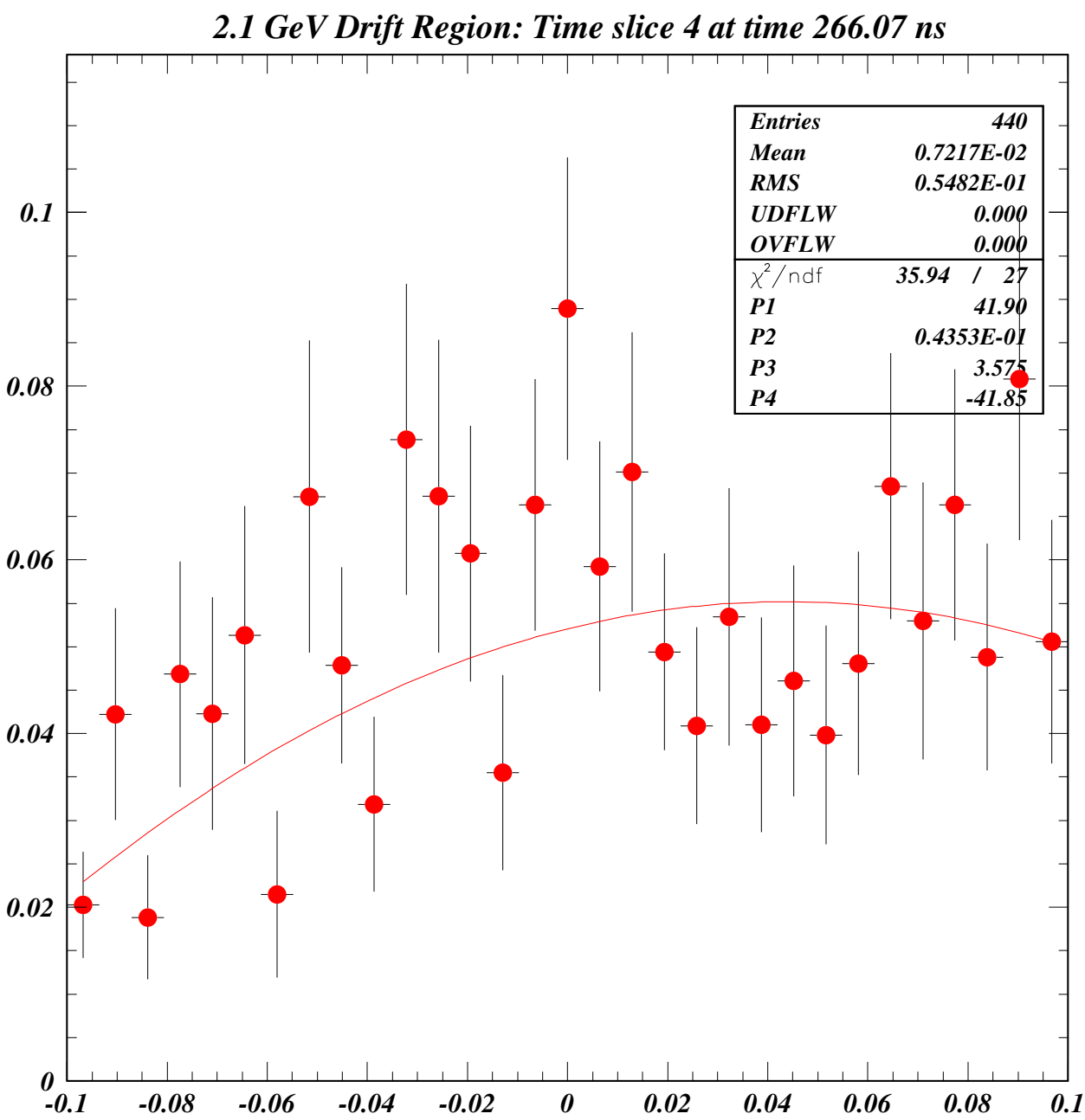
2.1 GeV Drift Region: Time slice 4 at time 266.07 ns
Entries 440
Mean 0.7217E-02
RMS 0.5482E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 35.94 / 27
P1 41.90
P2 0.4353E-01
P3 3.575
P4 -41.85
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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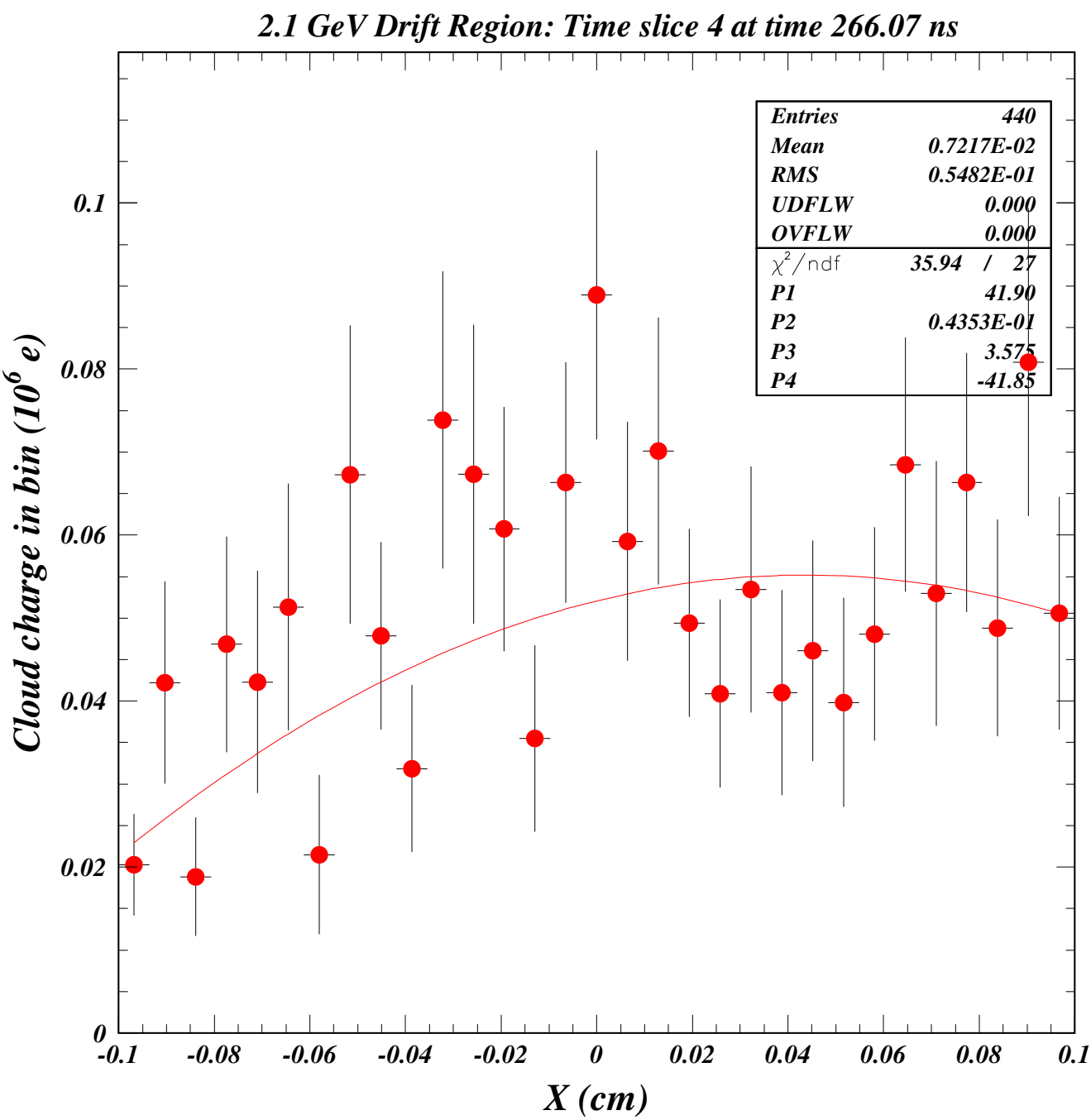
2.1 GeV Drift Region: Time slice 4 at time 266.07 ns
Entries 440
Mean 0.7217E-02
RMS 0.5482E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 35.94 / 27
P1 41.90
P2 0.4353E-01
P3 3.575
P4 -41.85
Cloud charge in bin (10⁶ e)
X (cm)
0
0.02
0.04
0.06
0.08
0.1
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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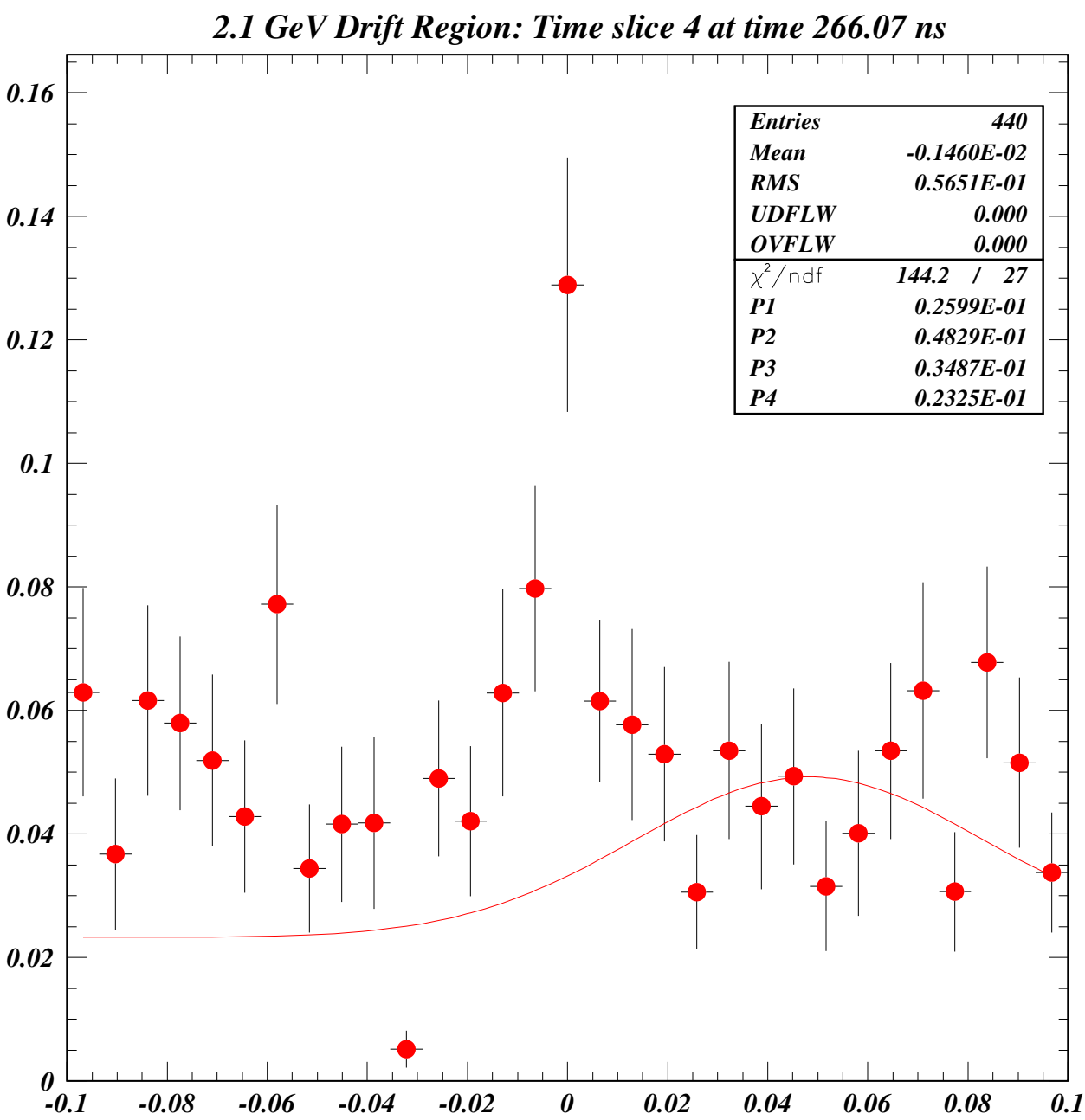
2.1 GeV Drift Region: Time slice 4 at time 266.07 ns
Entries 440
Mean -0.1460E-02
RMS 0.5651E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 144.2 / 27
P1 0.2599E-01
P2 0.4829E-01
P3 0.3487E-01
P4 0.2325E-01
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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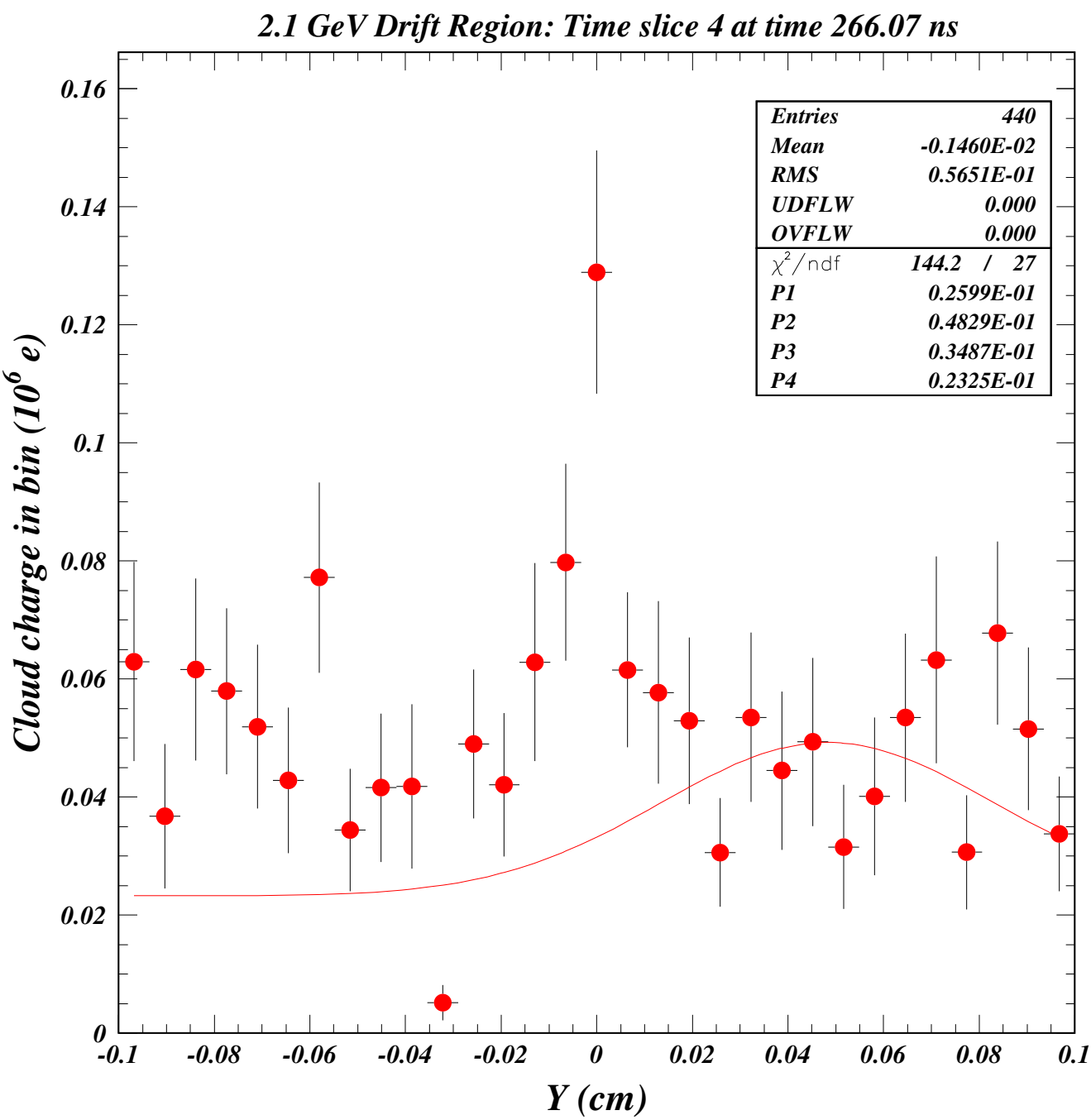
2.1 GeV Drift Region: Time slice 4 at time 266.07 ns
Entries 440
Mean -0.1460E-02
RMS 0.5651E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 144.2 / 27
P1 0.2599E-01
P2 0.4829E-01
P3 0.3487E-01
P4 0.2325E-01
Cloud charge in bin (10⁶ e)
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1
Y (cm)

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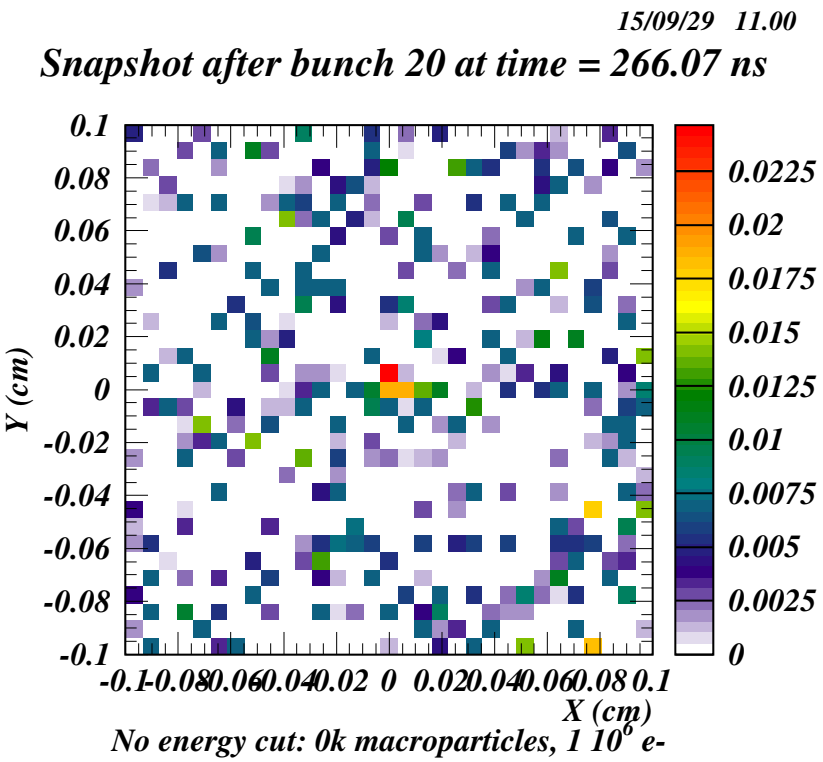
Snapshot after bunch 20 at time = 266.07 ns
Y (cm)
X (cm)
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
0.0225
0.02
0.0175
0.015
0.0125
0.01
0.0075
0.005
0.0025
0
No energy cut: 0k macroparticles, 1 10^6 e-

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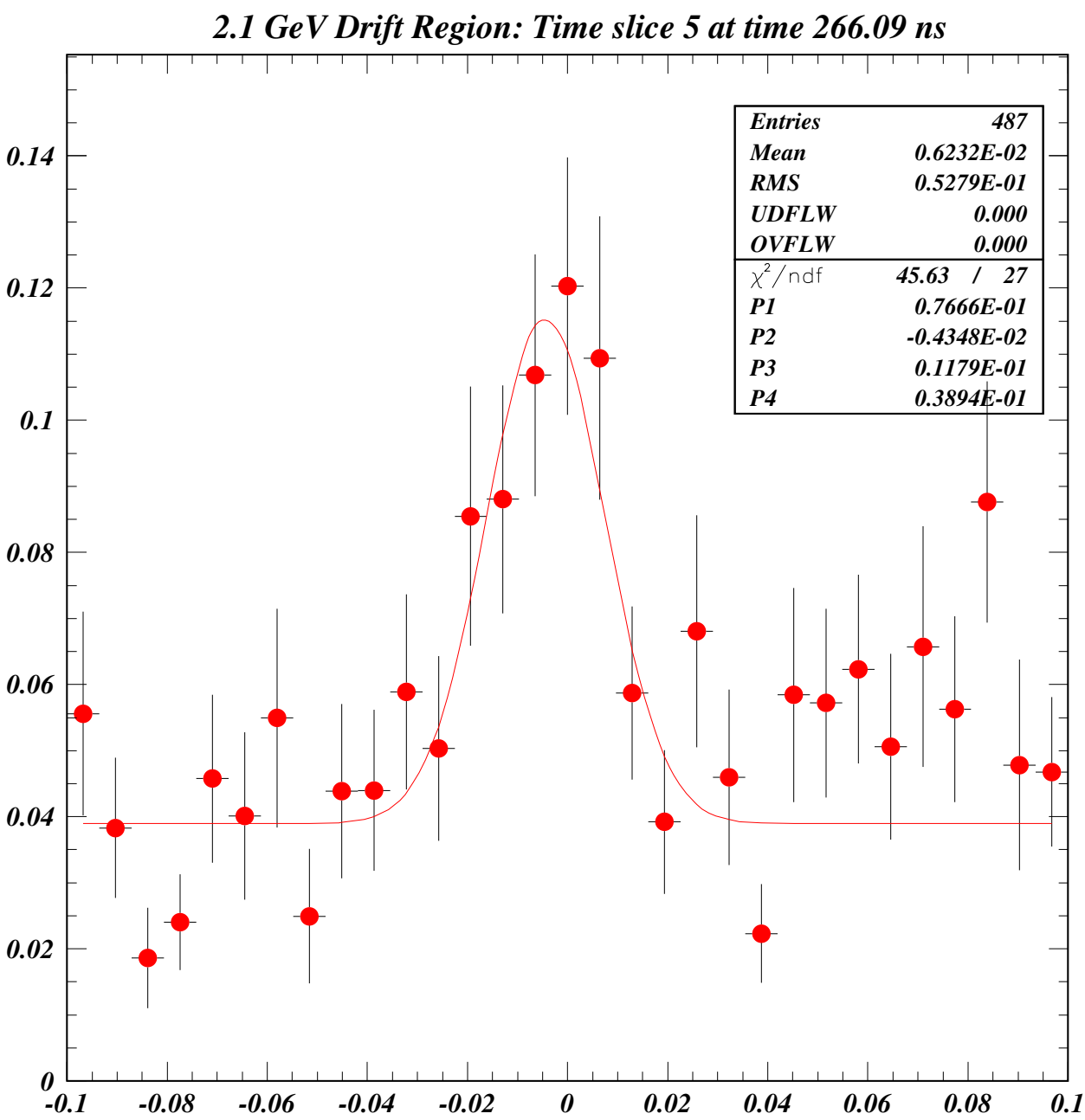
2.1 GeV Drift Region: Time slice 5 at time 266.09 ns
Entries 487
Mean 0.6232E-02
RMS 0.5279E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 45.63 / 27
P1 0.7666E-01
P2 -0.4348E-02
P3 0.1179E-01
P4 0.3894E-01
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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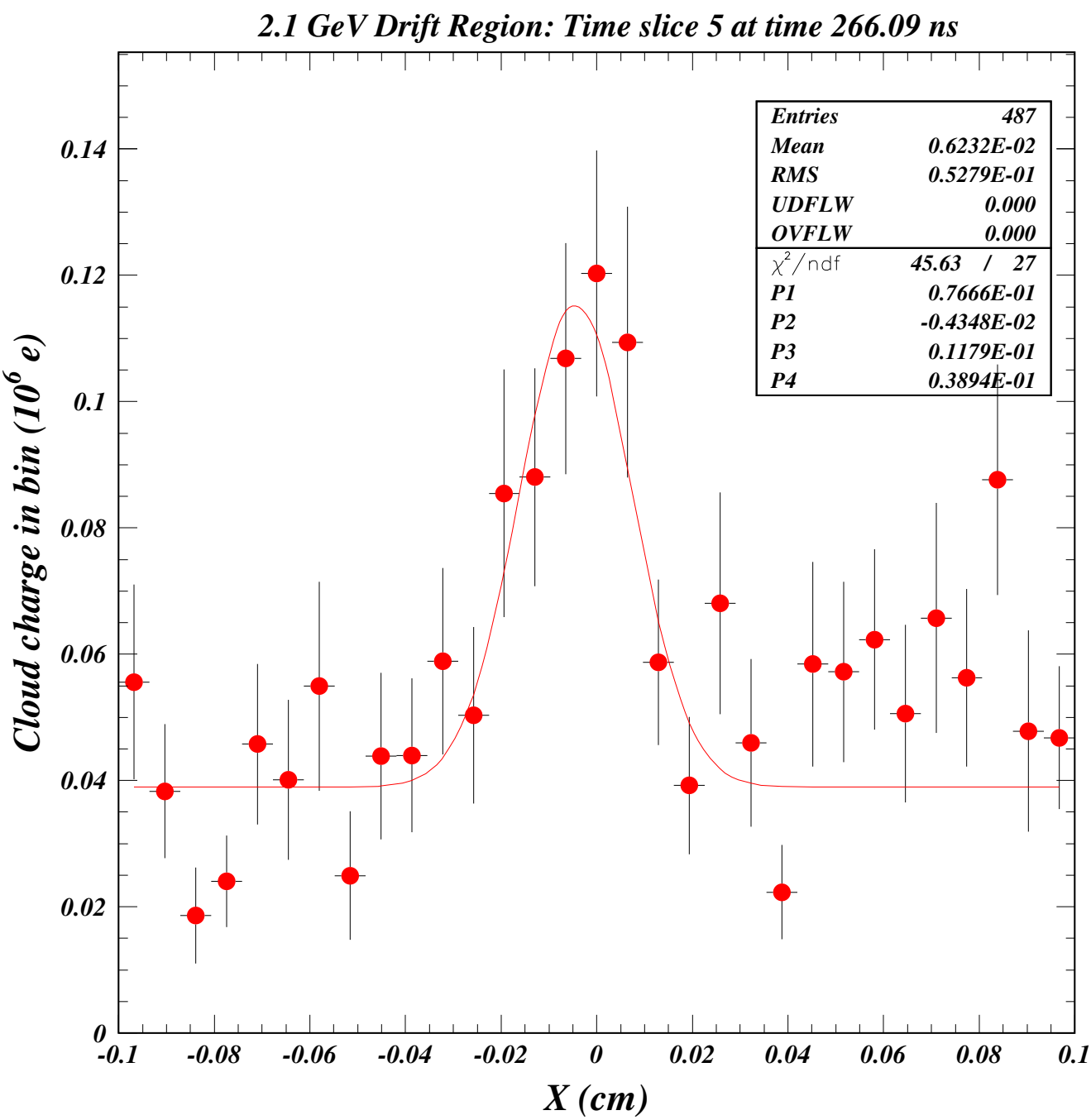
2.1 GeV Drift Region: Time slice 5 at time 266.09 ns
Entries 487
Mean 0.6232E-02
RMS 0.5279E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 45.63 / 27
P1 0.7666E-01
P2 -0.4348E-02
P3 0.1179E-01
P4 0.3894E-01
Cloud charge in bin (10⁶ e)
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1
X (cm)

