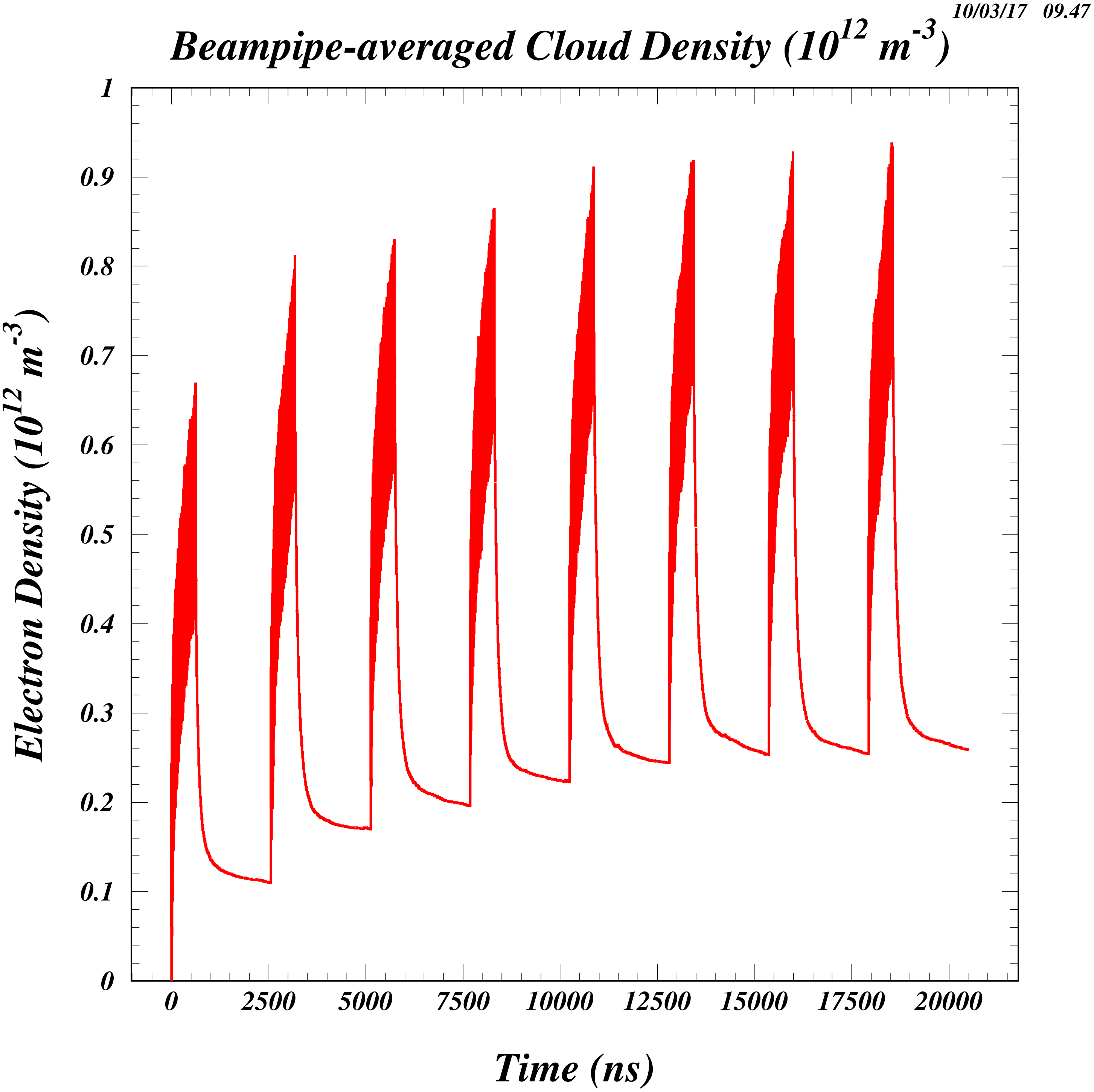