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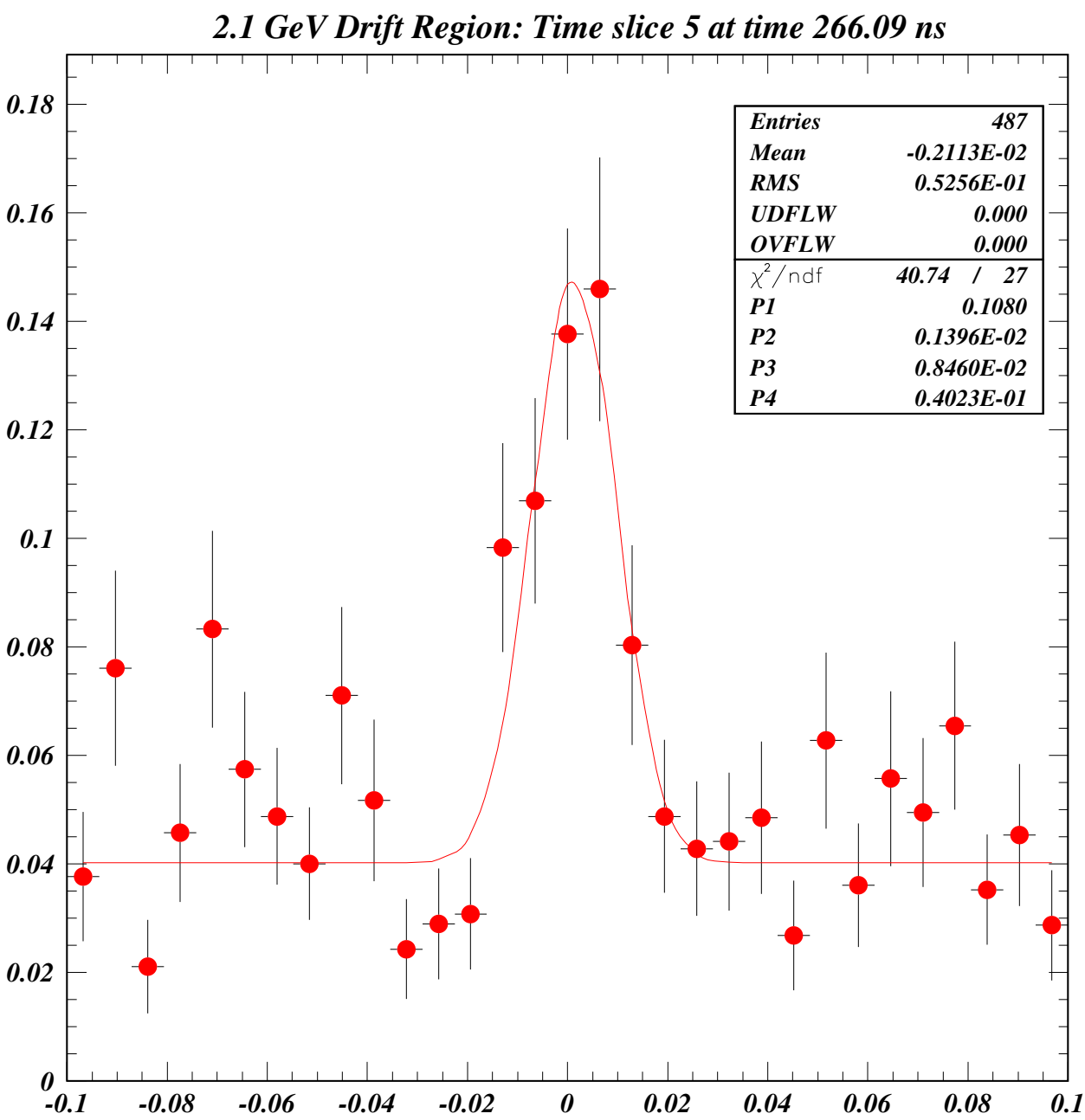
2.1 GeV Drift Region: Time slice 5 at time 266.09 ns
Entries 487
Mean -0.2113E-02
RMS 0.5256E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 40.74 / 27
P1 0.1080
P2 0.1396E-02
P3 0.8460E-02
P4 0.4023E-01
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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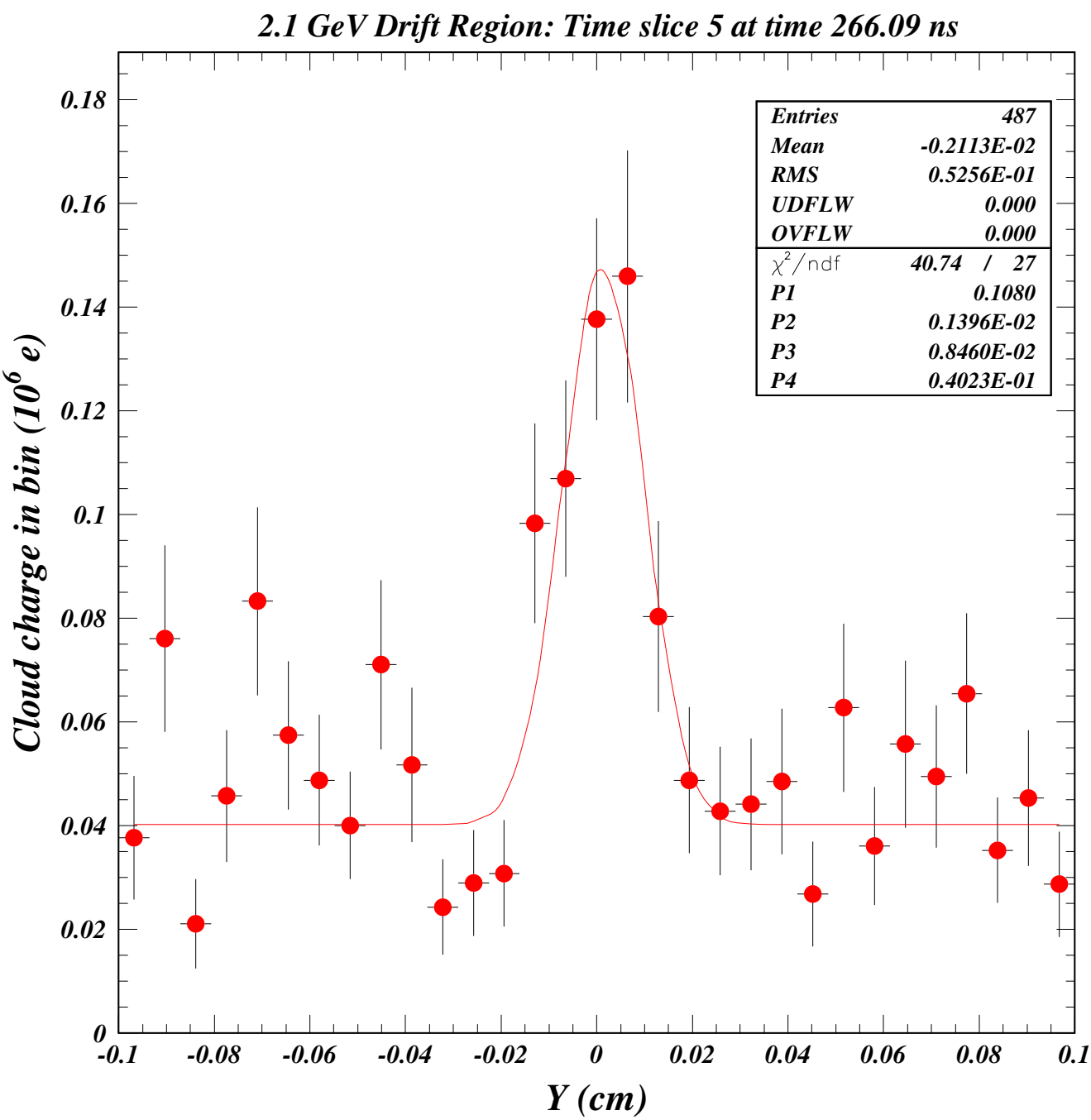
2.1 GeV Drift Region: Time slice 5 at time 266.09 ns
Entries 487
Mean -0.2113E-02
RMS 0.5256E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 40.74 / 27
P1 0.1080
P2 0.1396E-02
P3 0.8460E-02
P4 0.4023E-01
Cloud charge in bin (10⁶ e)
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1
Y (cm)

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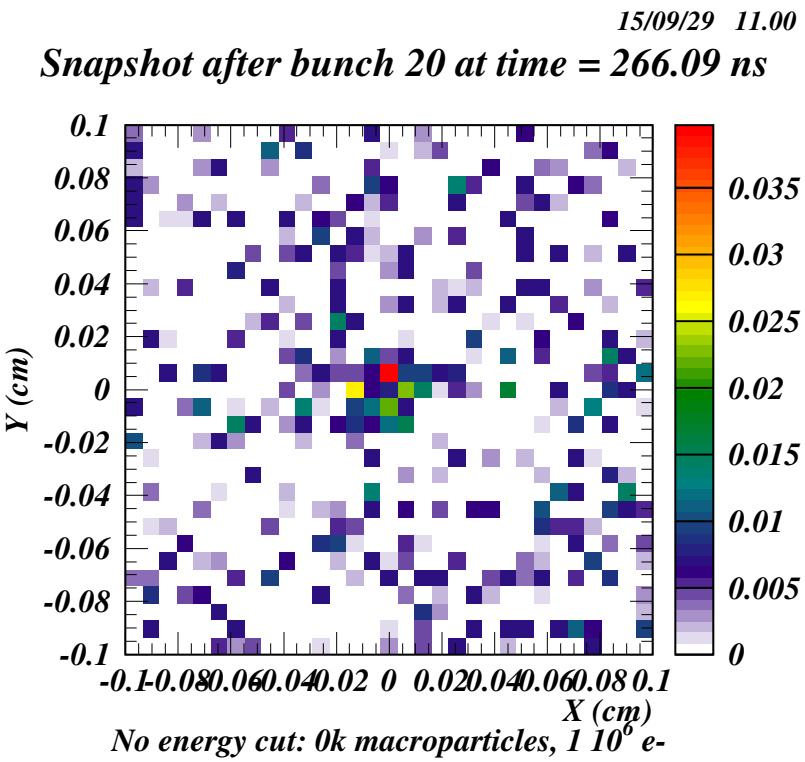
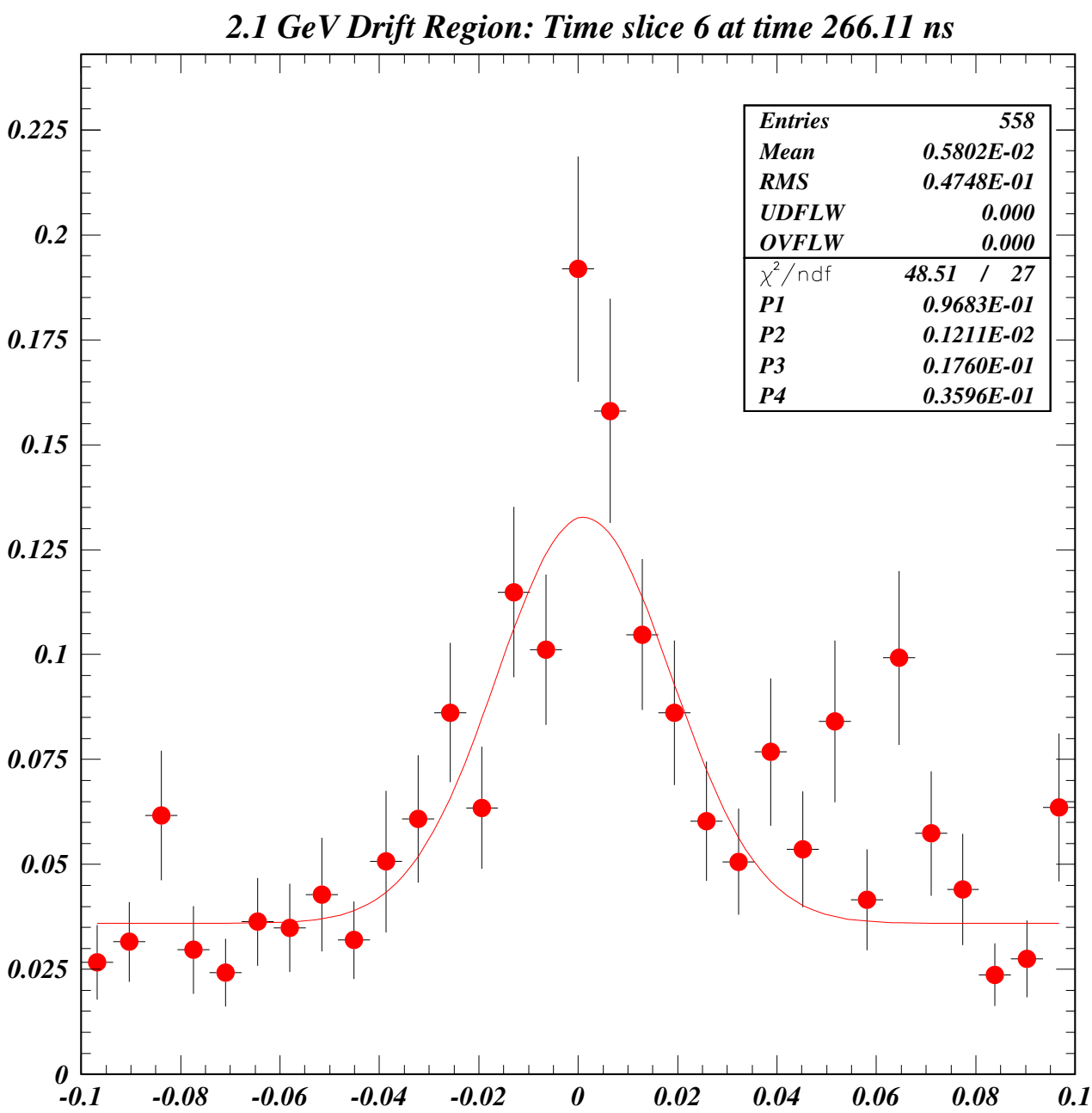

Snapshot after bunch 20 at time = 266.09 ns
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
Y (cm)
-0.1 -0.08 -0.06 -0.04 -0.02 0 0.02 0.04 0.06 0.08 0.1
X (cm)
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
No energy cut: 0k macroparticles, 1 10^6 e-

15/09/29 11.00


2.1 GeV Drift Region: Time slice 6 at time 266.11 ns
Entries 558
Mean 0.5802E-02
RMS 0.4748E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 48.51 / 27
P1 0.9683E-01
P2 0.1211E-02
P3 0.1760E-01
P4 0.3596E-01
0.225
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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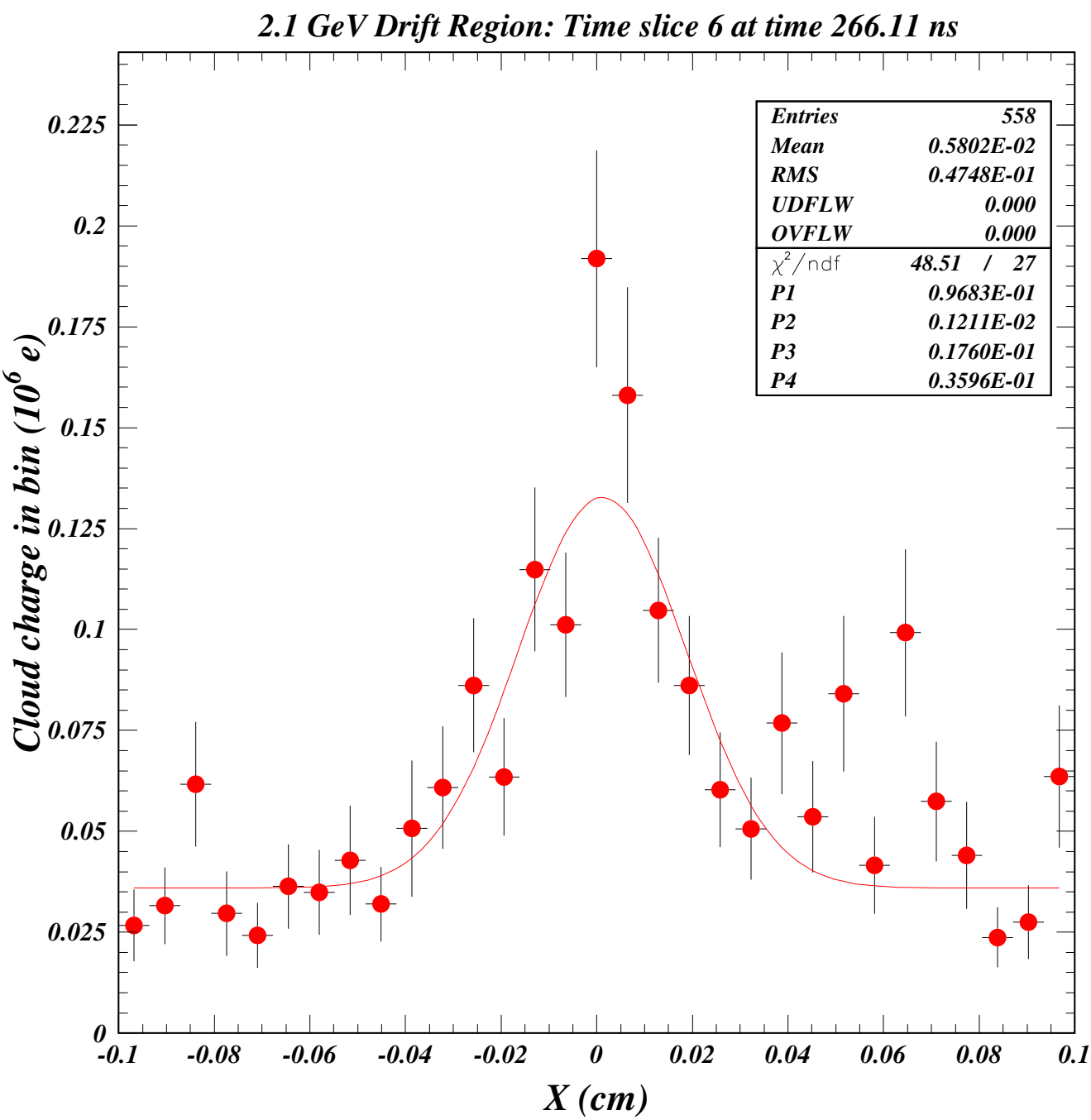
2.1 GeV Drift Region: Time slice 6 at time 266.11 ns
Entries 558
Mean 0.5802E-02
RMS 0.4748E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 48.51 / 27
P1 0.9683E-01
P2 0.1211E-02
P3 0.1760E-01
P4 0.3596E-01
Cloud charge in bin (10⁶ e)
X (cm)
0.225
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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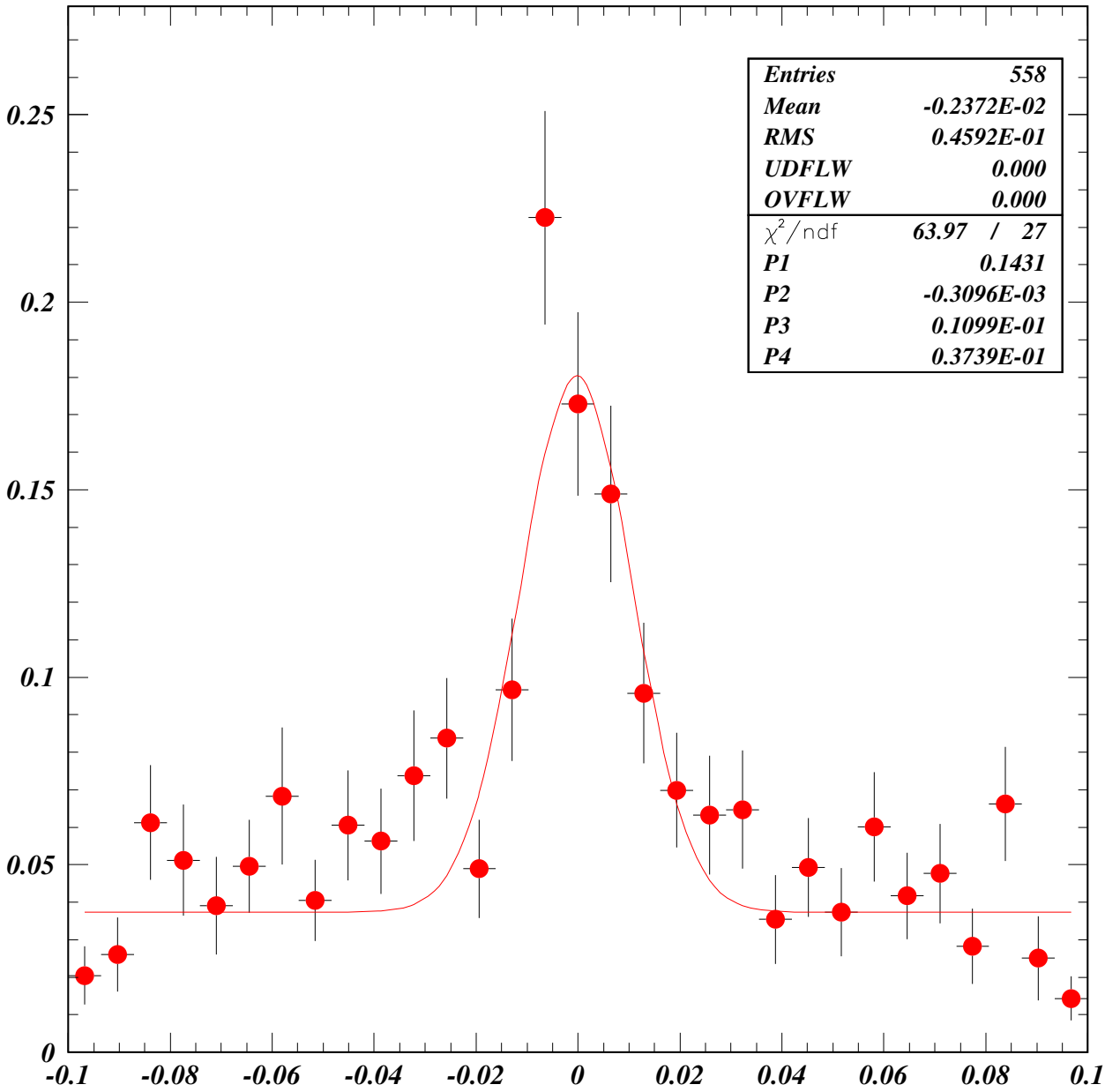
2.1 GeV Drift Region: Time slice 6 at time 266.11 ns



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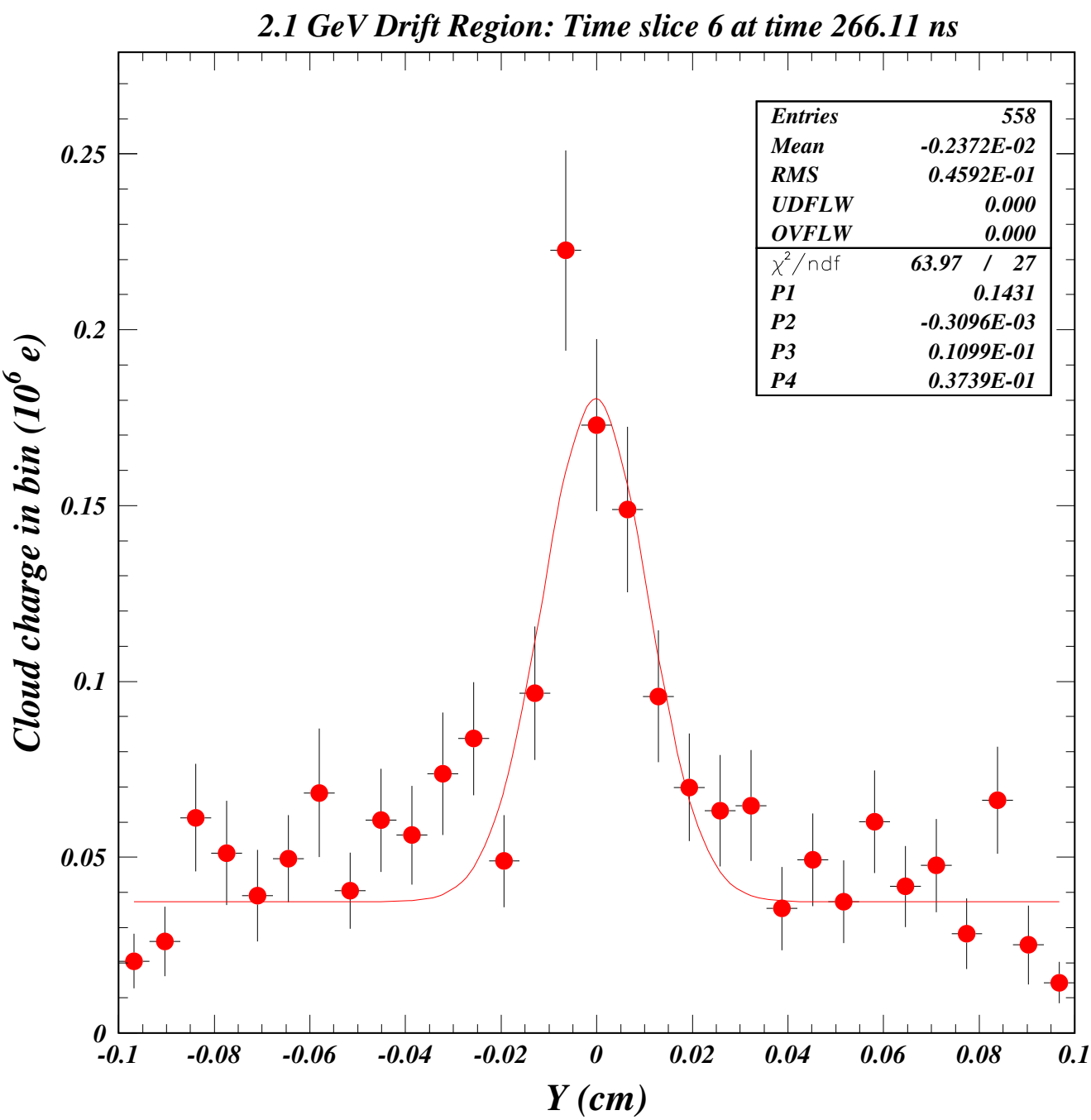
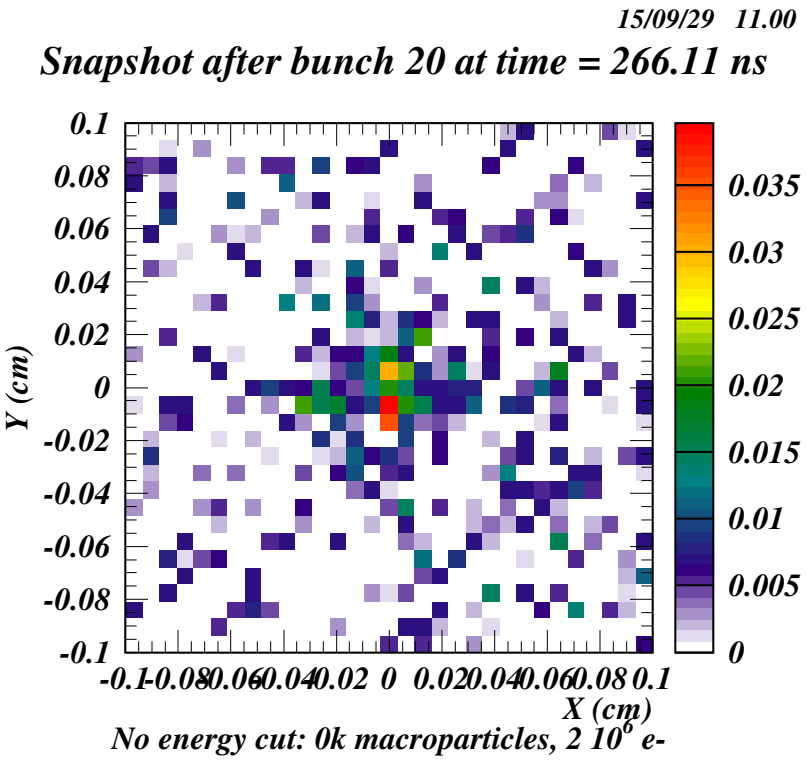

2.1 GeV Drift Region: Time slice 6 at time 266.11 ns
Entries 558
Mean -0.2372E-02
RMS 0.4592E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 63.97 / 27
P1 0.1431
P2 -0.3096E-03
P3 0.1099E-01
P4 0.3739E-01
Cloud charge in bin (10⁶ e)
0.25
0.2
0.15
0.1
0.05
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1
Y (cm)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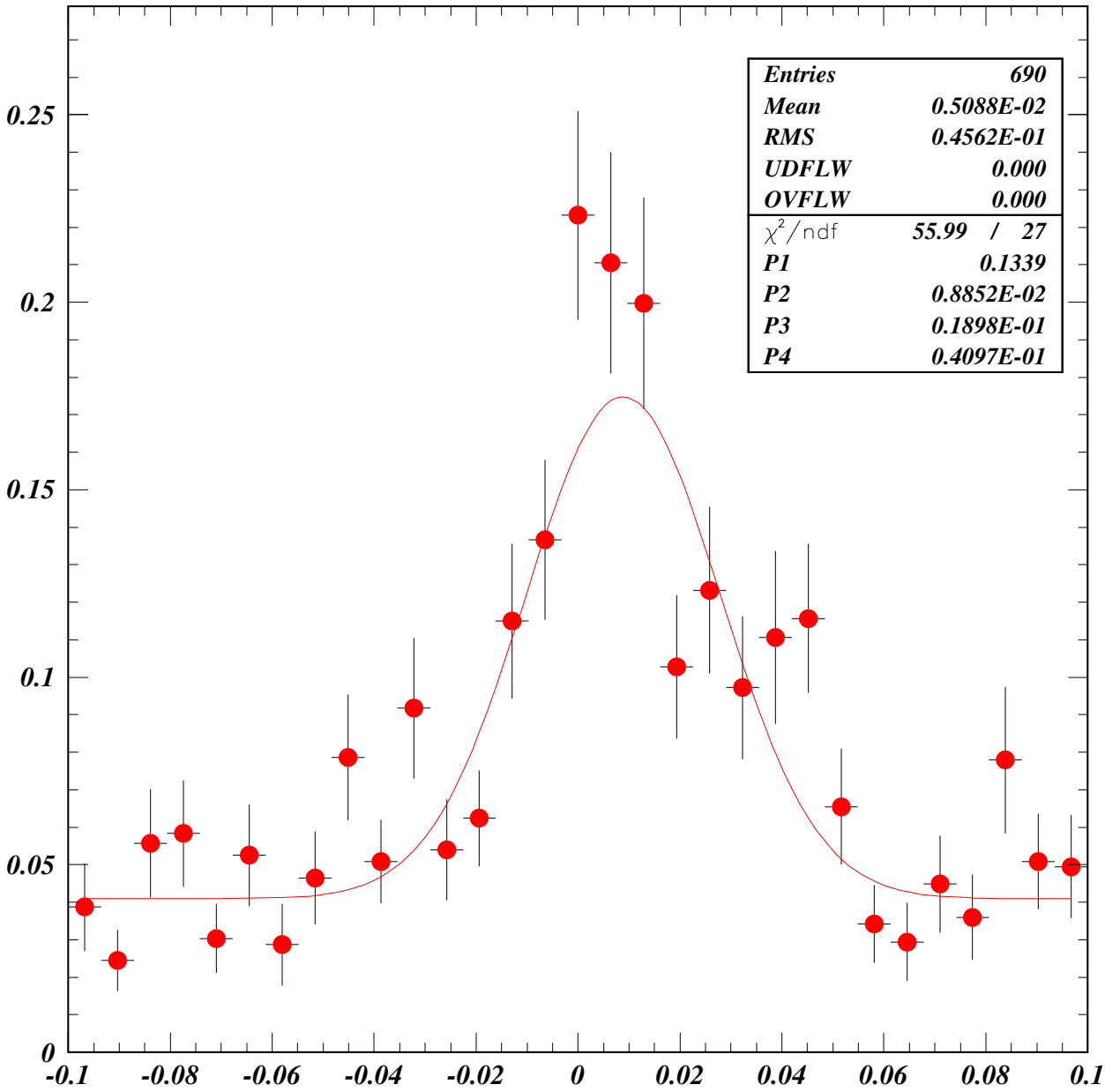
Snapshot after bunch 20 at time = 266.11 ns
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
Y (cm)
-0.1 -0.08 -0.06 -0.04 -0.02 0 0.02 0.04 0.06 0.08 0.1
X (cm)
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
No energy cut: 0k macroparticles, 2 10^6 e-

15/09/29 11.00

2.1 GeV Drift Region: Time slice 7 at time 266.13 ns



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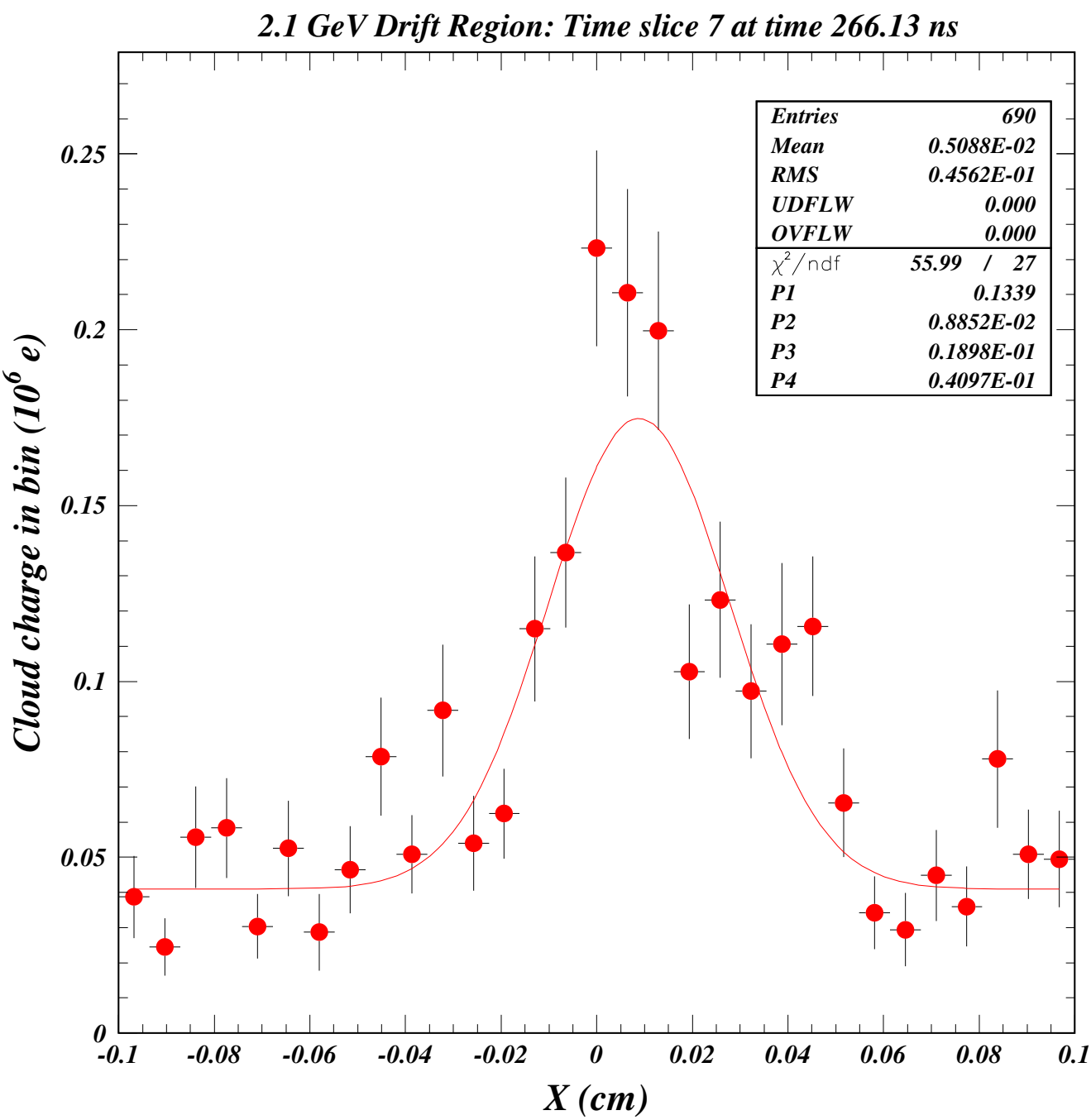
2.1 GeV Drift Region: Time slice 7 at time 266.13 ns
Entries 690
Mean 0.5088E-02
RMS 0.4562E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 55.99 / 27
P1 0.1339
P2 0.8852E-02
P3 0.1898E-01
P4 0.4097E-01
Cloud charge in bin (10⁶ e)
0
0.05
0.1
0.15
0.2
0.25
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1
X (cm)

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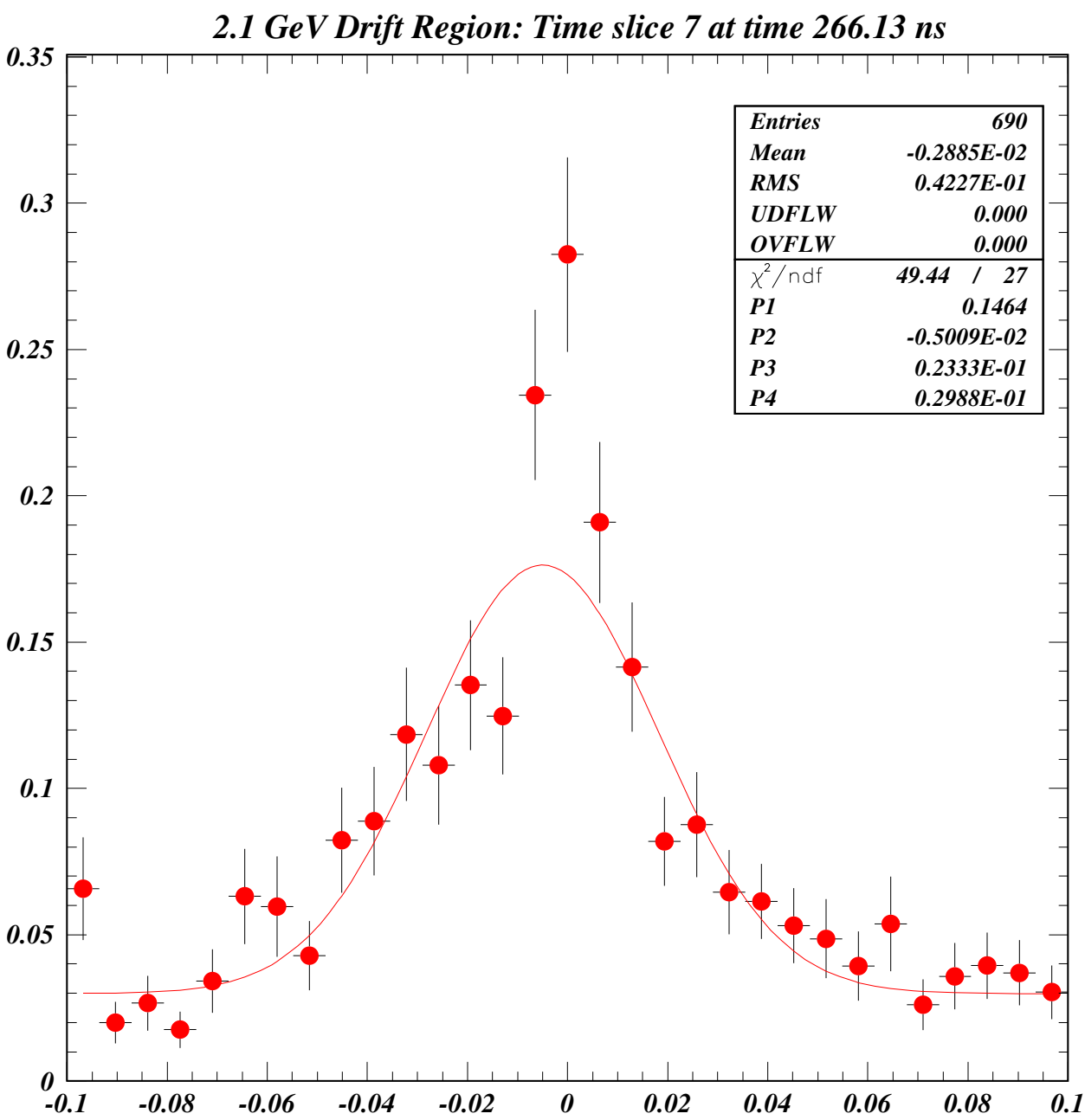
2.1 GeV Drift Region: Time slice 7 at time 266.13 ns
Entries 690
Mean -0.2885E-02
RMS 0.4227E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 49.44 / 27
P1 0.1464
P2 -0.5009E-02
P3 0.2333E-01
P4 0.2988E-01
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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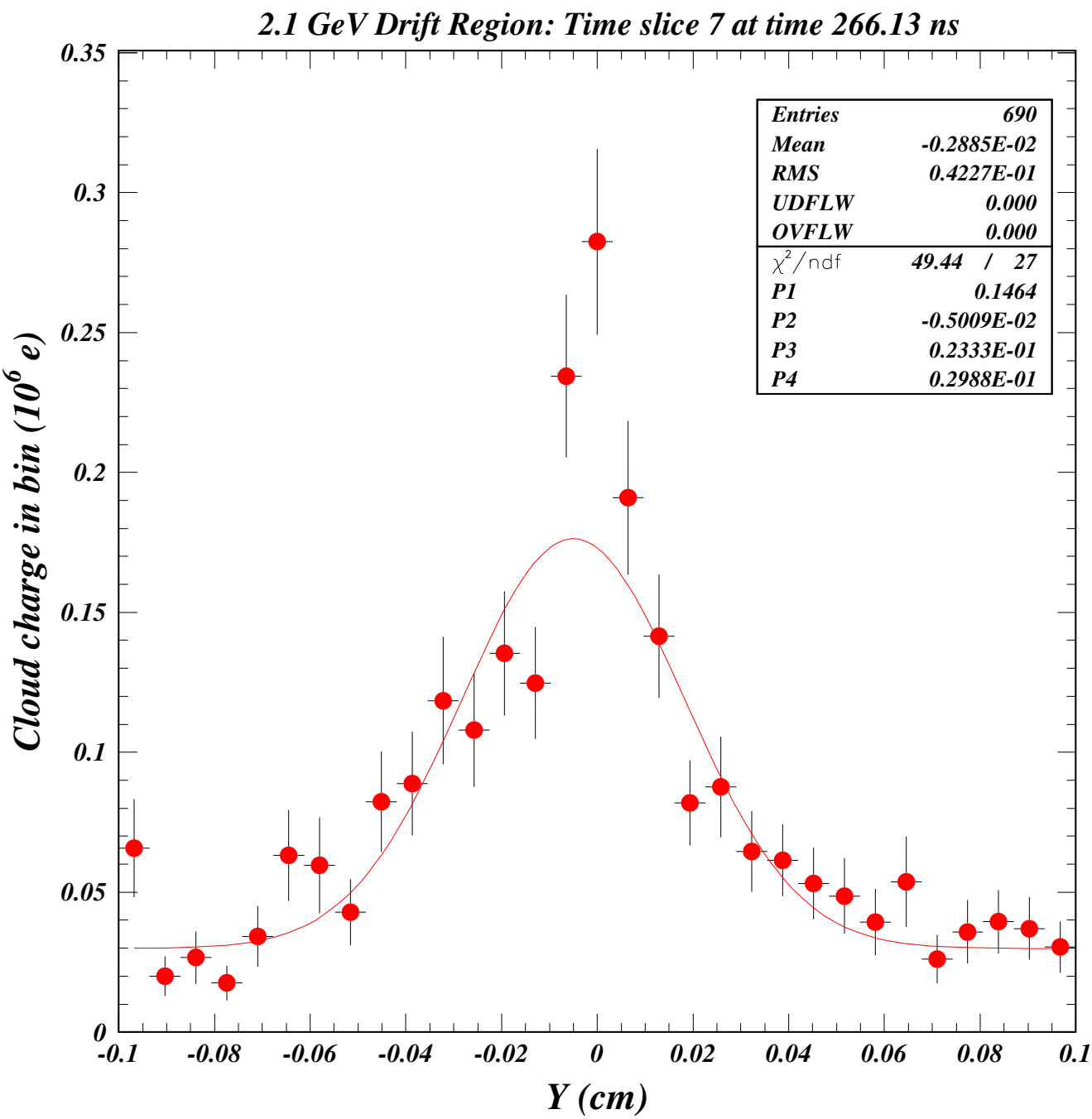
2.1 GeV Drift Region: Time slice 7 at time 266.13 ns
Entries 690
Mean -0.2885E-02
RMS 0.4227E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 49.44 / 27
P1 0.1464
P2 -0.5009E-02
P3 0.2333E-01
P4 0.2988E-01
Cloud charge in bin (10⁶ e)
Y (cm)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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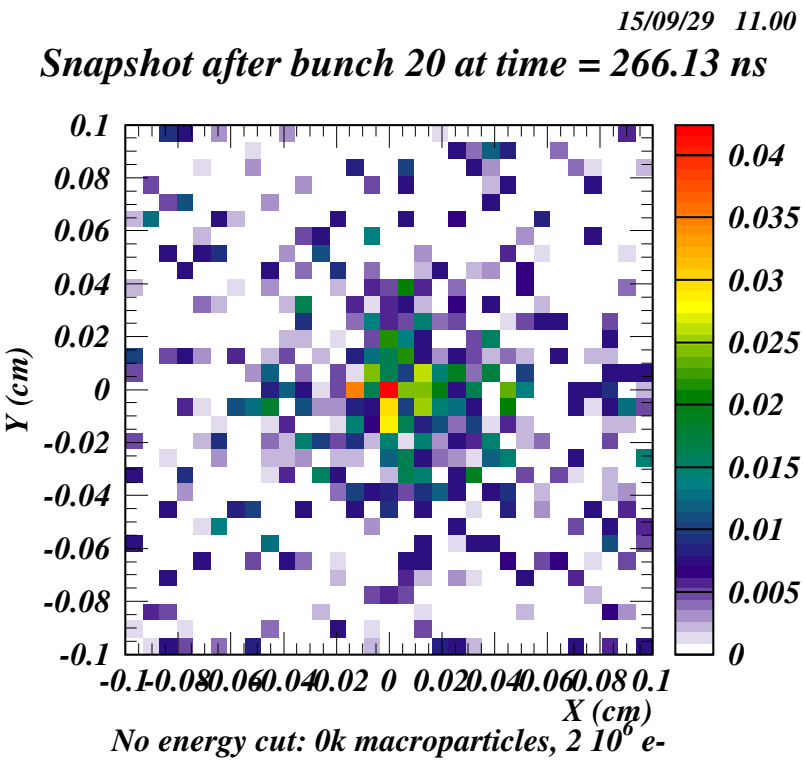
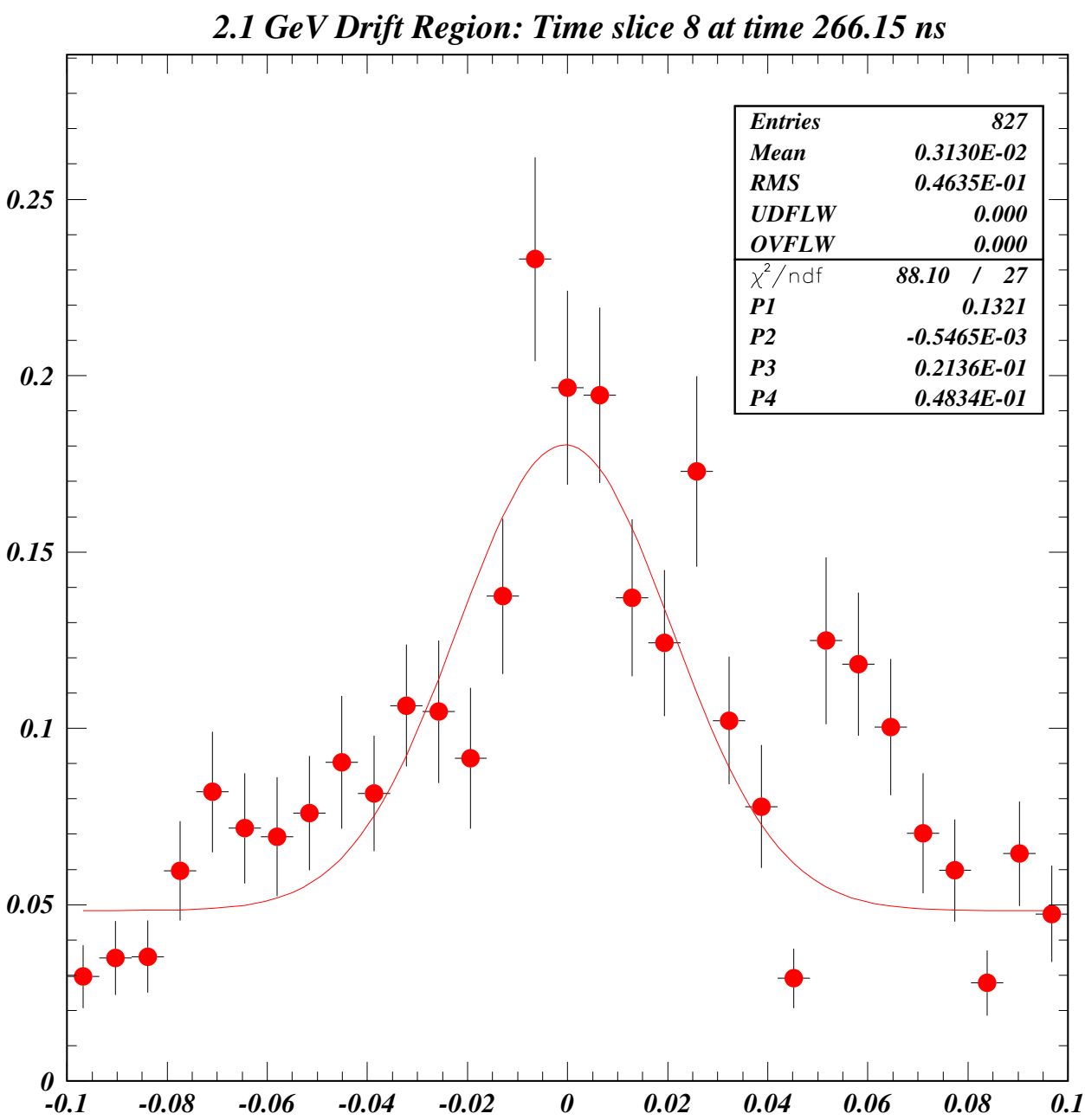

Snapshot after bunch 20 at time = 266.13 ns
Y (cm)
X (cm)
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
No energy cut: 0k macroparticles, 2 10^6 e-

15/09/29 11.00


2.1 GeV Drift Region: Time slice 8 at time 266.15 ns
Entries 827
Mean 0.3130E-02
RMS 0.4635E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 88.10 / 27
P1 0.1321
P2 -0.5465E-03
P3 0.2136E-01
P4 0.4834E-01
0.25
0.2
0.15
0.1
0.05
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

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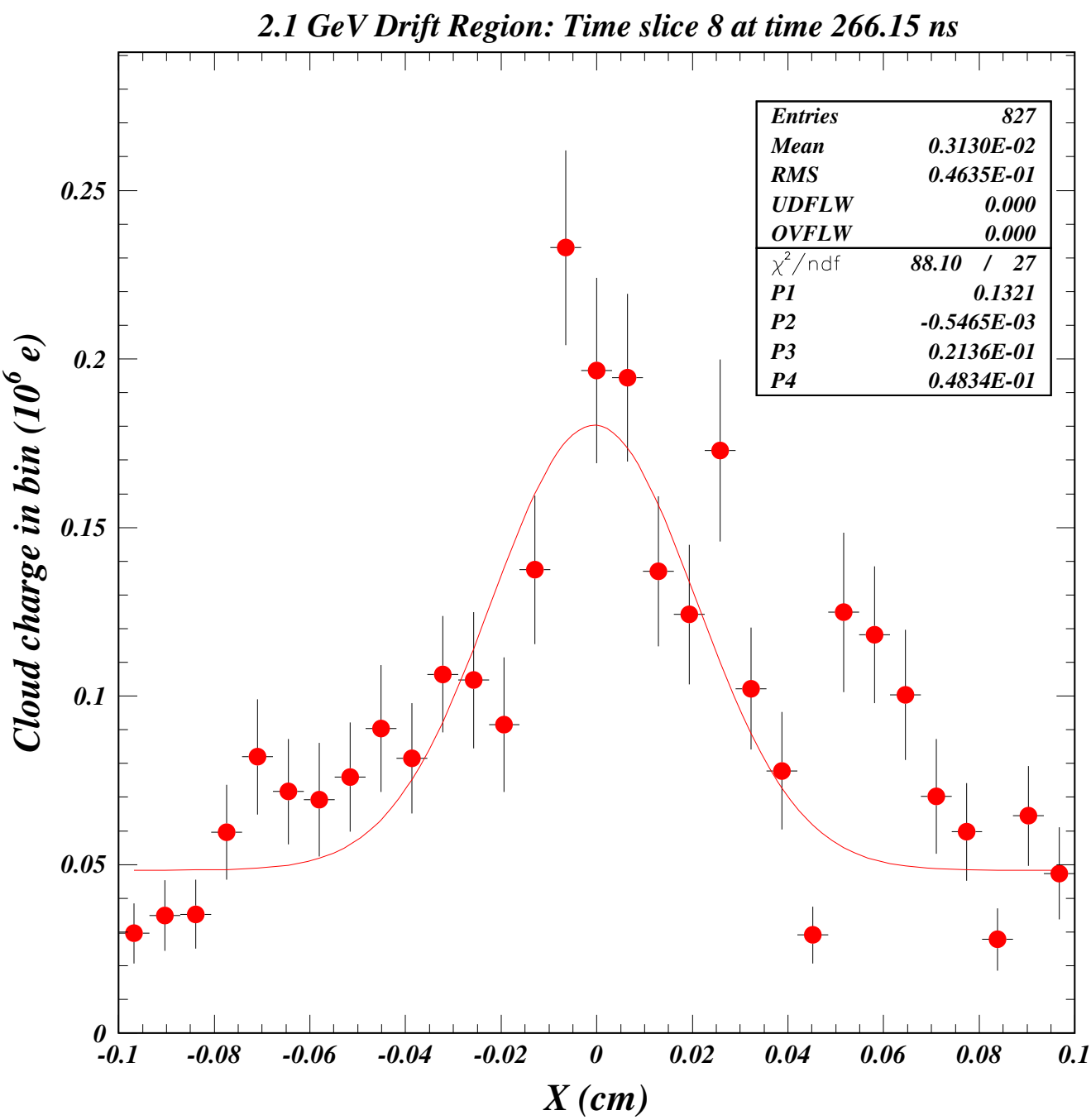
2.1 GeV Drift Region: Time slice 8 at time 266.15 ns
Entries 827
Mean 0.3130E-02
RMS 0.4635E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 88.10 / 27
P1 0.1321
P2 -0.5465E-03
P3 0.2136E-01
P4 0.4834E-01
Cloud charge in bin (10⁶ e)
0
0.05
0.1
0.15
0.2
0.25
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1
X (cm)

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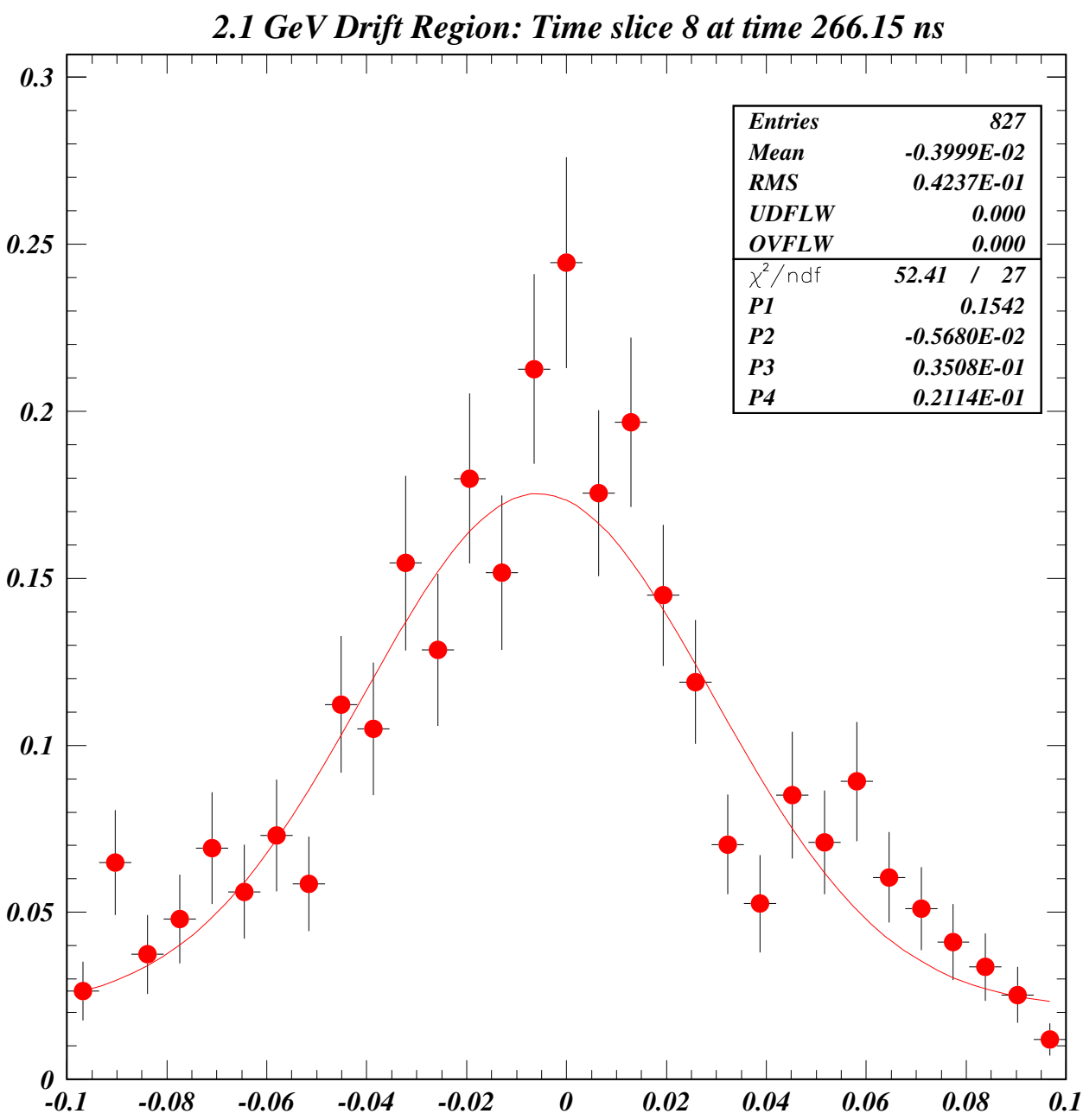
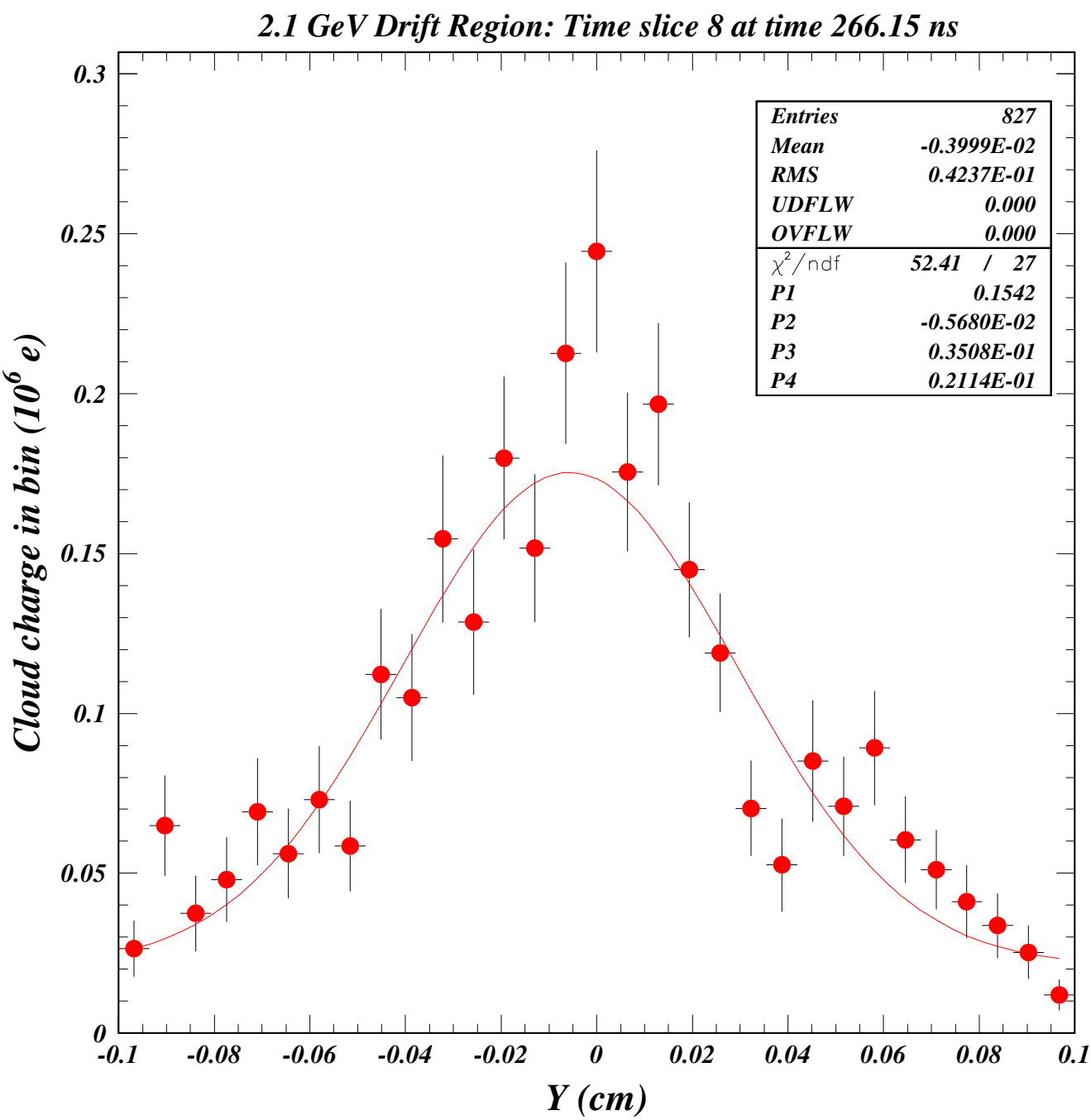
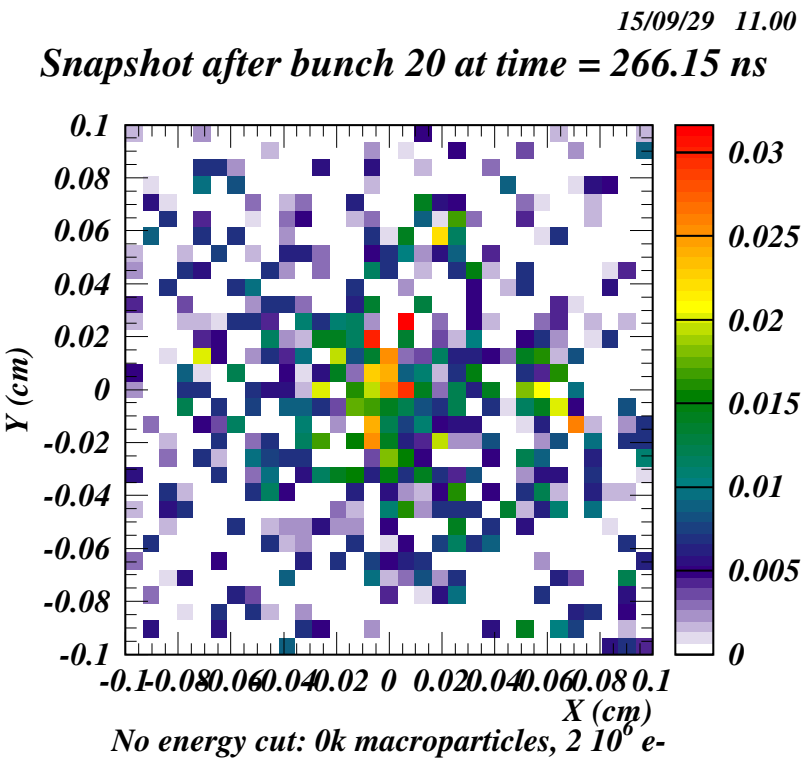

2.1 GeV Drift Region: Time slice 8 at time 266.15 ns
Entries 827
Mean -0.3999E-02
RMS 0.4237E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 52.41 / 27
P1 0.1542
P2 -0.5680E-02
P3 0.3508E-01
P4 0.2114E-01
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

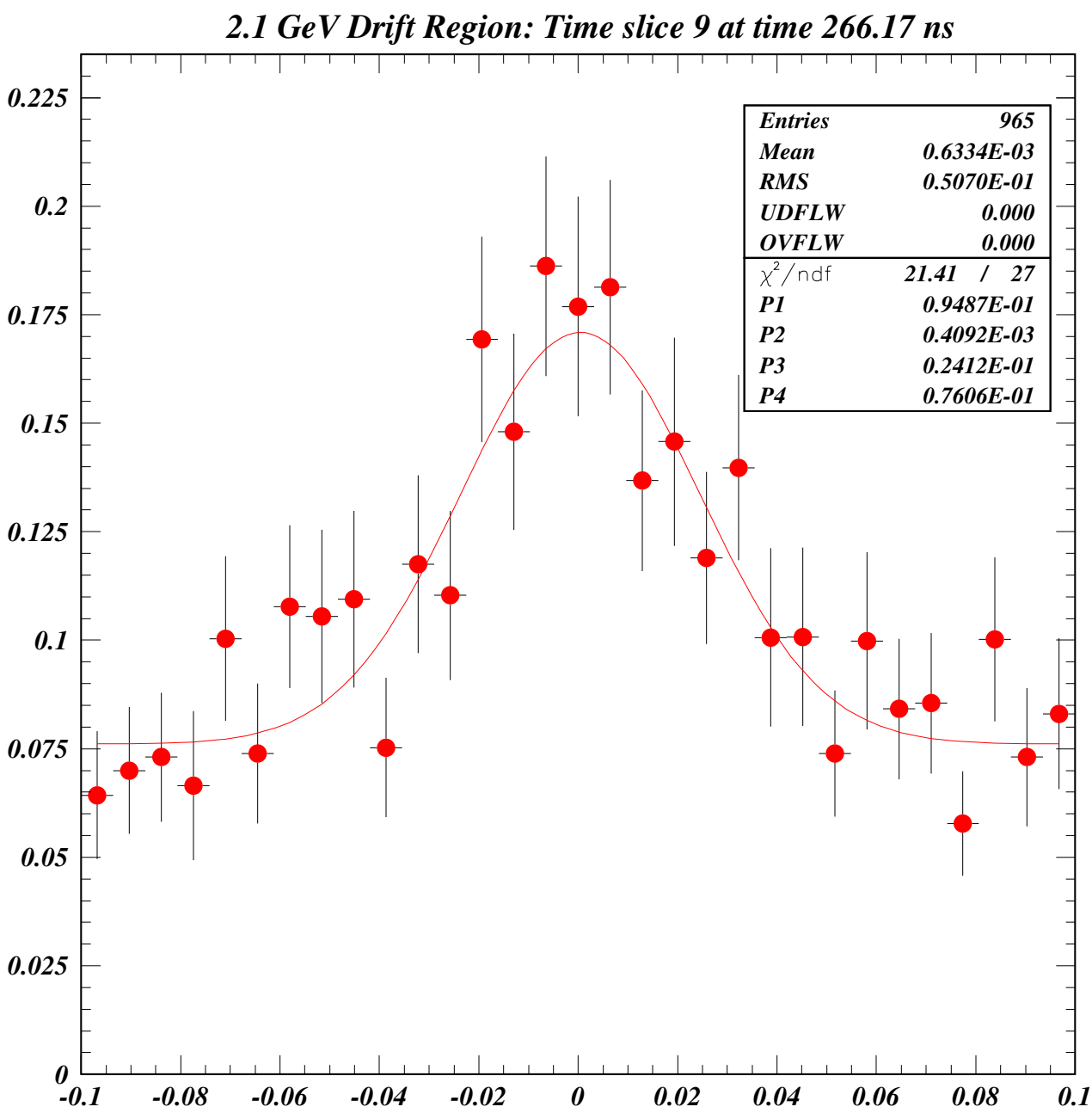
15/09/29 11.00


2.1 GeV Drift Region: Time slice 8 at time 266.15 ns
Entries 827
Mean -0.3999E-02
RMS 0.4237E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 52.41 / 27
P1 0.1542
P2 -0.5680E-02
P3 0.3508E-01
P4 0.2114E-01
Cloud charge in bin (10⁶ e)
Y (cm)
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

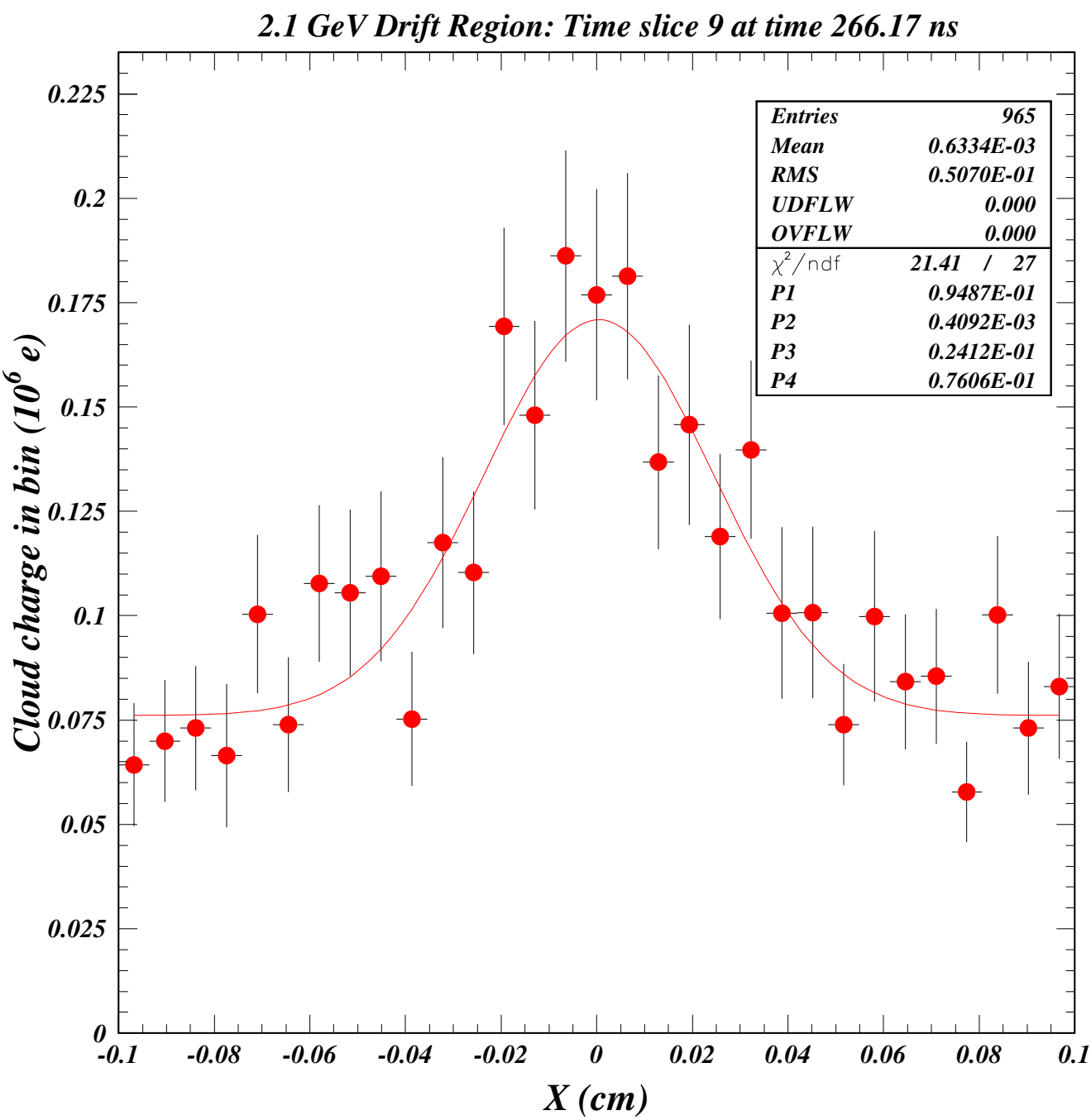
15/09/29 11.00


Snapshot after bunch 20 at time = 266.15 ns
Y (cm)
X (cm)
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
0.03
0.025
0.02
0.015
0.01
0.005
0
No energy cut: 0k macroparticles, 2 10^6 e-

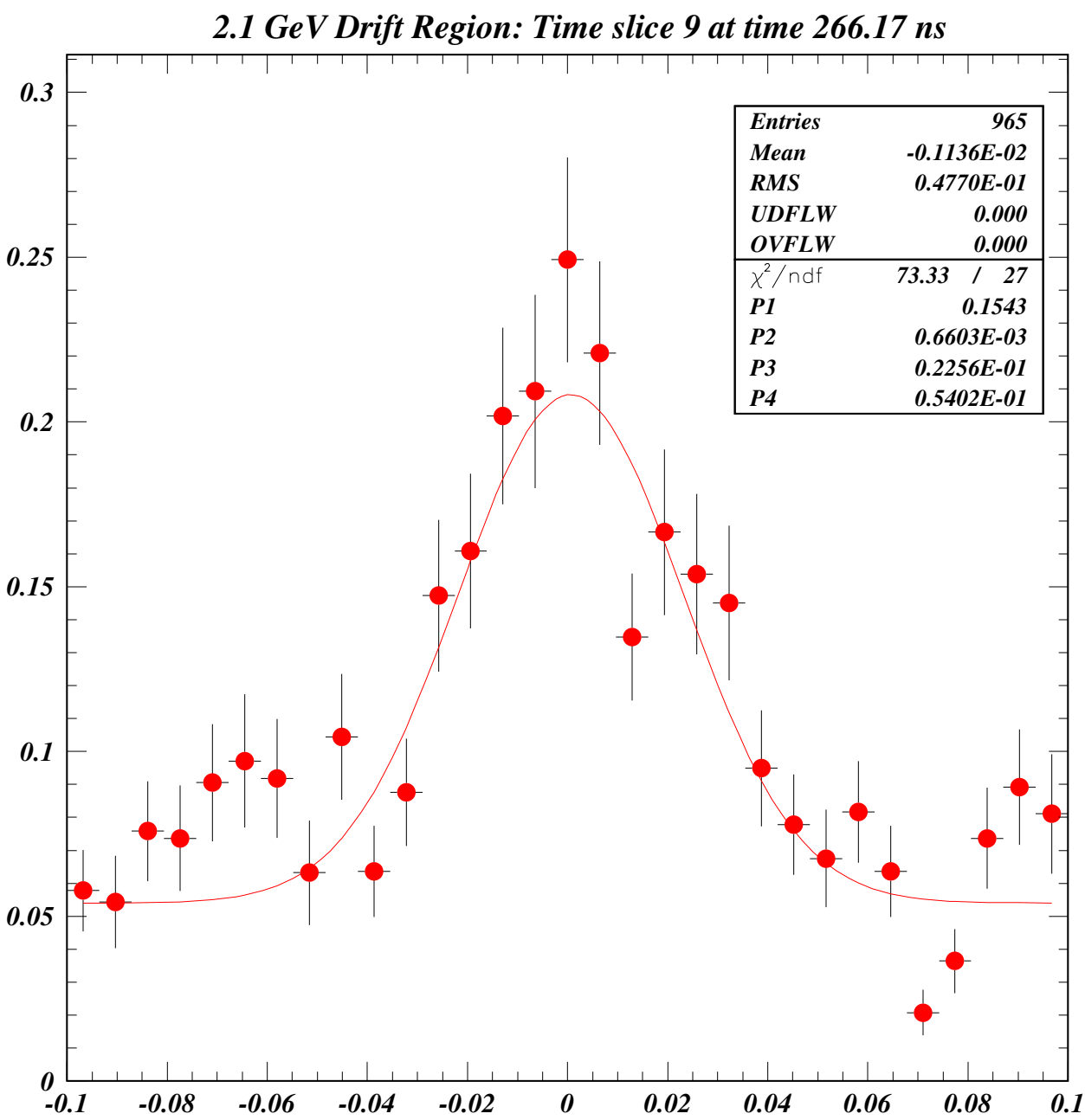
15/09/29 11.00


2.1 GeV Drift Region: Time slice 9 at time 266.17 ns
Entries 965
Mean 0.6334E-03
RMS 0.5070E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 21.41 / 27
P1 0.9487E-01
P2 0.4092E-03
P3 0.2412E-01
P4 0.7606E-01
0.225
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

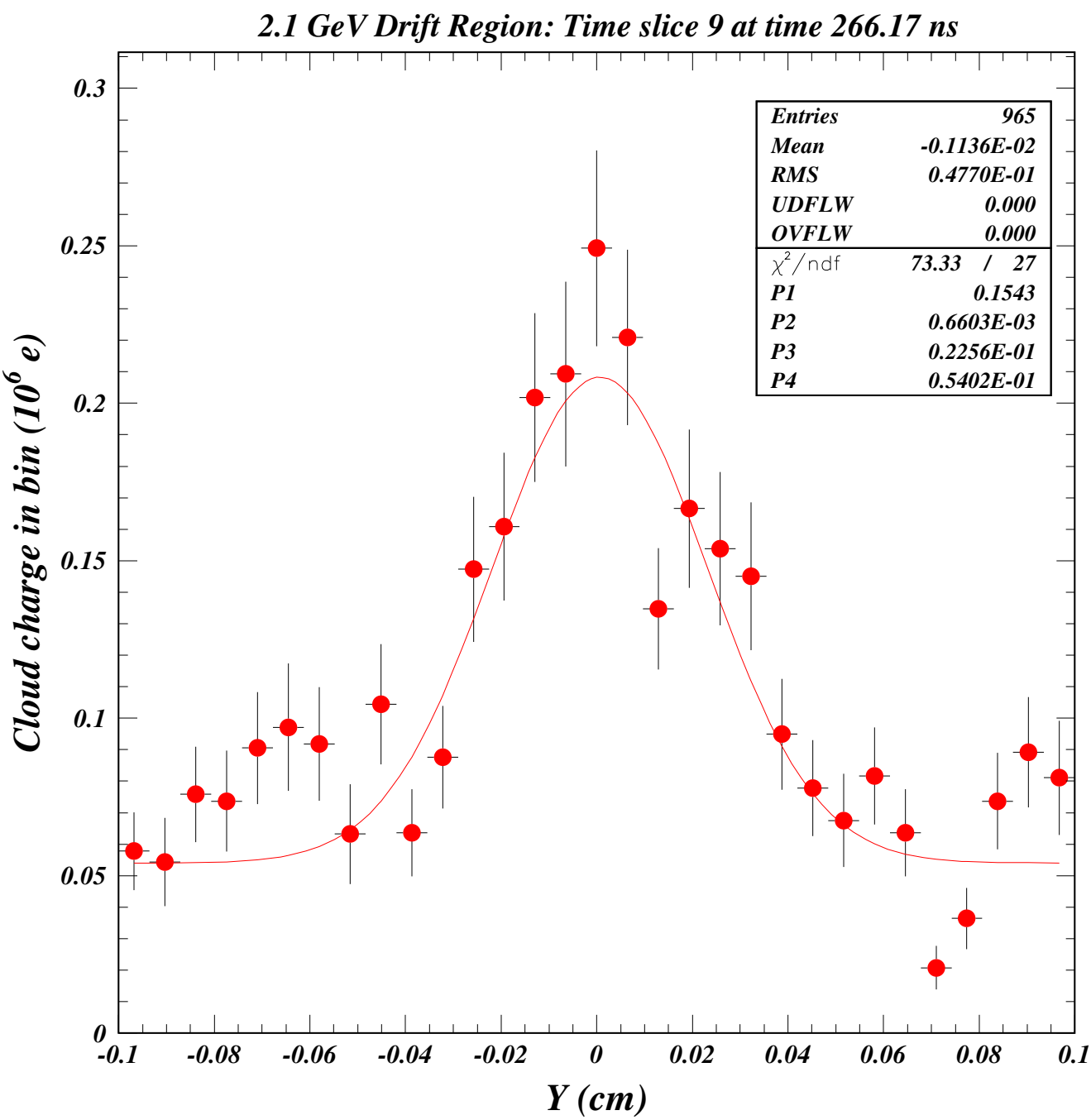
15/09/29 11.00


2.1 GeV Drift Region: Time slice 9 at time 266.17 ns
Entries 965
Mean 0.6334E-03
RMS 0.5070E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 21.41 / 27
P1 0.9487E-01
P2 0.4092E-03
P3 0.2412E-01
P4 0.7606E-01
Cloud charge in bin (10⁶ e)
X (cm)
0.225
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

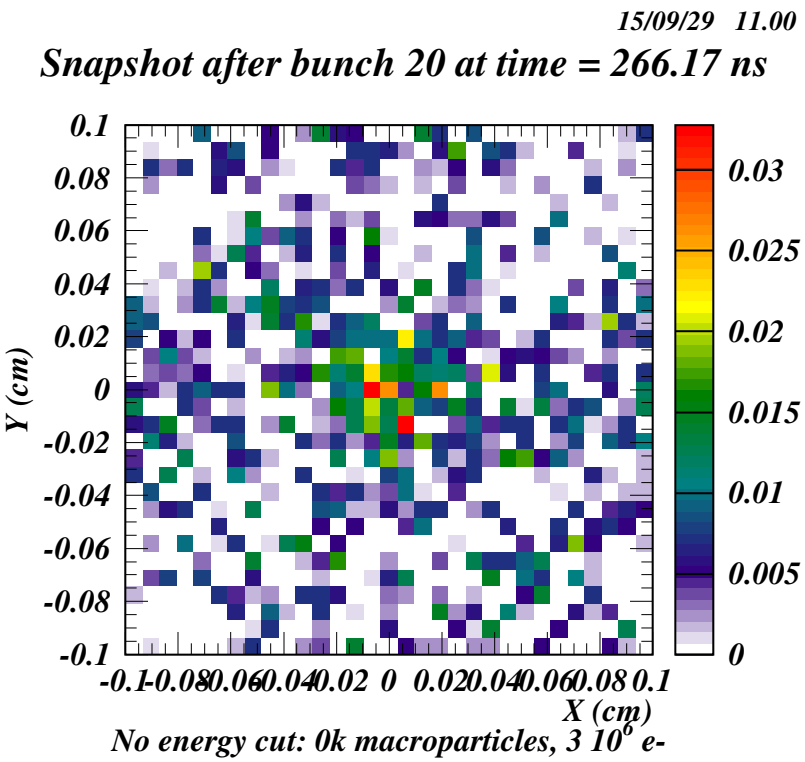
15/09/29 11.00


2.1 GeV Drift Region: Time slice 9 at time 266.17 ns
Entries 965
Mean -0.1136E-02
RMS 0.4770E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 73.33 / 27
P1 0.1543
P2 0.6603E-03
P3 0.2256E-01
P4 0.5402E-01
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

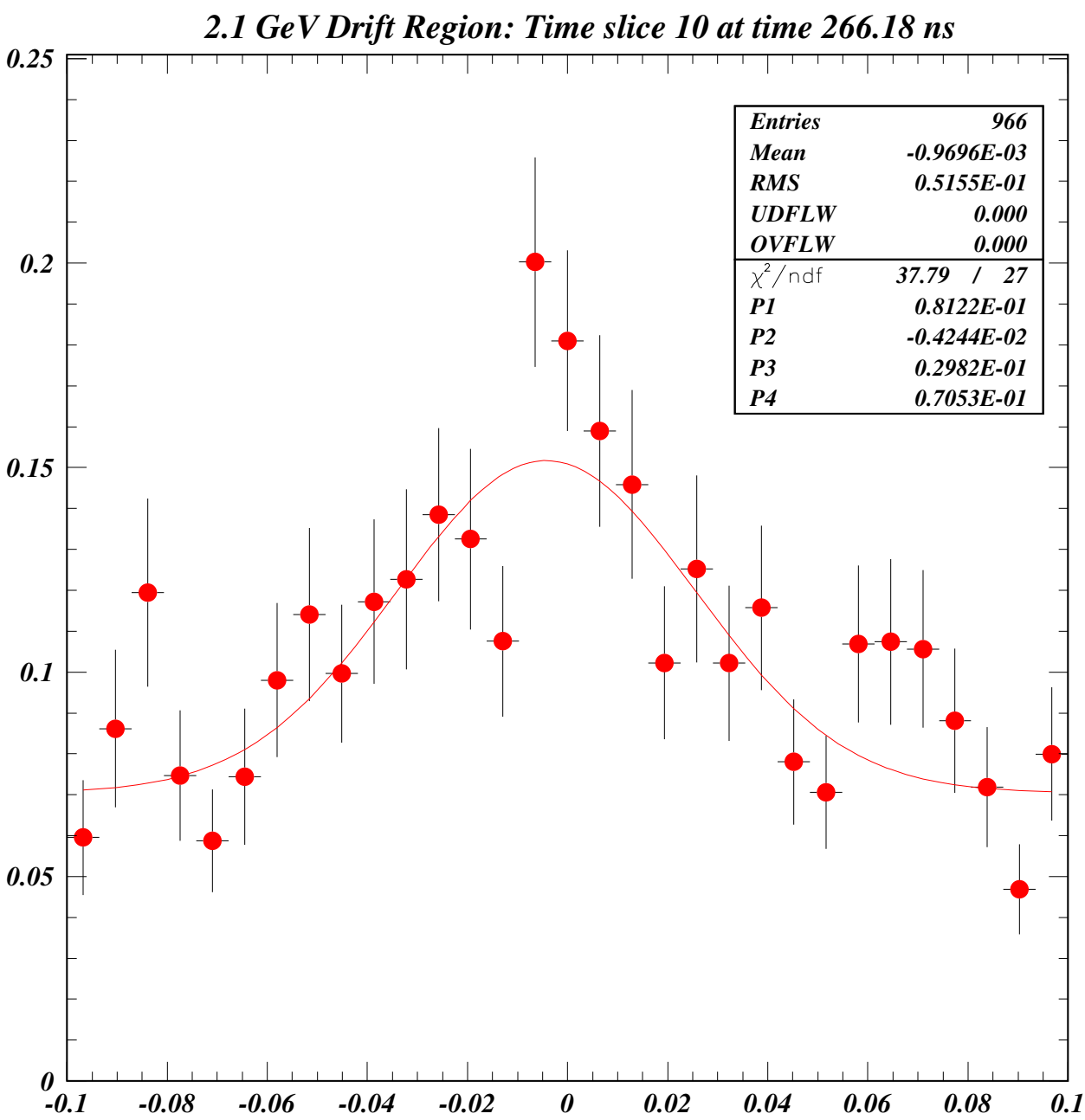
15/09/29 11.00


2.1 GeV Drift Region: Time slice 9 at time 266.17 ns
Entries 965
Mean -0.1136E-02
RMS 0.4770E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 73.33 / 27
P1 0.1543
P2 0.6603E-03
P3 0.2256E-01
P4 0.5402E-01
Cloud charge in bin (10⁶ e)
Y (cm)
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

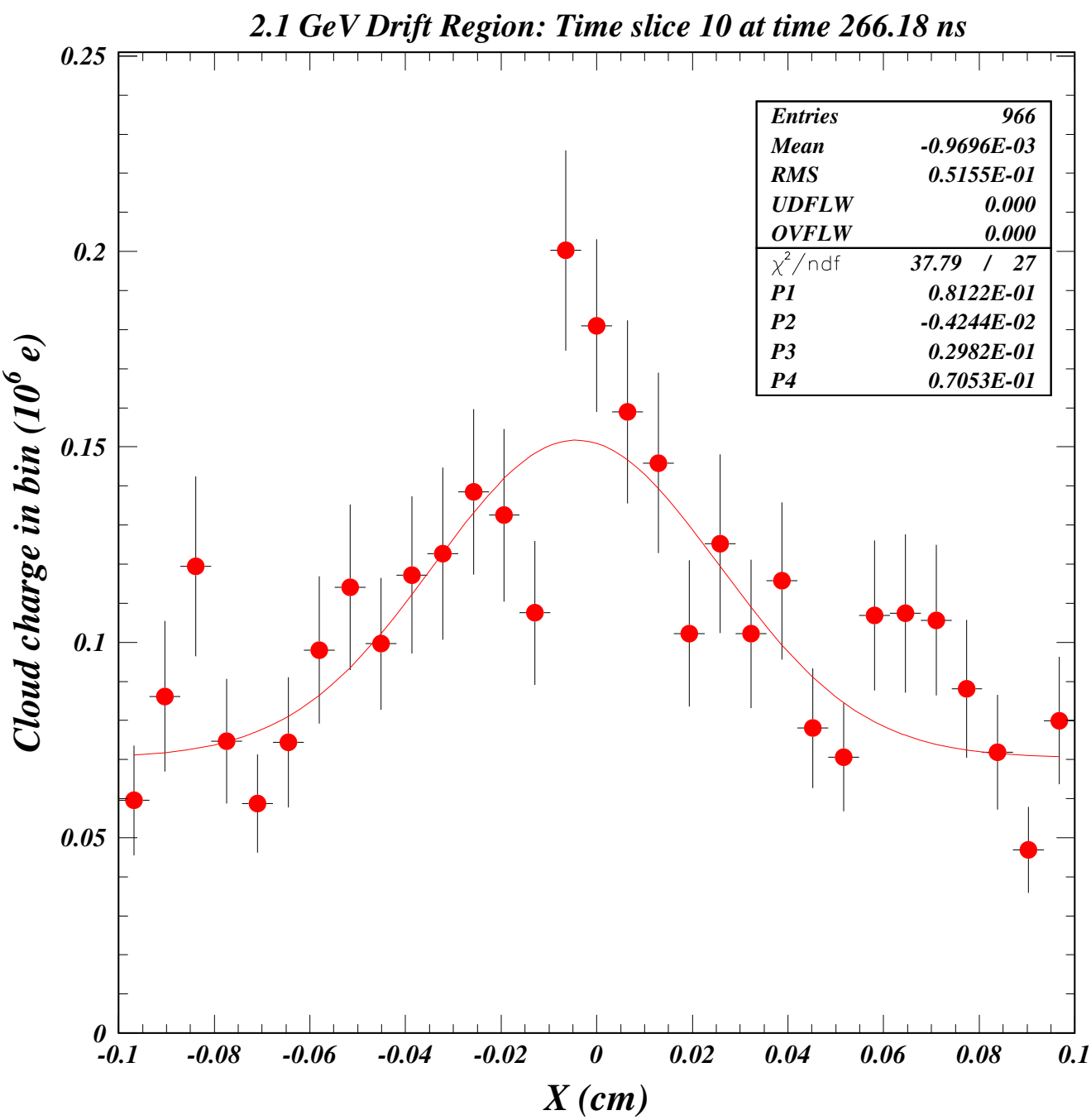
15/09/29 11.00


Snapshot after bunch 20 at time = 266.17 ns
Y (cm)
X (cm)
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
0.03
0.025
0.02
0.015
0.01
0.005
0
No energy cut: 0k macroparticles, 3 10^6 e-

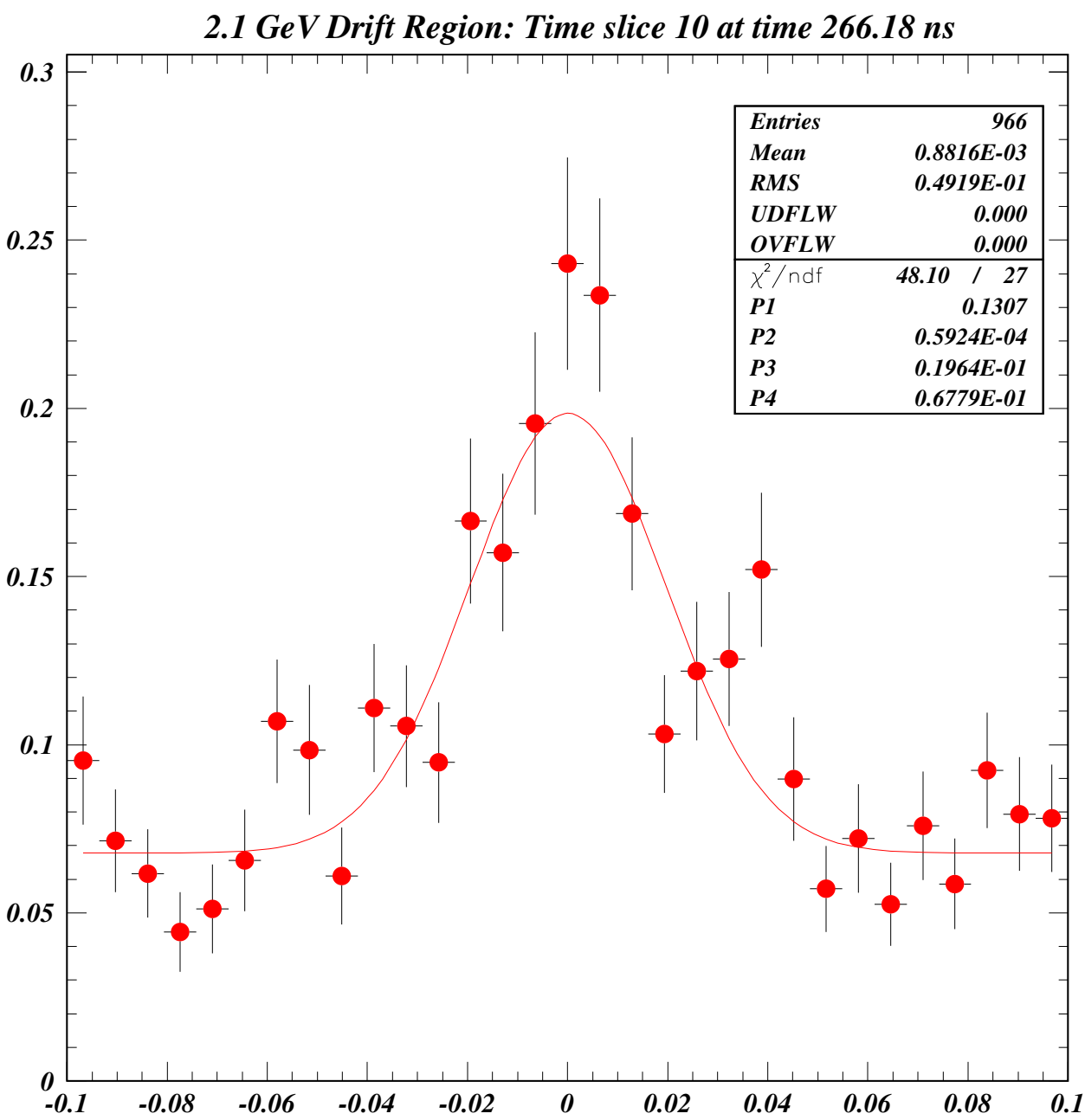
15/09/29 11.00


2.1 GeV Drift Region: Time slice 10 at time 266.18 ns
Entries 966
Mean -0.9696E-03
RMS 0.5155E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 37.79 / 27
P1 0.8122E-01
P2 -0.4244E-02
P3 0.2982E-01
P4 0.7053E-01
0.25
0.2
0.15
0.1
0.05
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

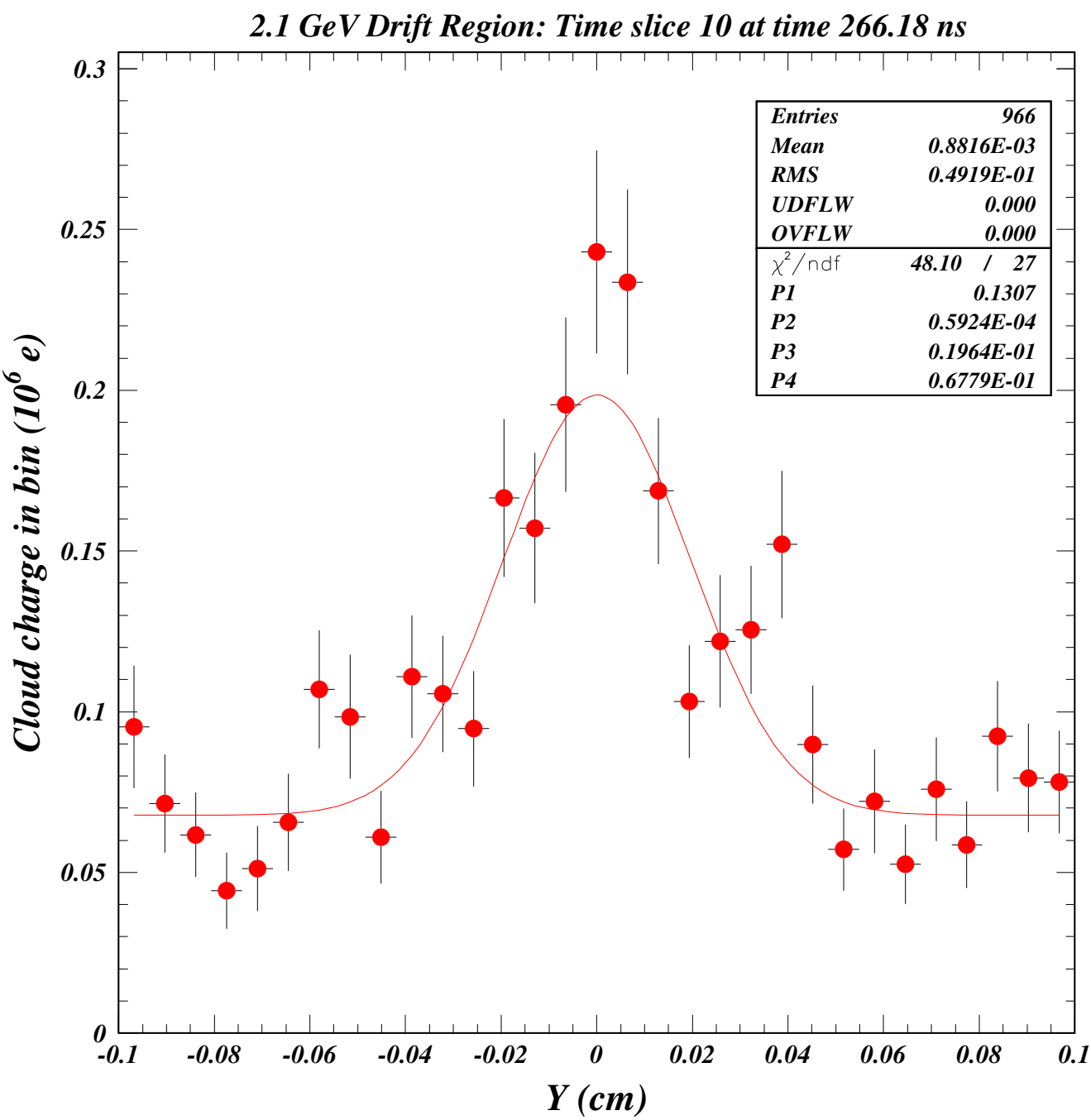
15/09/29 11.00


2.1 GeV Drift Region: Time slice 10 at time 266.18 ns
Entries 966
Mean -0.9696E-03
RMS 0.5155E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 37.79 / 27
P1 0.8122E-01
P2 -0.4244E-02
P3 0.2982E-01
P4 0.7053E-01
Cloud charge in bin (10⁶ e)
X (cm)
0.25
0.2
0.15
0.1
0.05
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

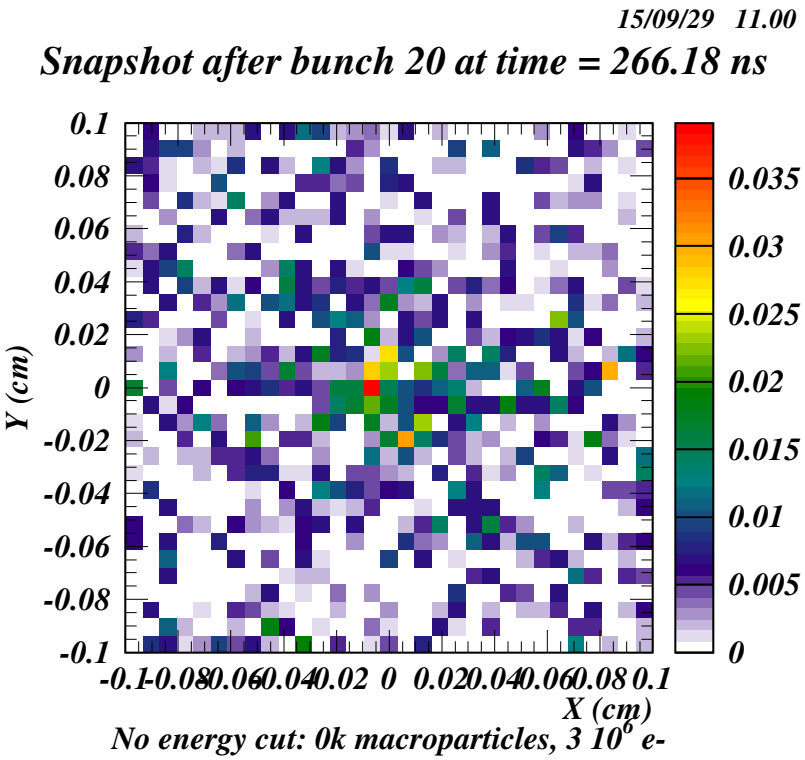
15/09/29 11.00


2.1 GeV Drift Region: Time slice 10 at time 266.18 ns
Entries 966
Mean 0.8816E-03
RMS 0.4919E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 48.10 / 27
P1 0.1307
P2 0.5924E-04
P3 0.1964E-01
P4 0.6779E-01
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

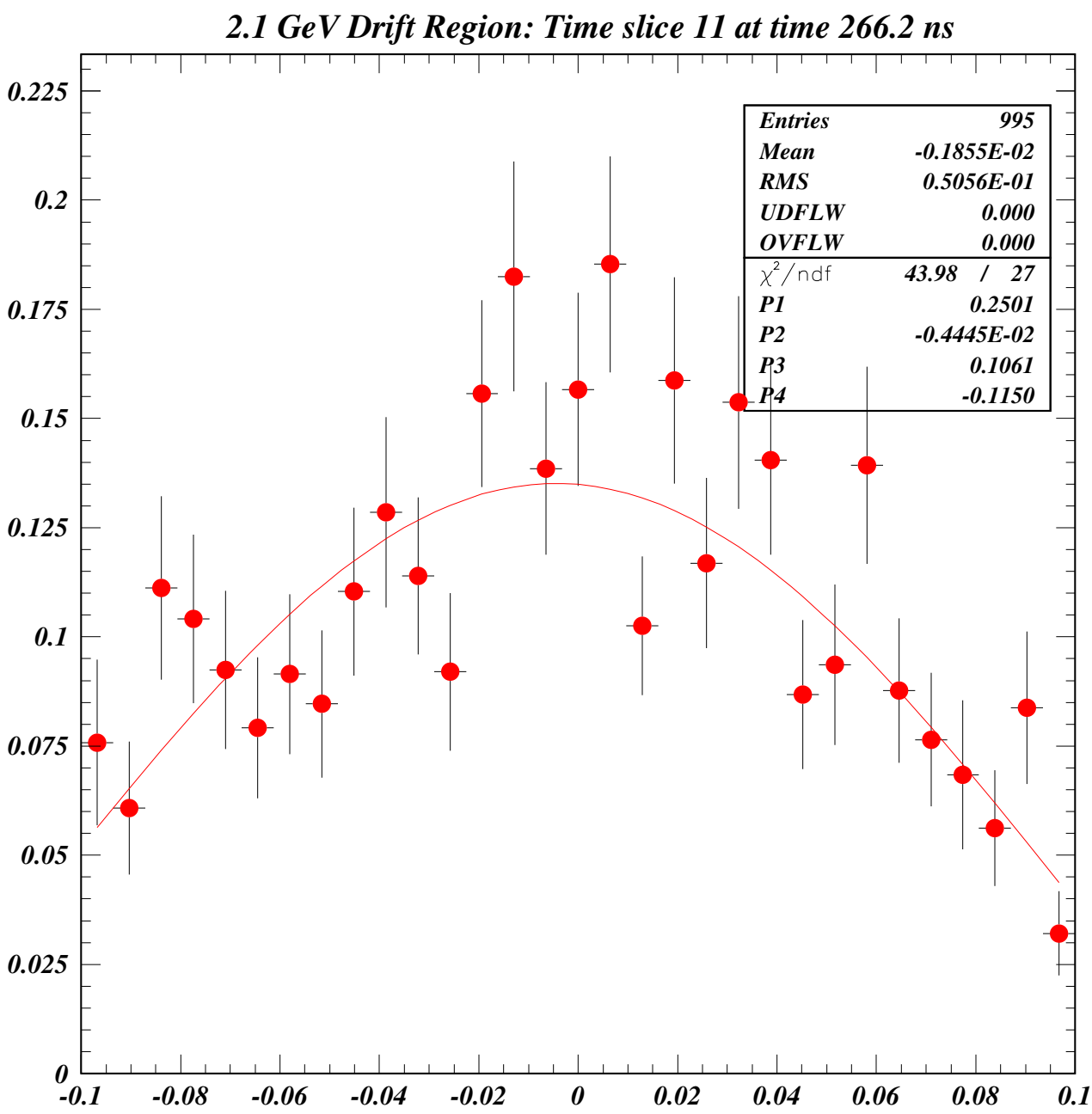
15/09/29 11.00


2.1 GeV Drift Region: Time slice 10 at time 266.18 ns
Entries 966
Mean 0.8816E-03
RMS 0.4919E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 48.10 / 27
P1 0.1307
P2 0.5924E-04
P3 0.1964E-01
P4 0.6779E-01
Cloud charge in bin (10⁶ e)
Y (cm)
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

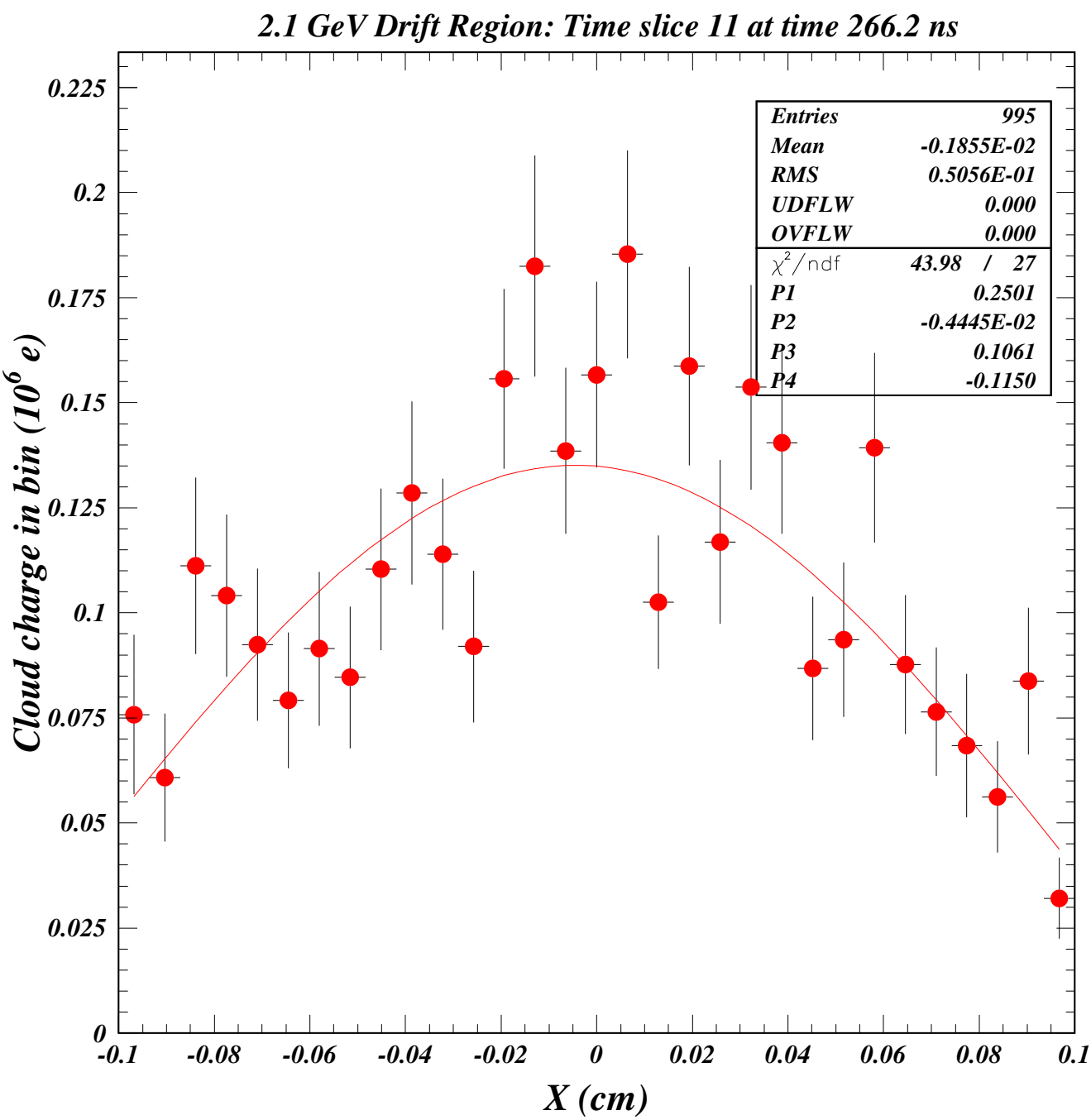
15/09/29 11.00


Snapshot after bunch 20 at time = 266.18 ns
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
Y (cm)
-0.1 -0.08 -0.06 -0.04 -0.02 0 0.02 0.04 0.06 0.08 0.1
X (cm)
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
No energy cut: 0k macroparticles, 3 10^6 e-

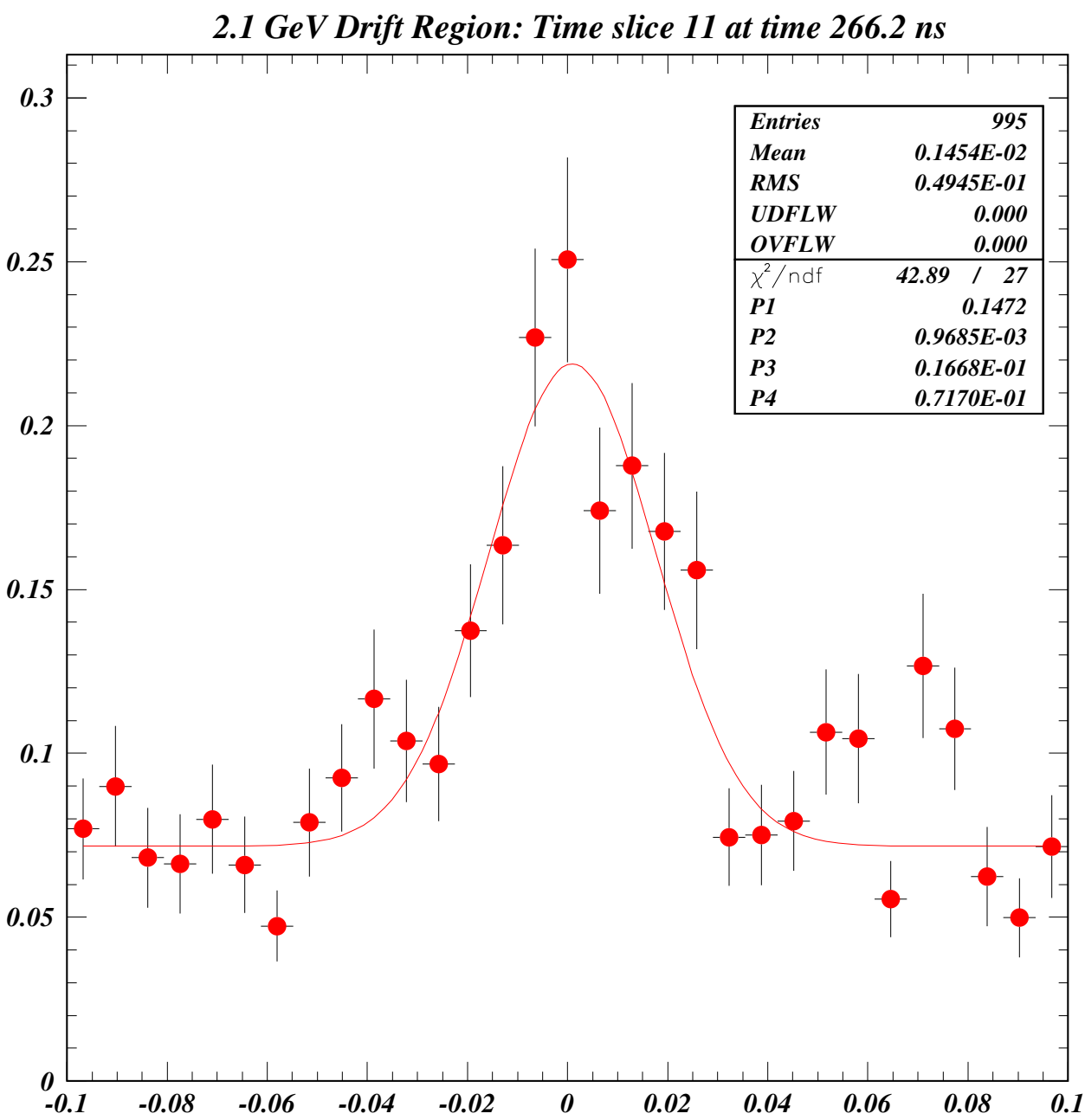
15/09/29 11.00


2.1 GeV Drift Region: Time slice 11 at time 266.2 ns
Entries 995
Mean -0.1855E-02
RMS 0.5056E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 43.98 / 27
P1 0.2501
P2 -0.4445E-02
P3 0.1061
P4 -0.1150
0.225
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

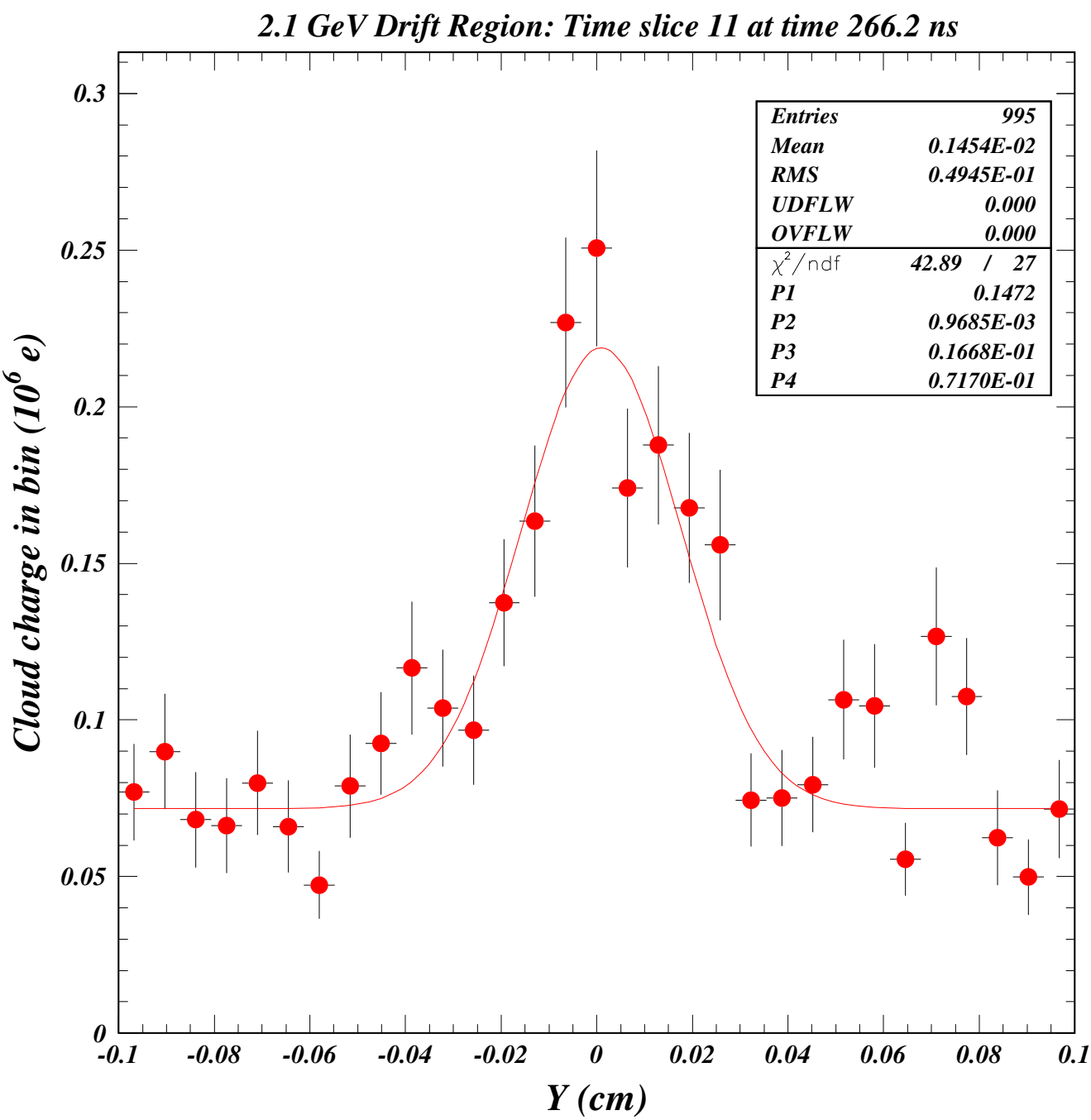
15/09/29 11.00


2.1 GeV Drift Region: Time slice 11 at time 266.2 ns
Entries 995
Mean -0.1855E-02
RMS 0.5056E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 43.98 / 27
P1 0.2501
P2 -0.4445E-02
P3 0.1061
P4 -0.1150
Cloud charge in bin (10⁶ e)
0.225
0.2
0.175
0.15
0.125
0.1
0.075
0.05
0.025
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1
X (cm)

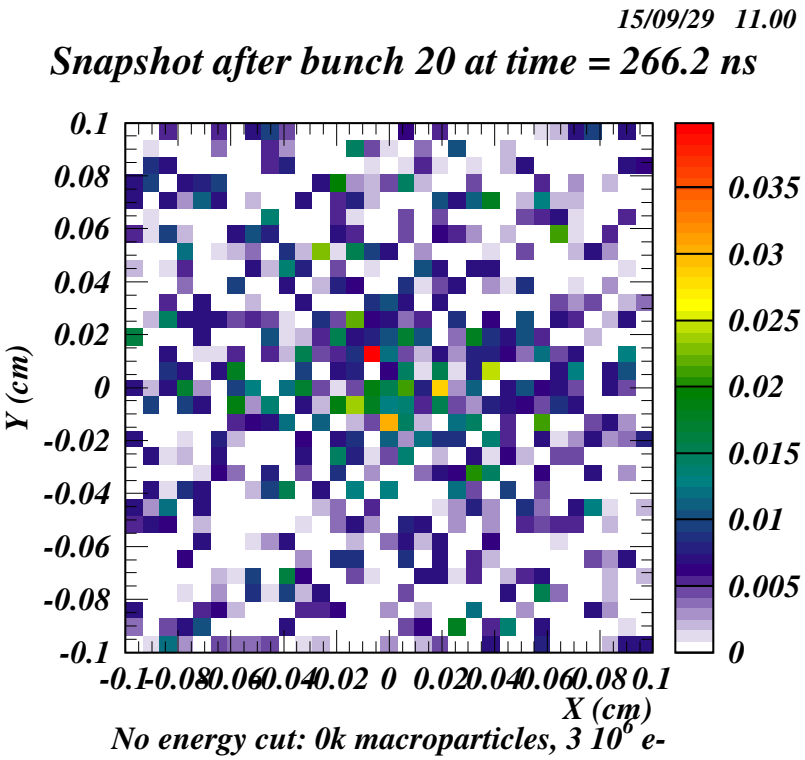
15/09/29 11.00


2.1 GeV Drift Region: Time slice 11 at time 266.2 ns
Entries 995
Mean 0.1454E-02
RMS 0.4945E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 42.89 / 27
P1 0.1472
P2 0.9685E-03
P3 0.1668E-01
P4 0.7170E-01
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

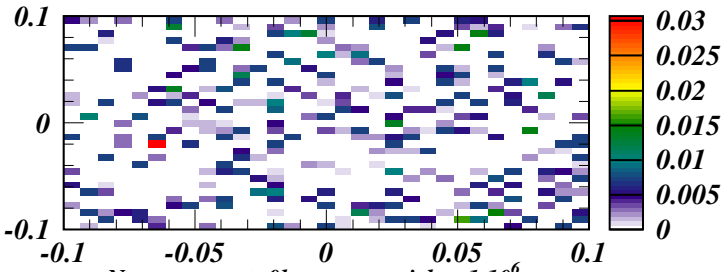
15/09/29 11.00


2.1 GeV Drift Region: Time slice 11 at time 266.2 ns
Entries 995
Mean 0.1454E-02
RMS 0.4945E-01
UDFLW 0.000
OVFLW 0.000
χ²/ndf 42.89 / 27
P1 0.1472
P2 0.9685E-03
P3 0.1668E-01
P4 0.7170E-01
Cloud charge in bin (10⁶ e)
Y (cm)
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
0.08
0.1

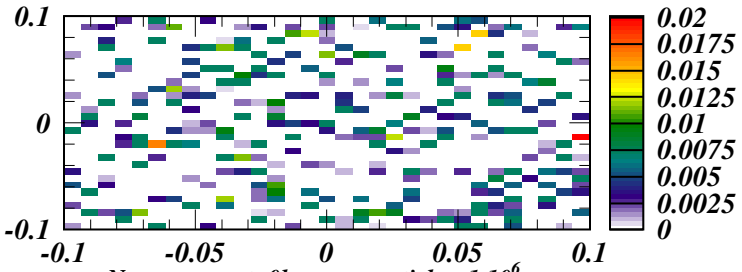
15/09/29 11.00


Snapshot after bunch 20 at time = 266.2 ns
Y (cm)
X (cm)
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
No energy cut: 0k macroparticles, 3 10^6 e-

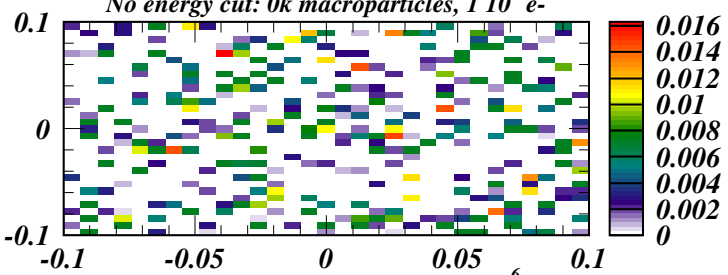
2.1 GeV Drift Region: Cloud charge shapshots



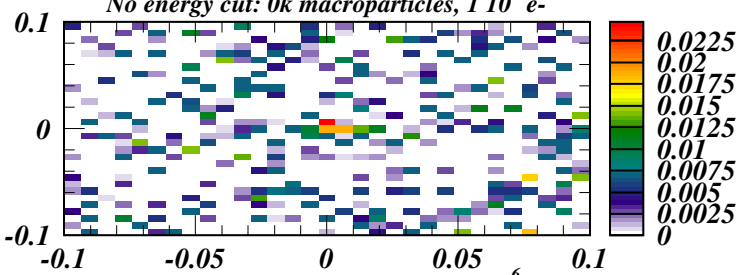
No energy cut: 0k macroparticles, 1 10^6 e-



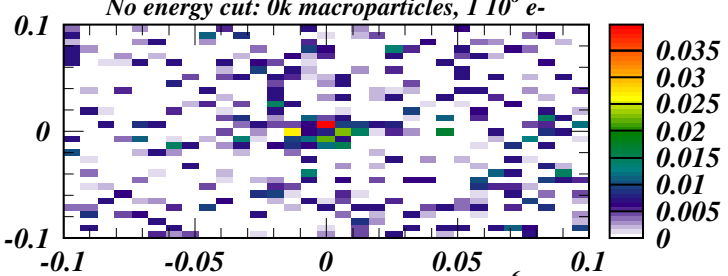
No energy cut: 0k macroparticles, 1 10^6 e-



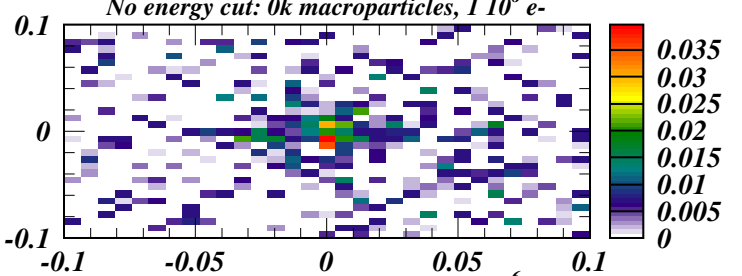
No energy cut: 0k macroparticles, 1 10^6 e-



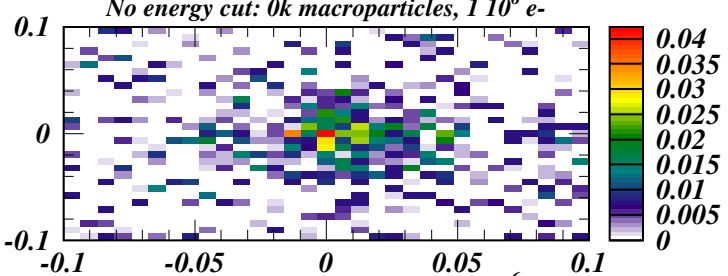
No energy cut: 0k macroparticles, 1 10^6 e-



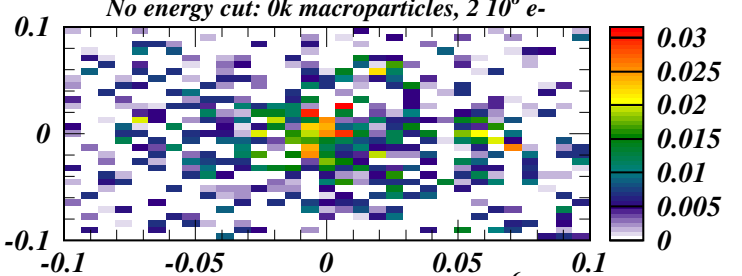
No energy cut: 0k macroparticles, 1 10^6 e-



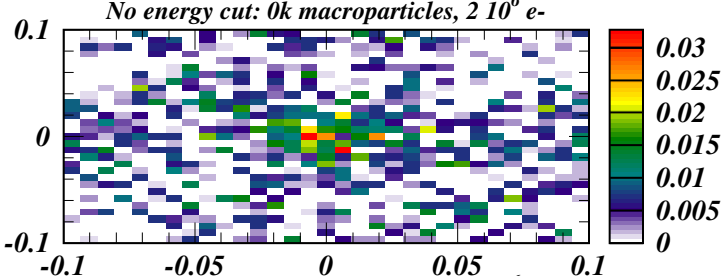
No energy cut: 0k macroparticles, 2 10^6 e-



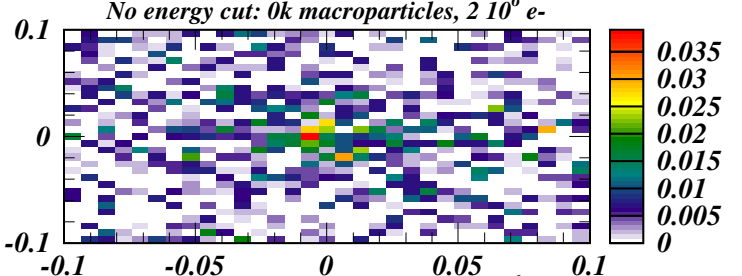
No energy cut: 0k macroparticles, 2 10^6 e-



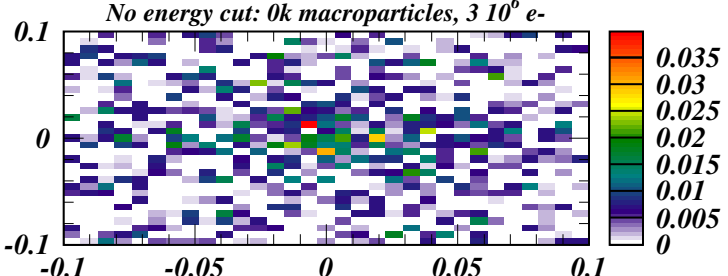
No energy cut: 0k macroparticles, 2 10^6 e-



No energy cut: 0k macroparticles, 3 10^6 e-

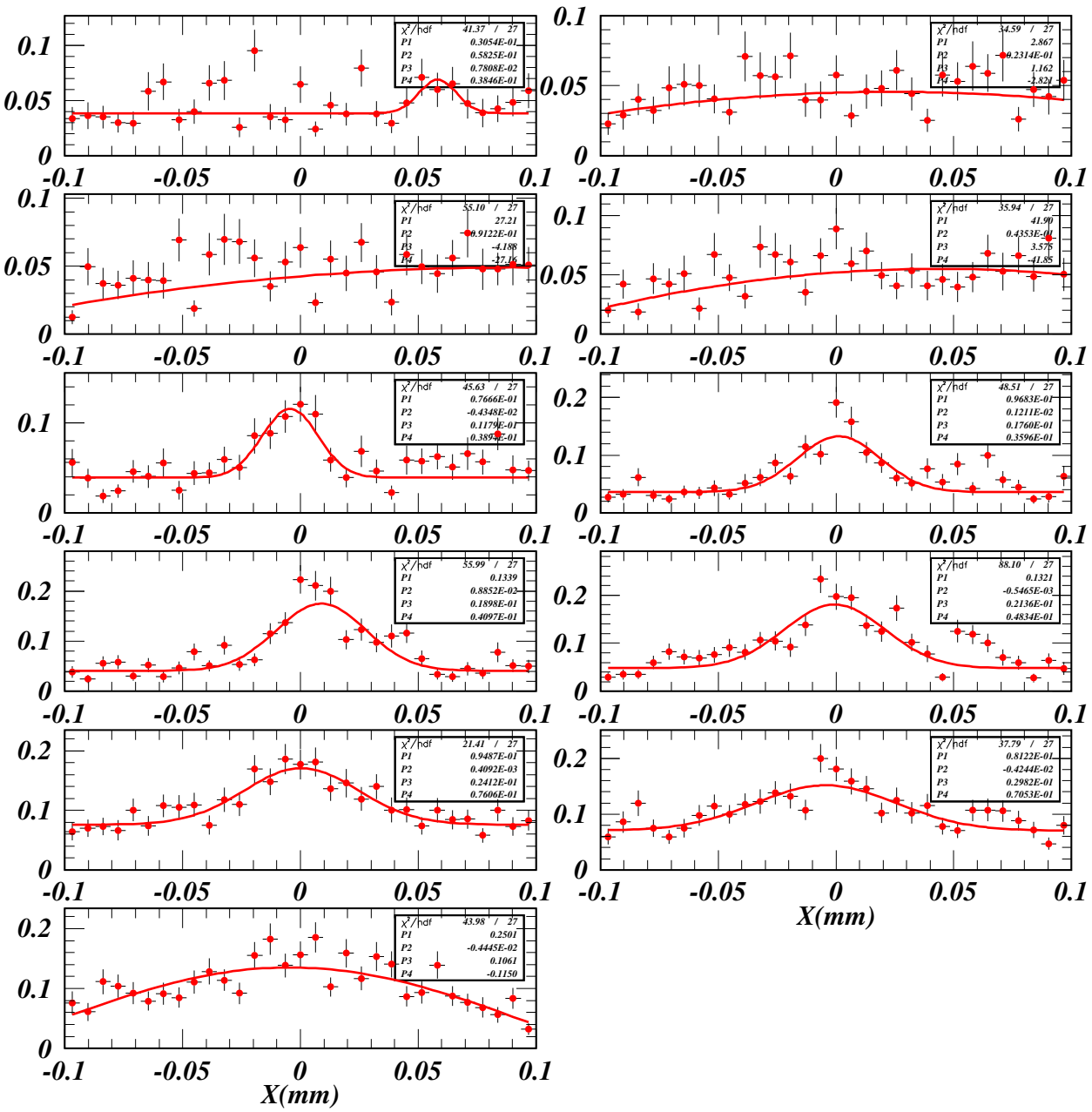


No energy cut: 0k macroparticles, 3 10^6 e-

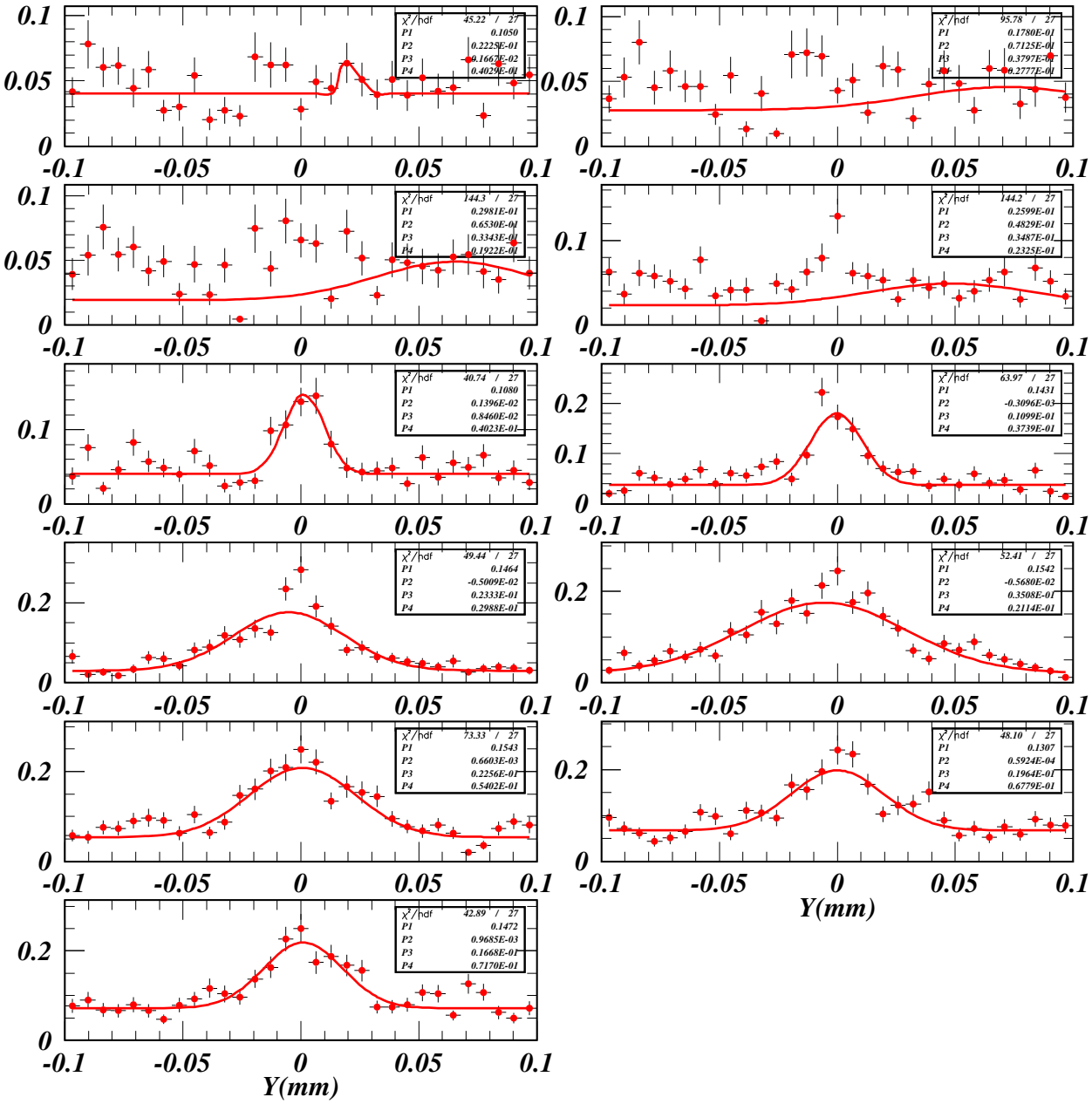


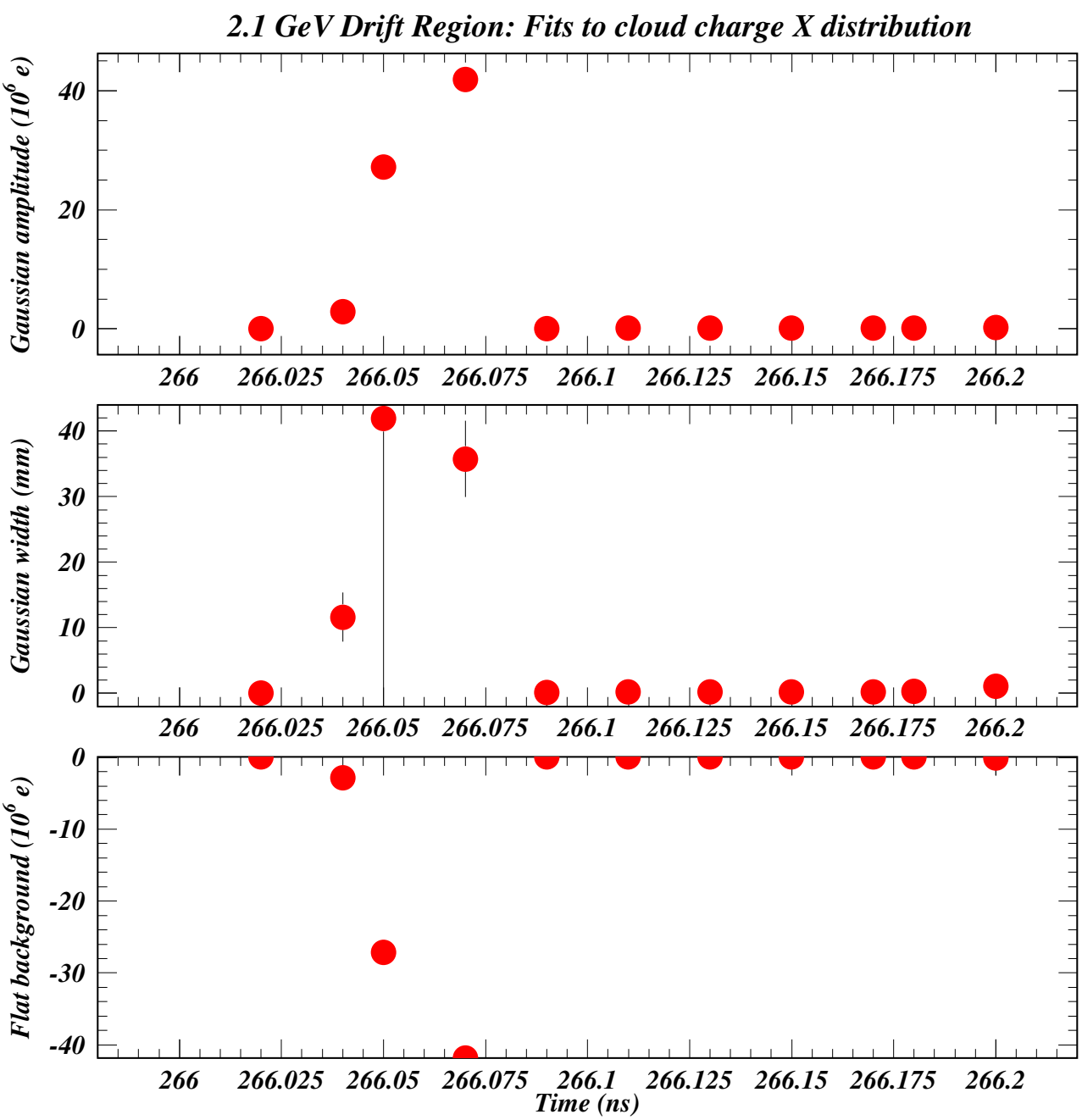
No energy cut: 0k macroparticles, 3 10^6 e-

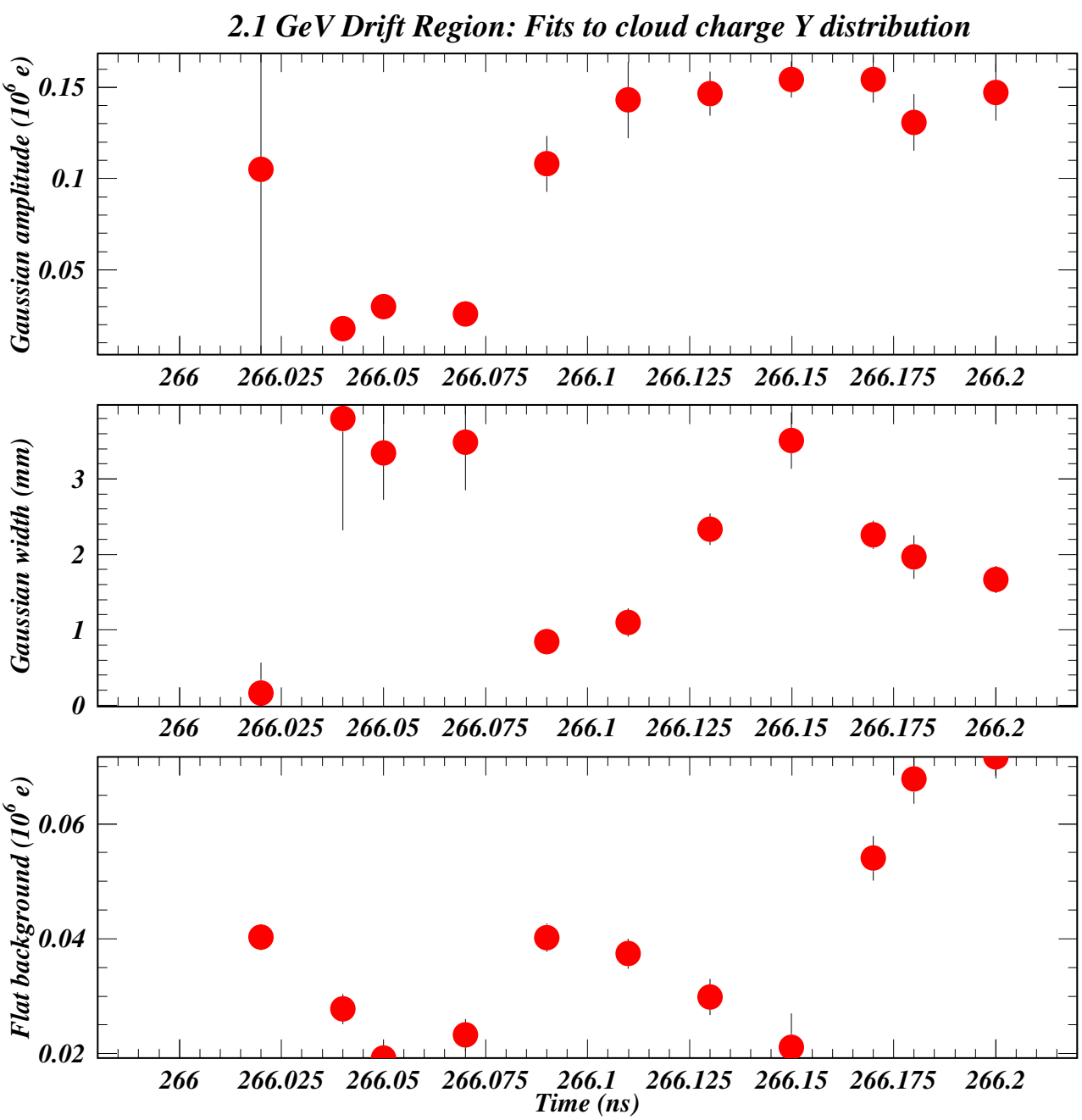
2.1 GeV Drift Region: Fits to cloud charge X distribution



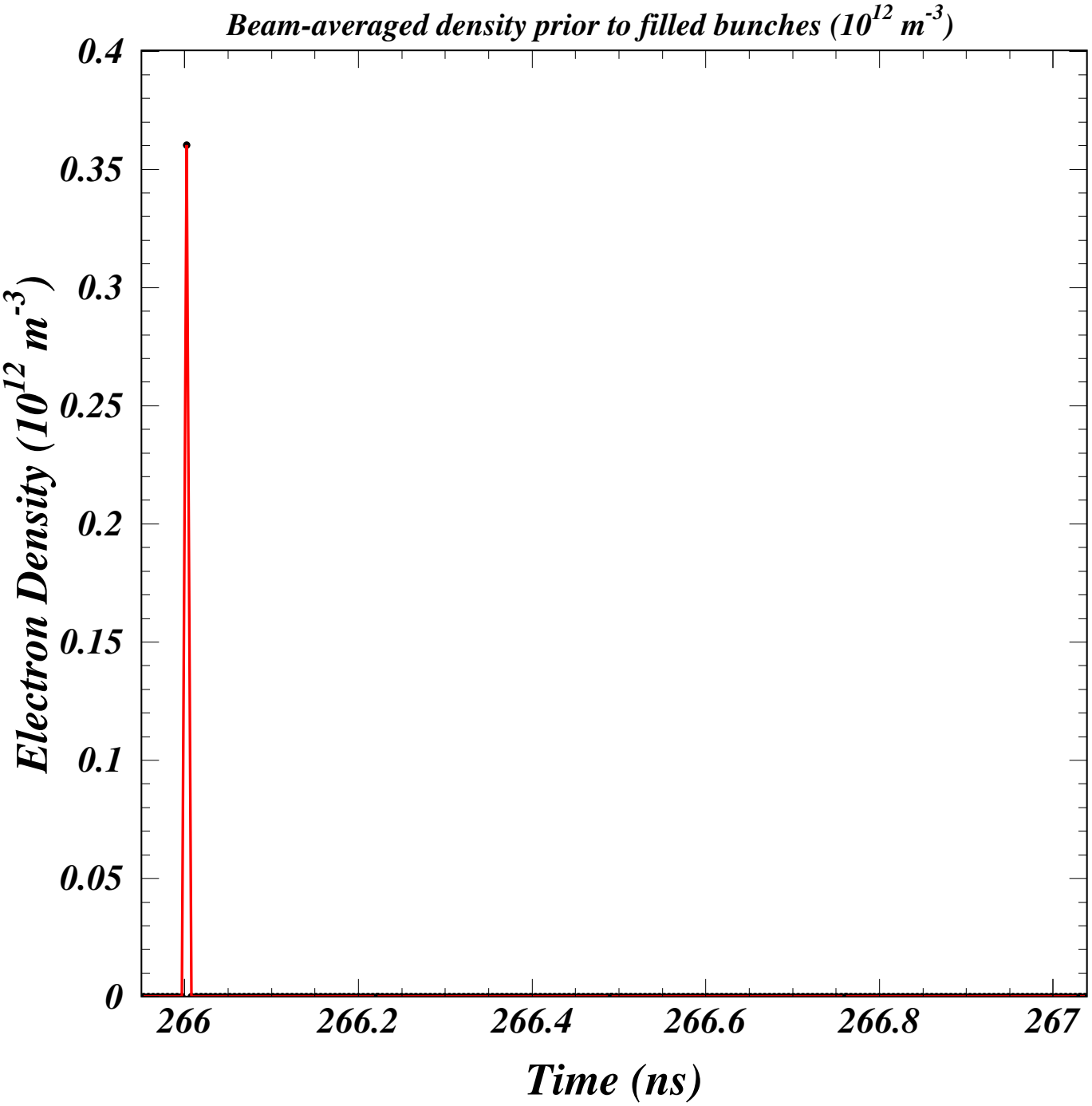
2.1 GeV Drift Region: Fits to cloud charge Y distribution



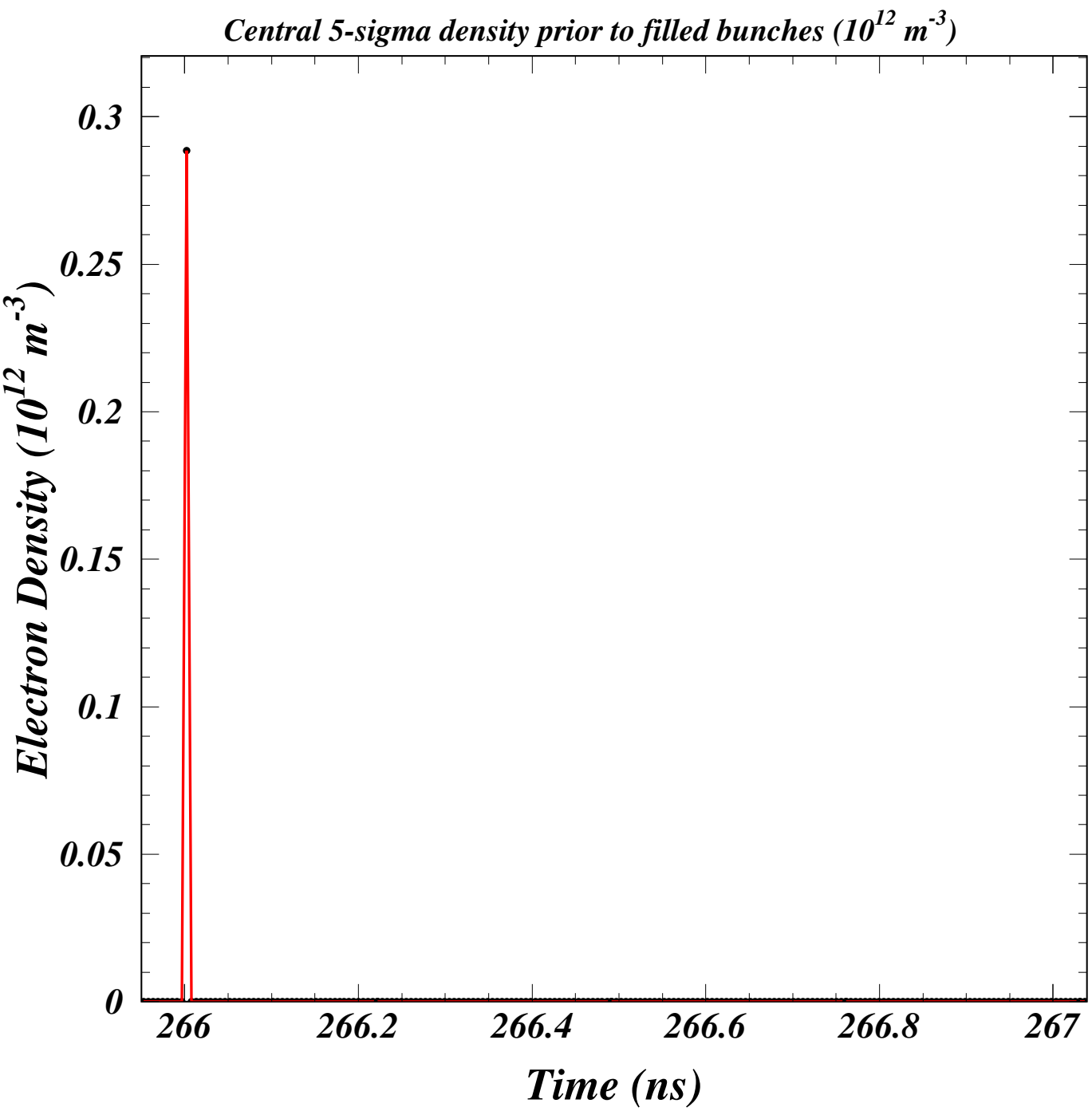

2.1 GeV Drift Region: Fits to cloud charge X distribution
Gaussian amplitude (10^6 e)
40
20
0
266
266.025
266.05
266.075
266.1
266.125
266.15
266.175
266.2
Gaussian width (mm)
40
30
20
10
0
Flat background (10^6 e)
0
-10
-20
-30
-40
Time (ns)


2.1 GeV Drift Region: Fits to cloud charge Y distribution
Gaussian amplitude (10^6 e)
0.15
0.1
0.05
Gaussian width (mm)
3
2
1
0
Flat background (10^6 e)
0.06
0.04
0.02
266
266.025
266.05
266.075
266.1
266.125
266.15
266.175
266.2
Time (ns)

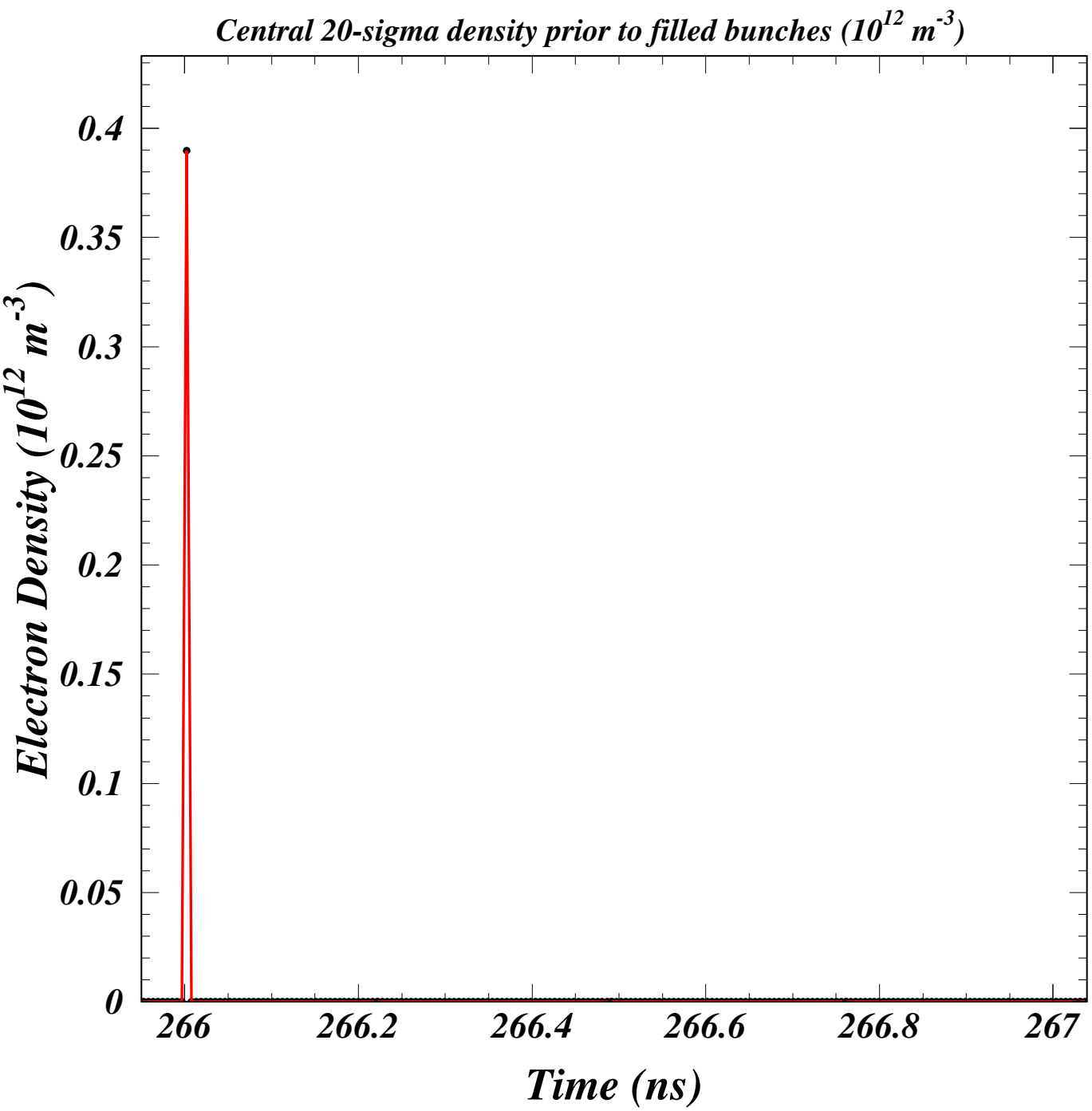
15/09/29 11.00


Beam-averaged density prior to filled bunches (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
266
266.2
266.4
266.6
266.8
267
Time (ns)

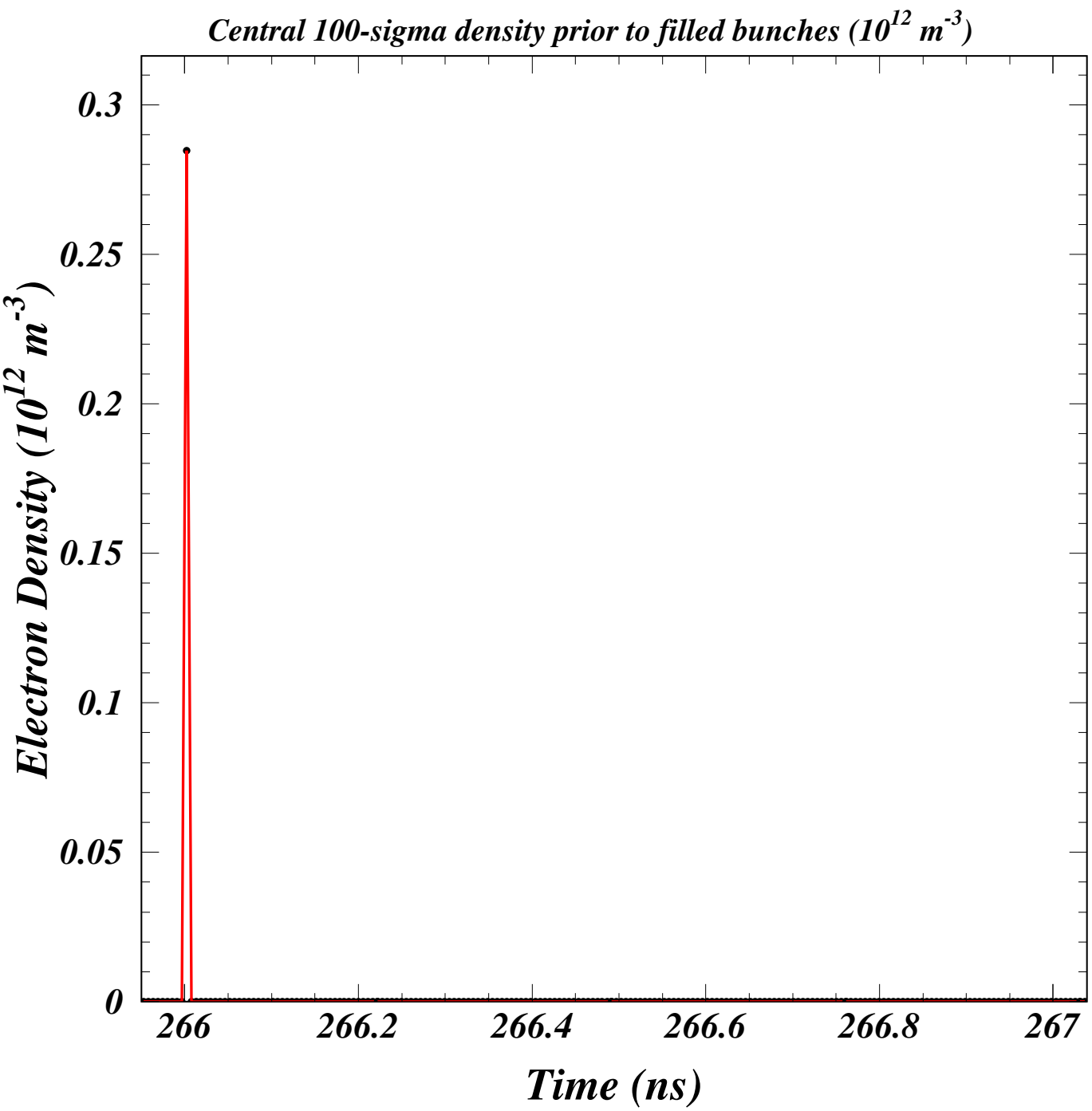
15/09/29 11.00


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
266
266.2
266.4
266.6
266.8
267
Time (ns)

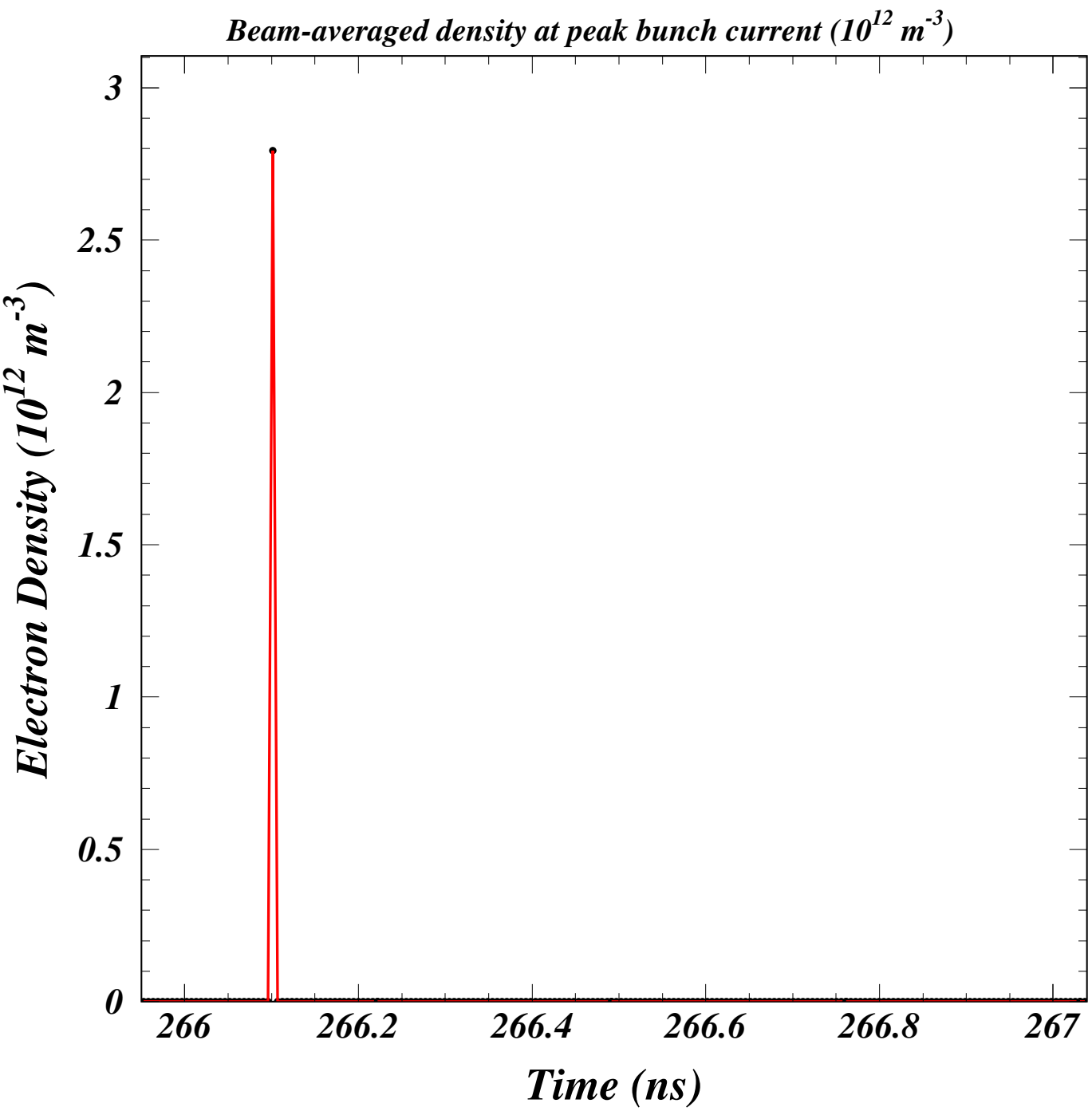
15/09/29 11.00


Central 20-sigma density prior to filled bunches (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
266
266.2
266.4
266.6
266.8
267
Time (ns)

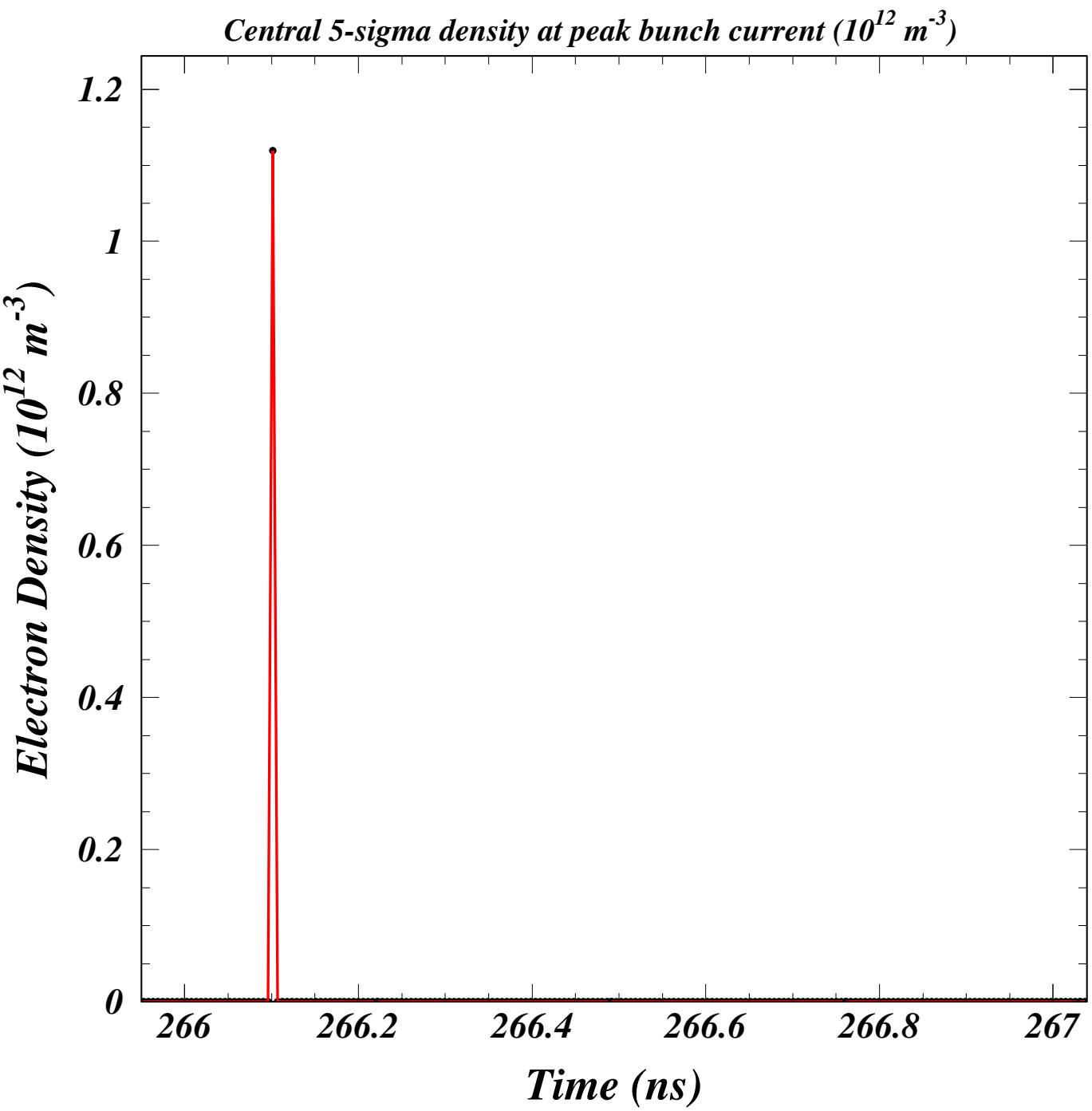
15/09/29 11.00


Central 100-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
266
266.2
266.4
266.6
266.8
267
Time (ns)

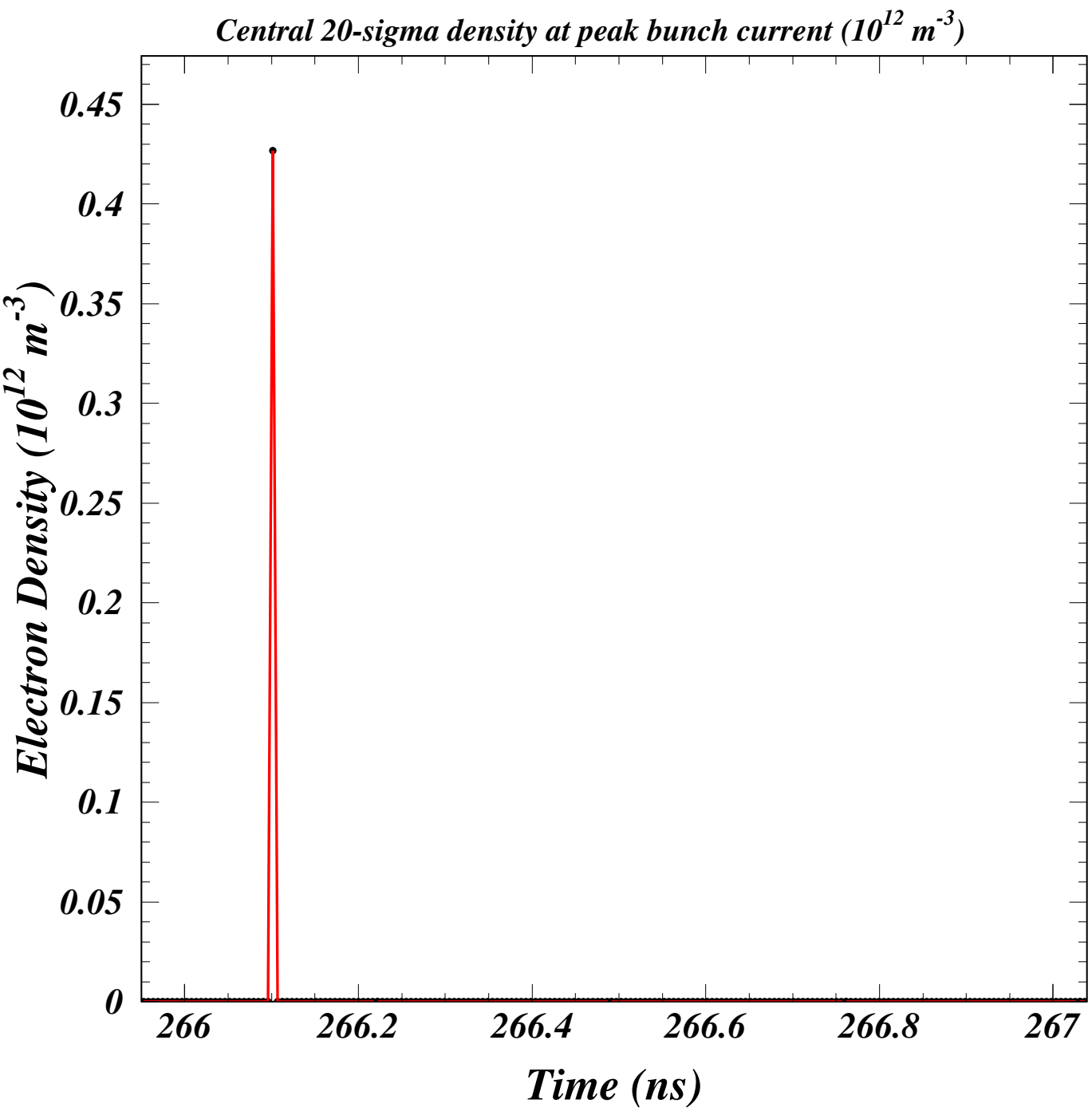
15/09/29 11.00


Beam-averaged density at peak bunch current (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
3
2.5
2
1.5
1
0.5
0
266
266.2
266.4
266.6
266.8
267
Time (ns)

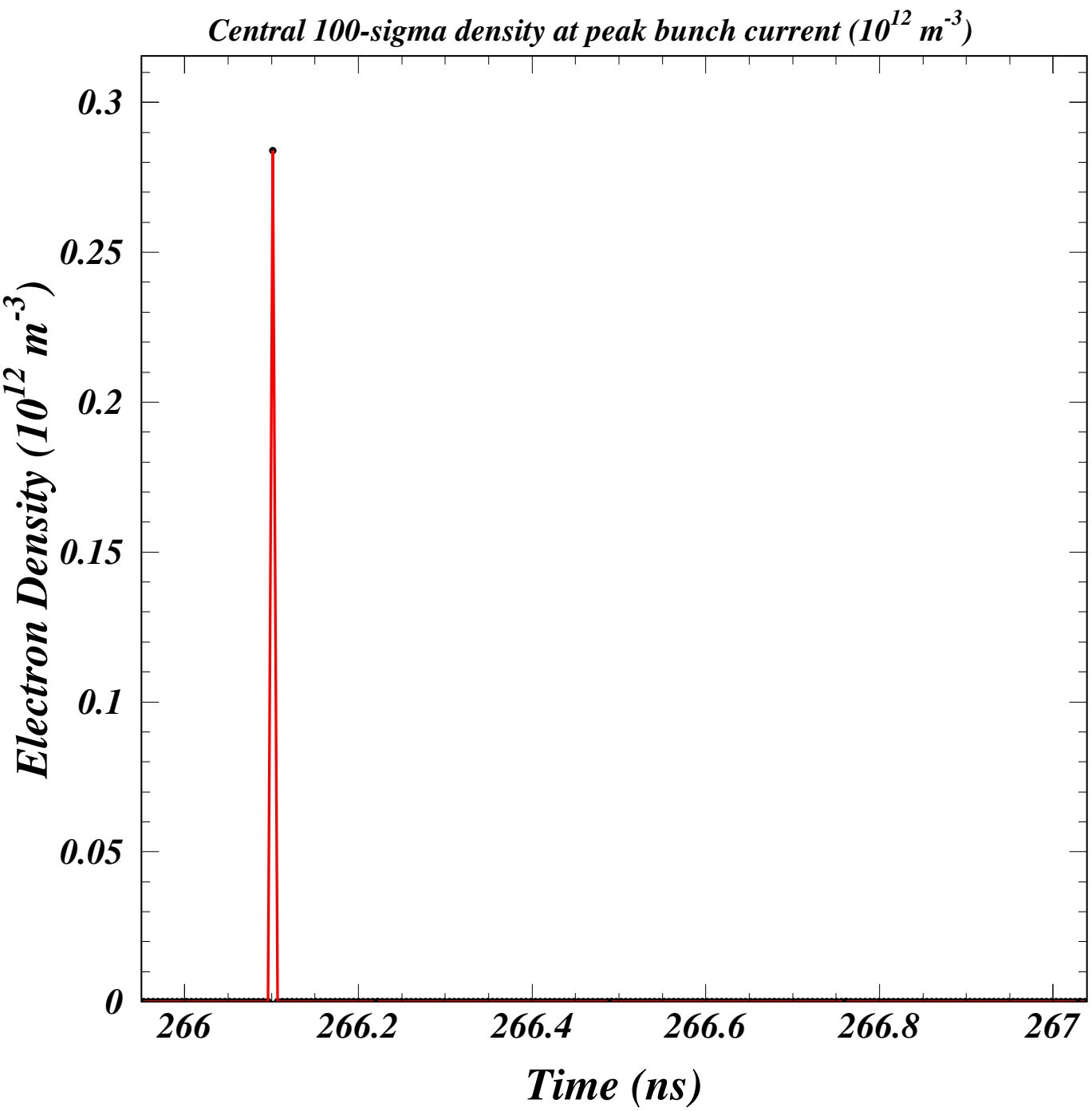
15/09/29 11.00

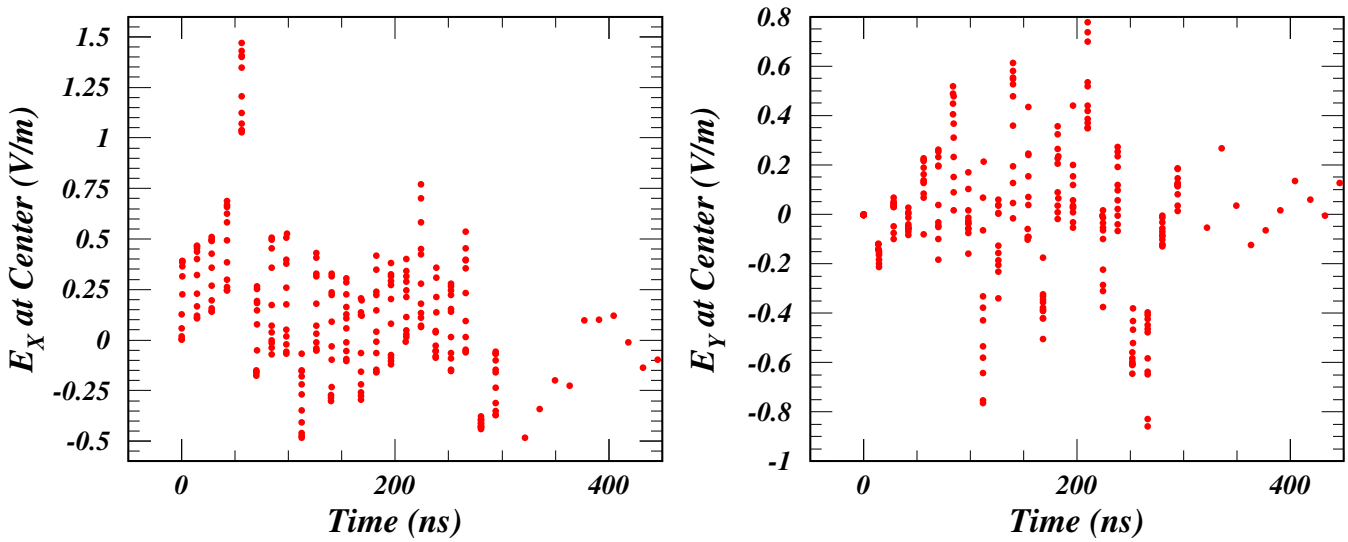

Central 5-sigma density at peak bunch current (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
1.2
1
0.8
0.6
0.4
0.2
0
266
266.2
266.4
266.6
266.8
267
Time (ns)

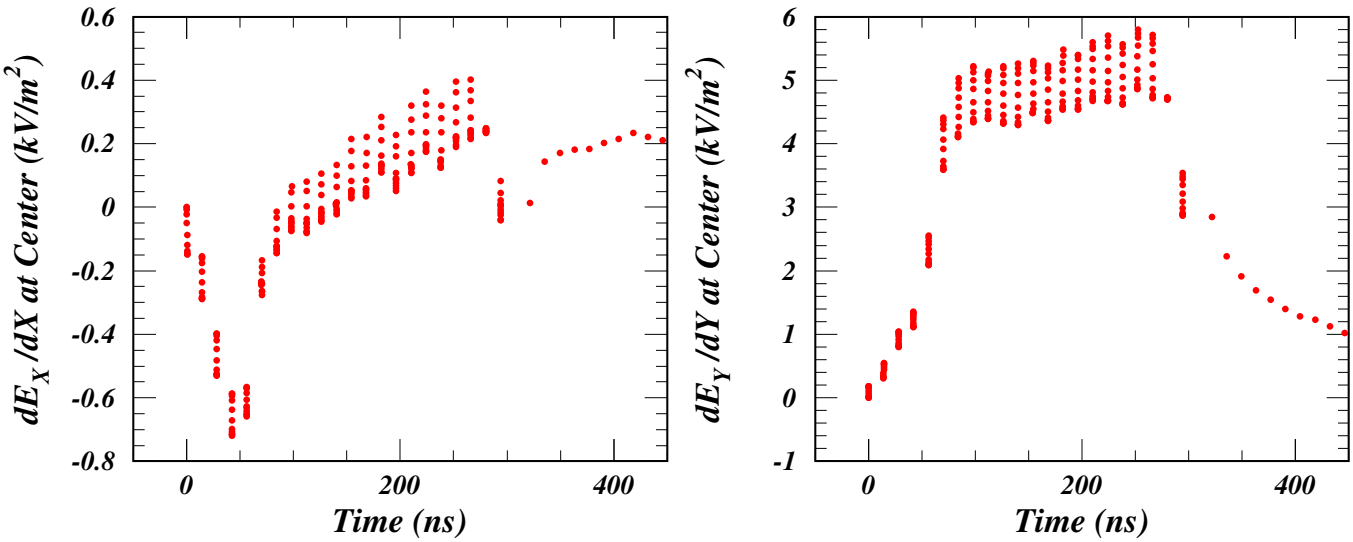
15/09/29 11.00

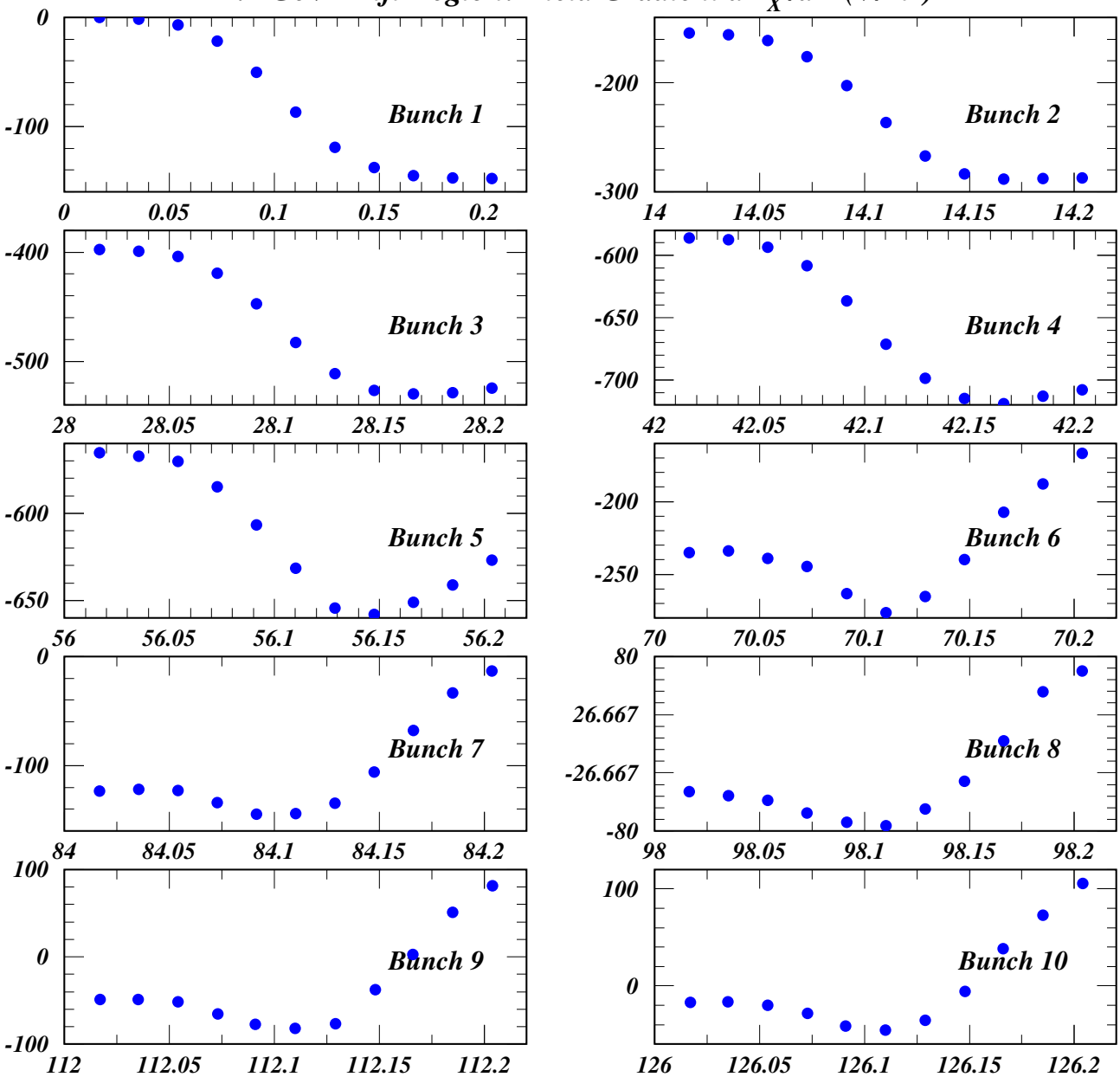

Central 20-sigma density at peak bunch current (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
266
266.2
266.4
266.6
266.8
267
Time (ns)

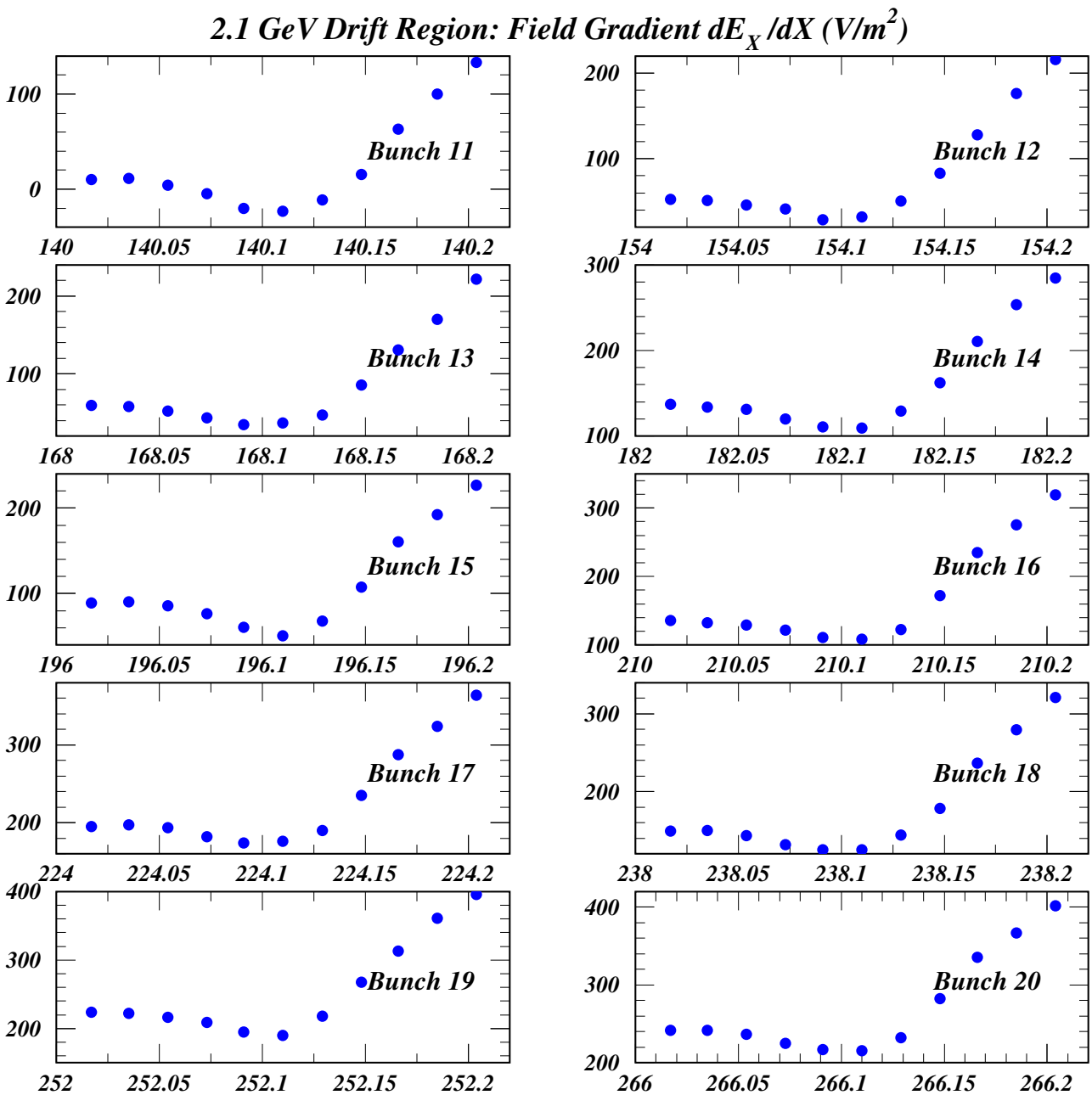
15/09/29 11.00


Central 100-sigma density at peak bunch current (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
0.3
0.25
0.2
0.15
0.1
0.05
0
266
266.2
266.4
266.6
266.8
267
Time (ns)


1.5
1.25
1
0.75
0.5
0.25
0
-0.25
-0.5
E_X at Center (V/m)
0
200
400
Time (ns)
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
E_Y at Center (V/m)
0
200
400
Time (ns)


0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
0
200
400
Time (ns)
dE_X/dX at Center (kV/m^2)
6
5
4
3
2
1
0
-1
0
200
400
Time (ns)
dE_Y/dY at Center (kV/m^2)


2.1 GeV Drift Region: 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


2.1 GeV Drift Region: Field Gradient dE_X /dX (V/m^2)
Bunch 11
Bunch 12
Bunch 13
Bunch 14
Bunch 15
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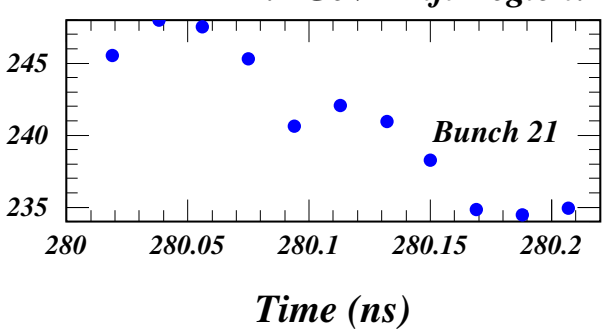
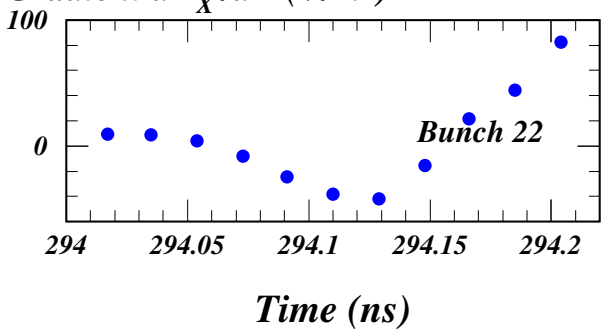
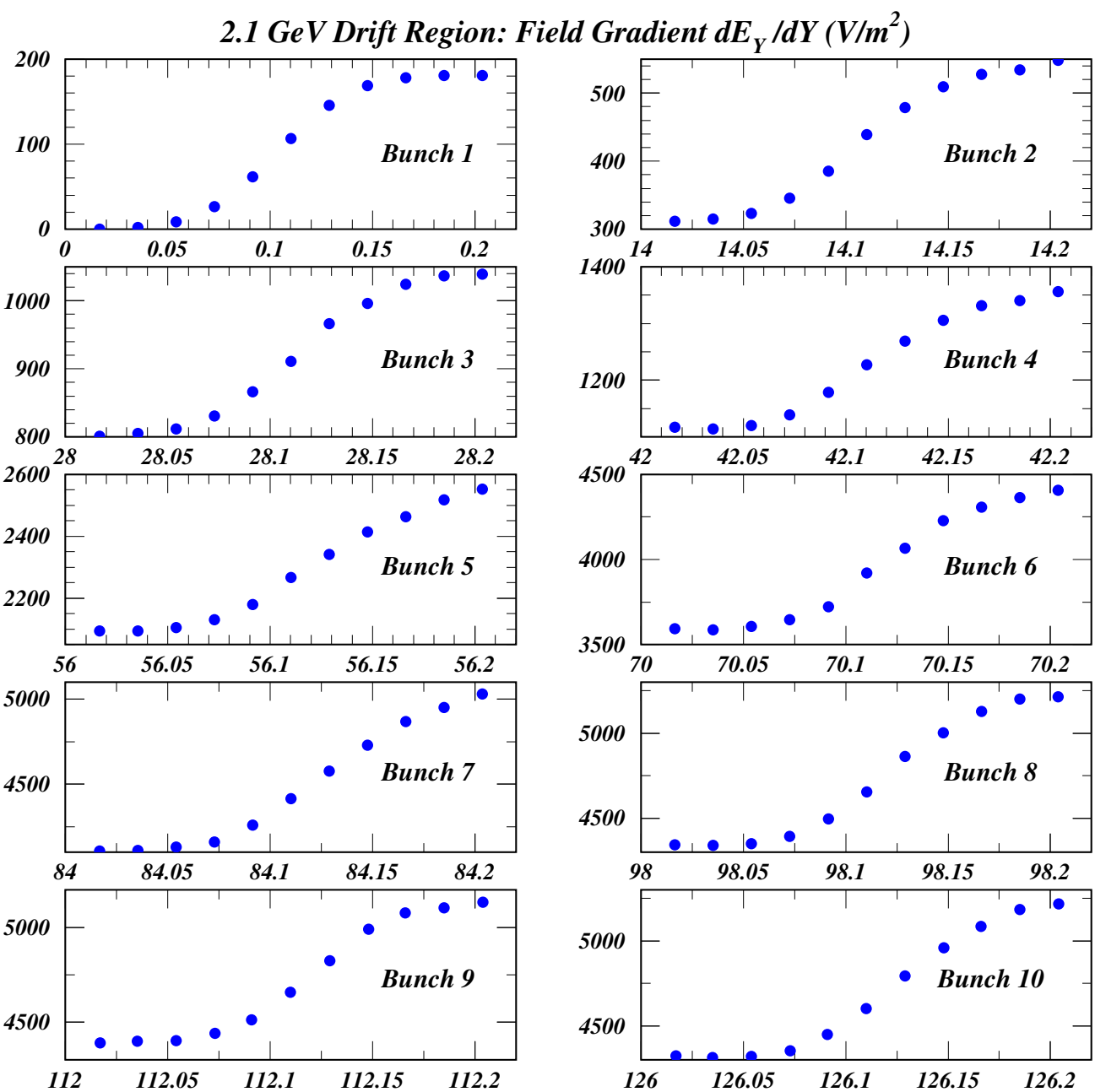
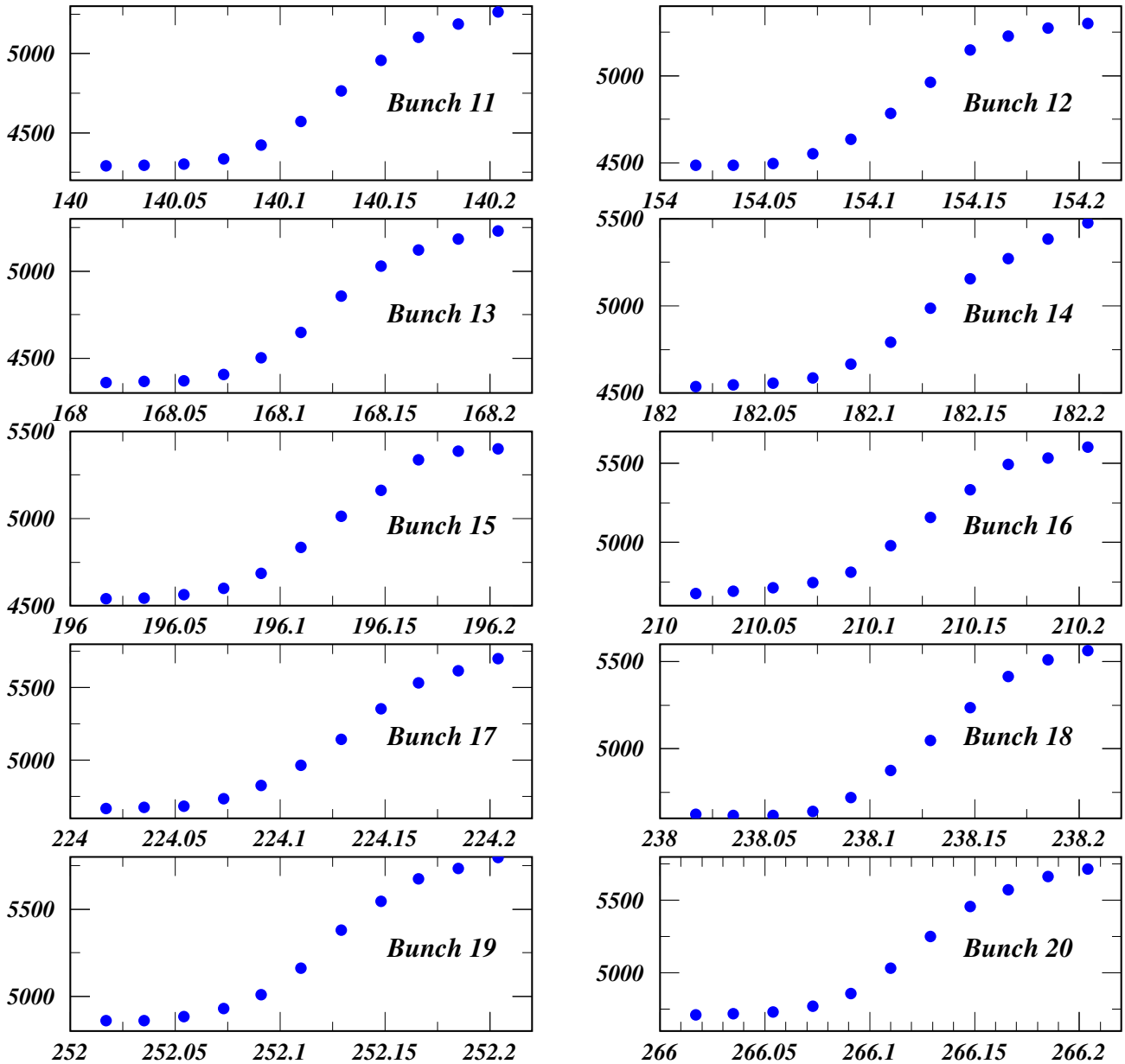
Bunch 17
Bunch 18
Bunch 19
Bunch 20

2.1 GeV Drift Region: Field Gradient dE_X/dX (V/m^2)

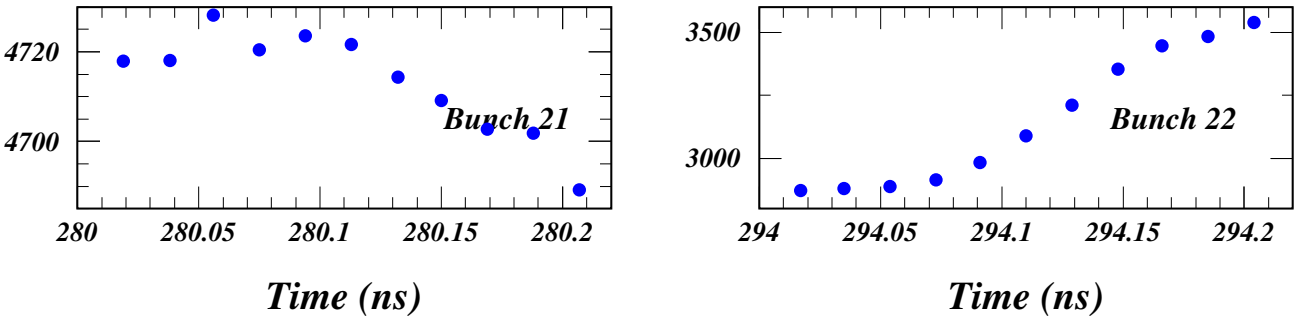


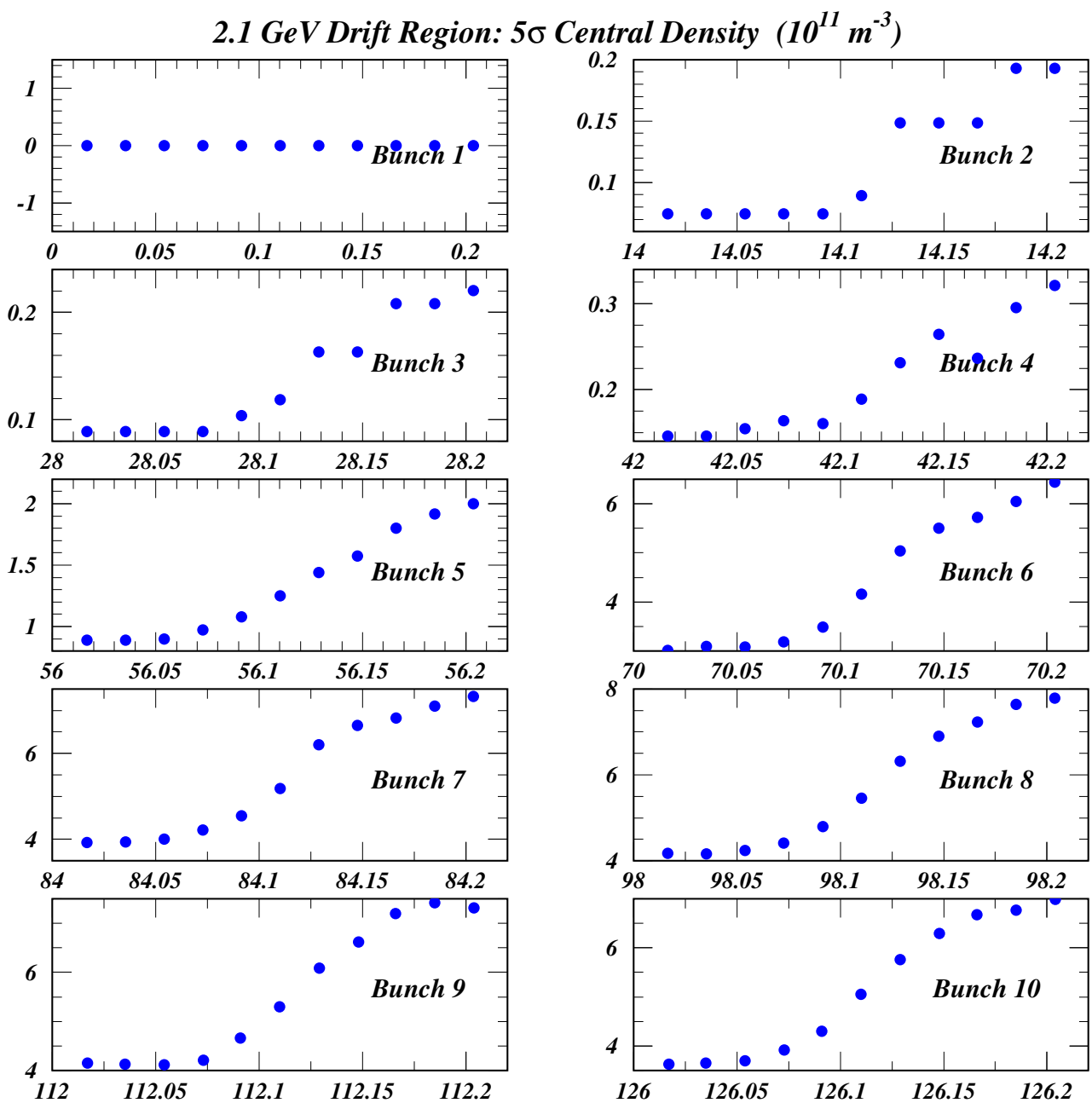



2.1 GeV Drift Region: Field Gradient dE_Y /dY (V/m^2)
Bunch 1
Bunch 2
Bunch 3
Bunch 4
Bunch 5
Bunch 6
Bunch 7
Bunch 8
Bunch 9
Bunch 10


2.1 GeV Drift Region: 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

2.1 GeV Drift Region: Field Gradient dE_Y/dY (V/m^2)




2.1 GeV Drift Region: 5σ Central Density (10^11 m^-3)
Bunch 1
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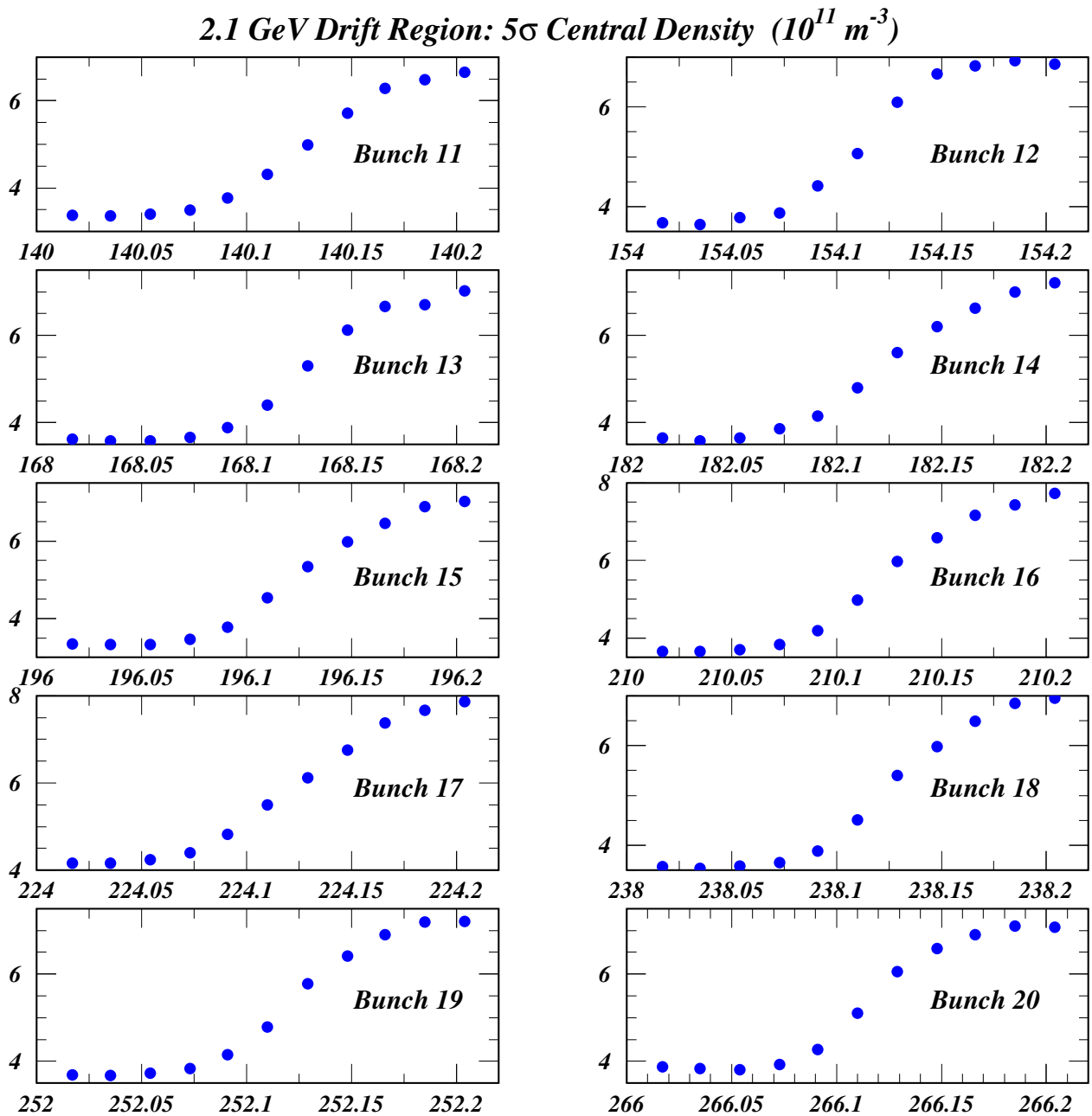
Bunch 10


2.1 GeV Drift Region: 5σ Central Density (10^11 m^-3)
Bunch 11
Bunch 12
Bunch 13
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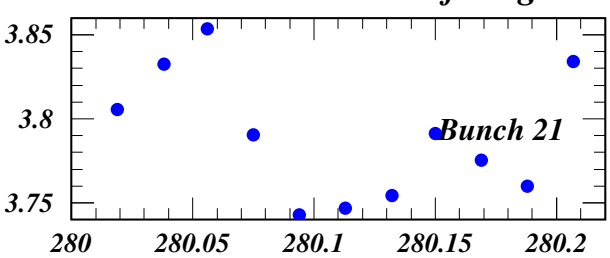
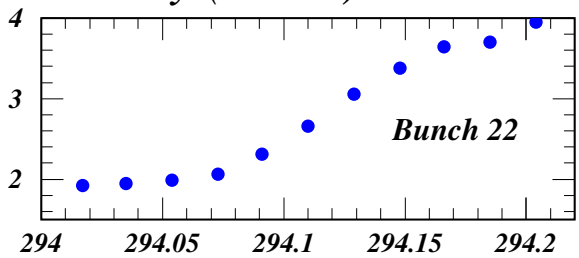
Bunch 18
Bunch 19
Bunch 20

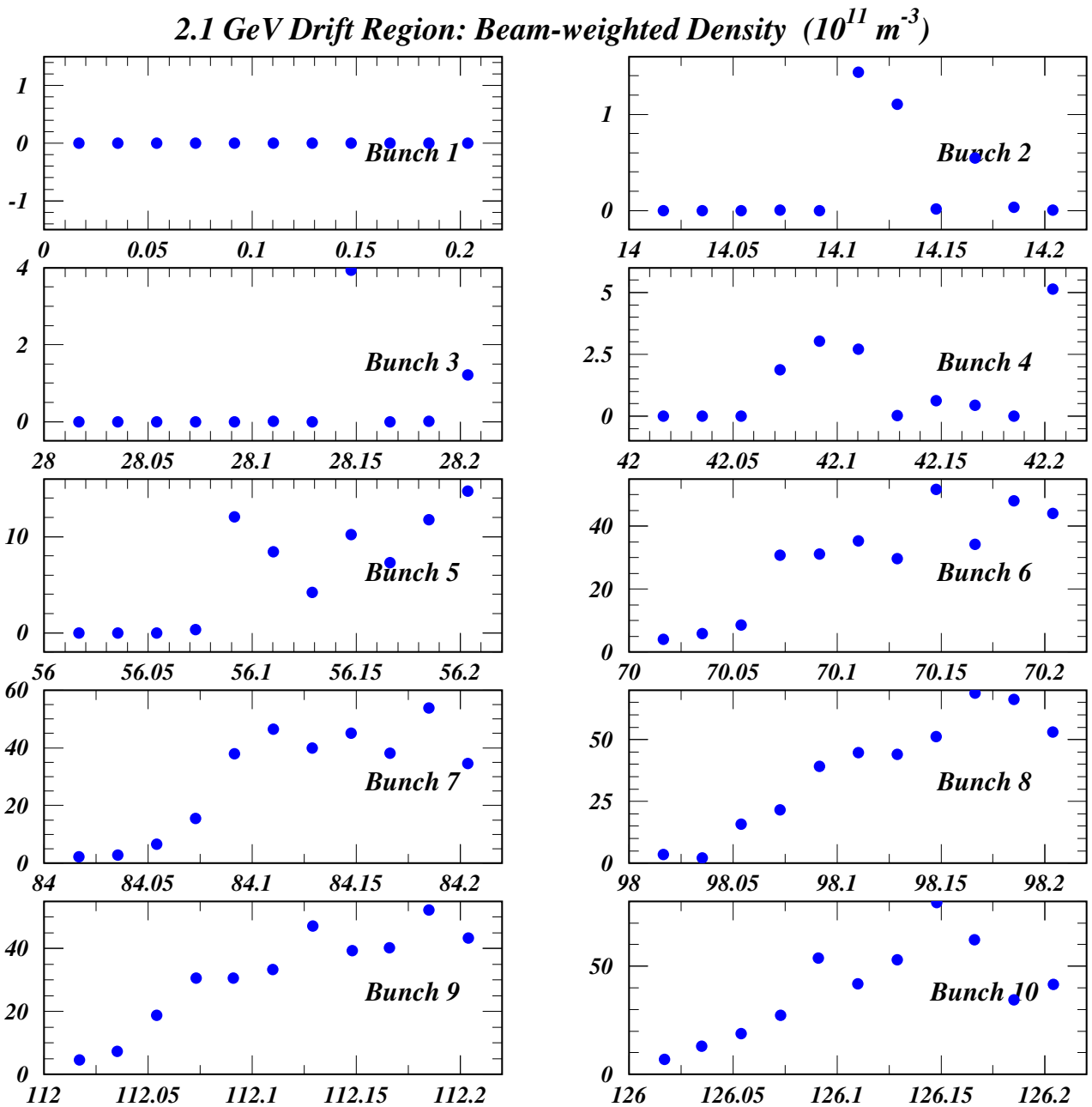
2.1 GeV Drift Region: 5σ Central Density (10^{11} m^{-3})



Time (ns)



Time (ns)


2.1 GeV Drift Region: Beam-weighted Density (10^11 m^-3)
Bunch 1
Bunch 2
Bunch 3
Bunch 4
Bunch 5
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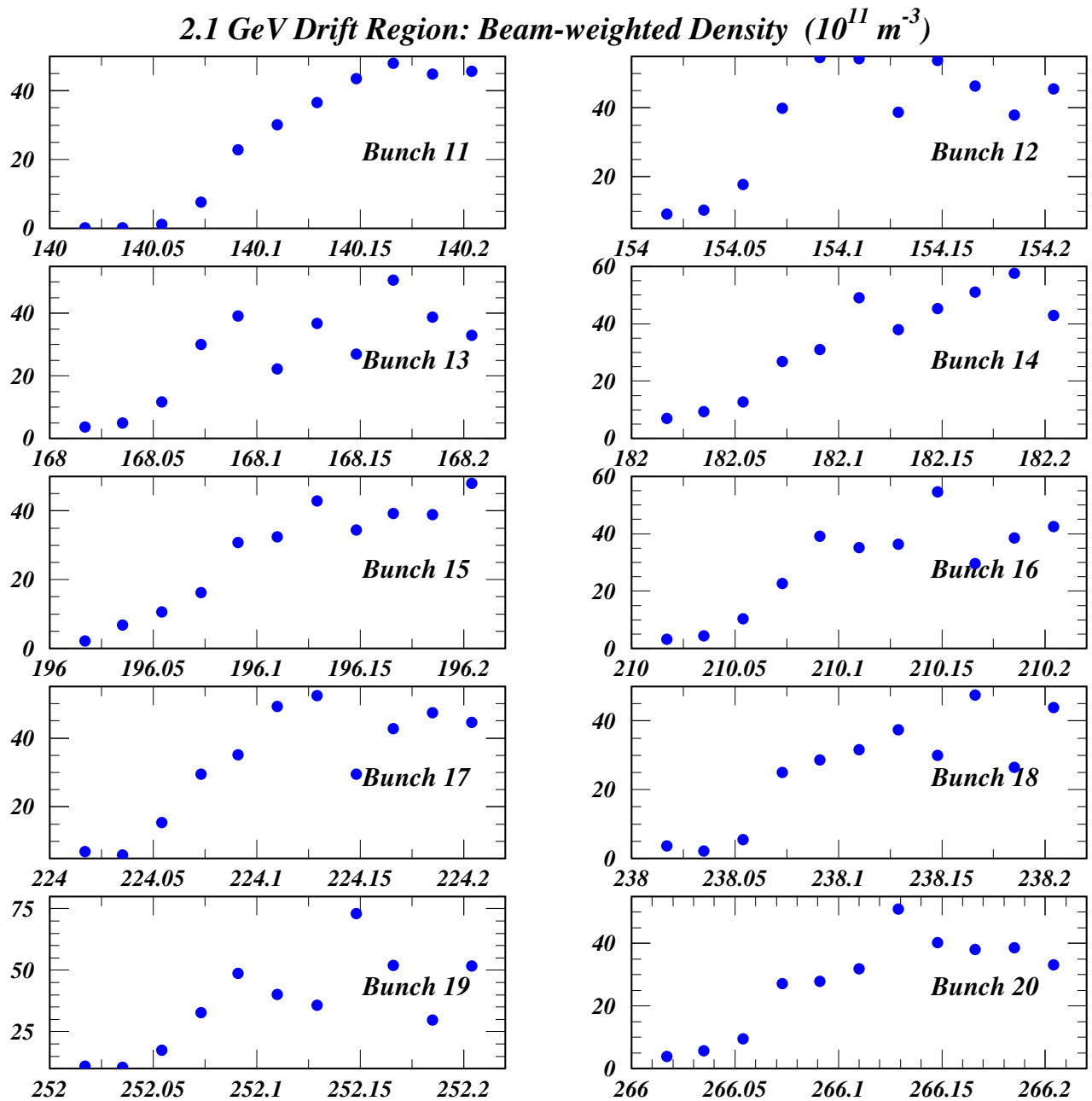
Bunch 7
Bunch 8
Bunch 9
Bunch 10


2.1 GeV Drift Region: Beam-weighted Density (10^11 m^-3)
Bunch 11
Bunch 12
Bunch 13
Bunch 14
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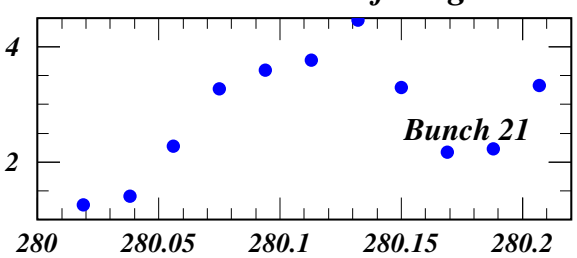
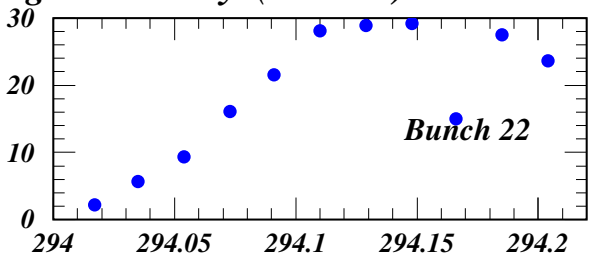
Bunch 18
Bunch 19
Bunch 20

2.1 GeV Drift Region: Beam-weighted Density (10^{11} m^{-3})



Time (ns)



Time (ns)