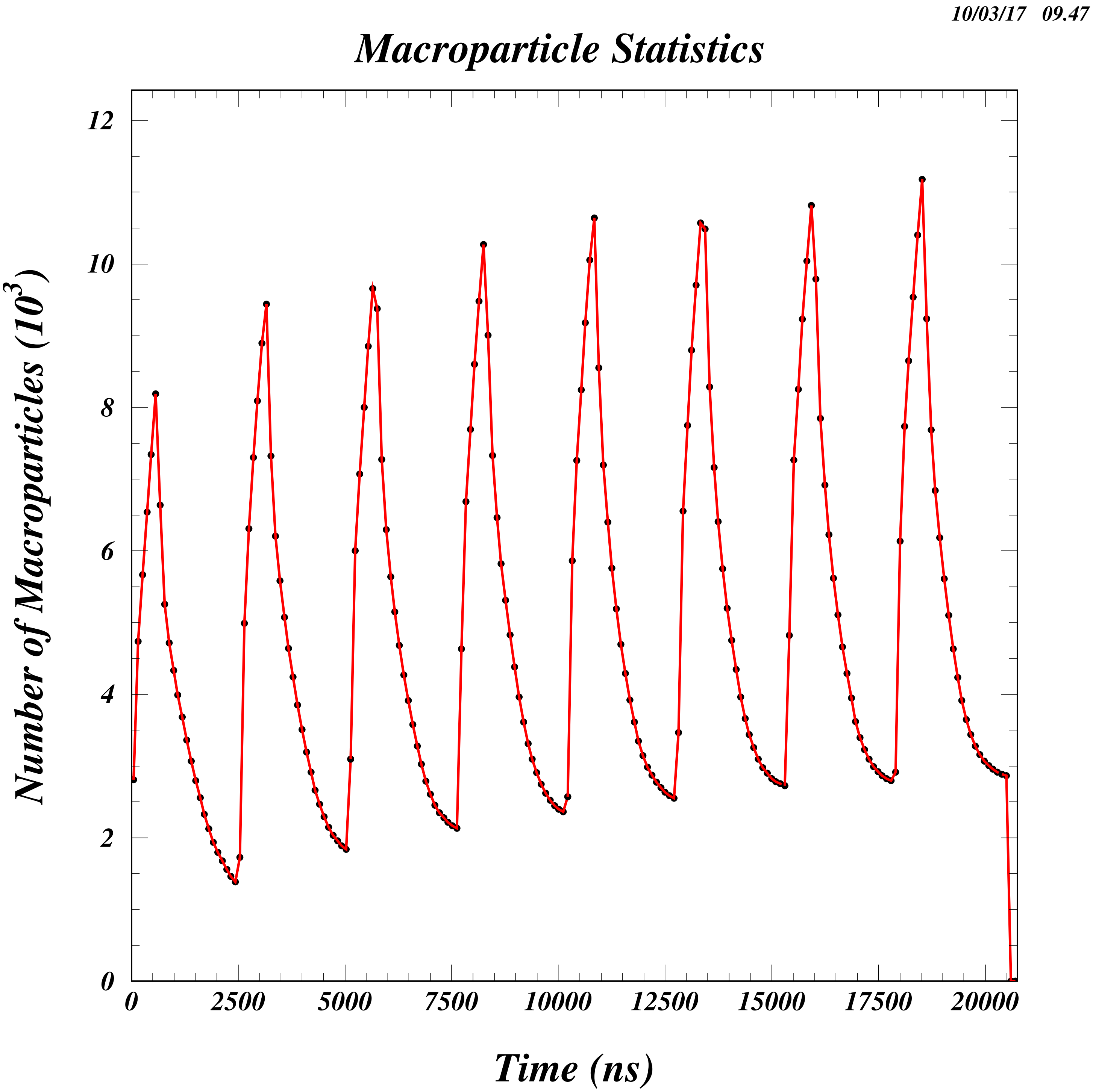
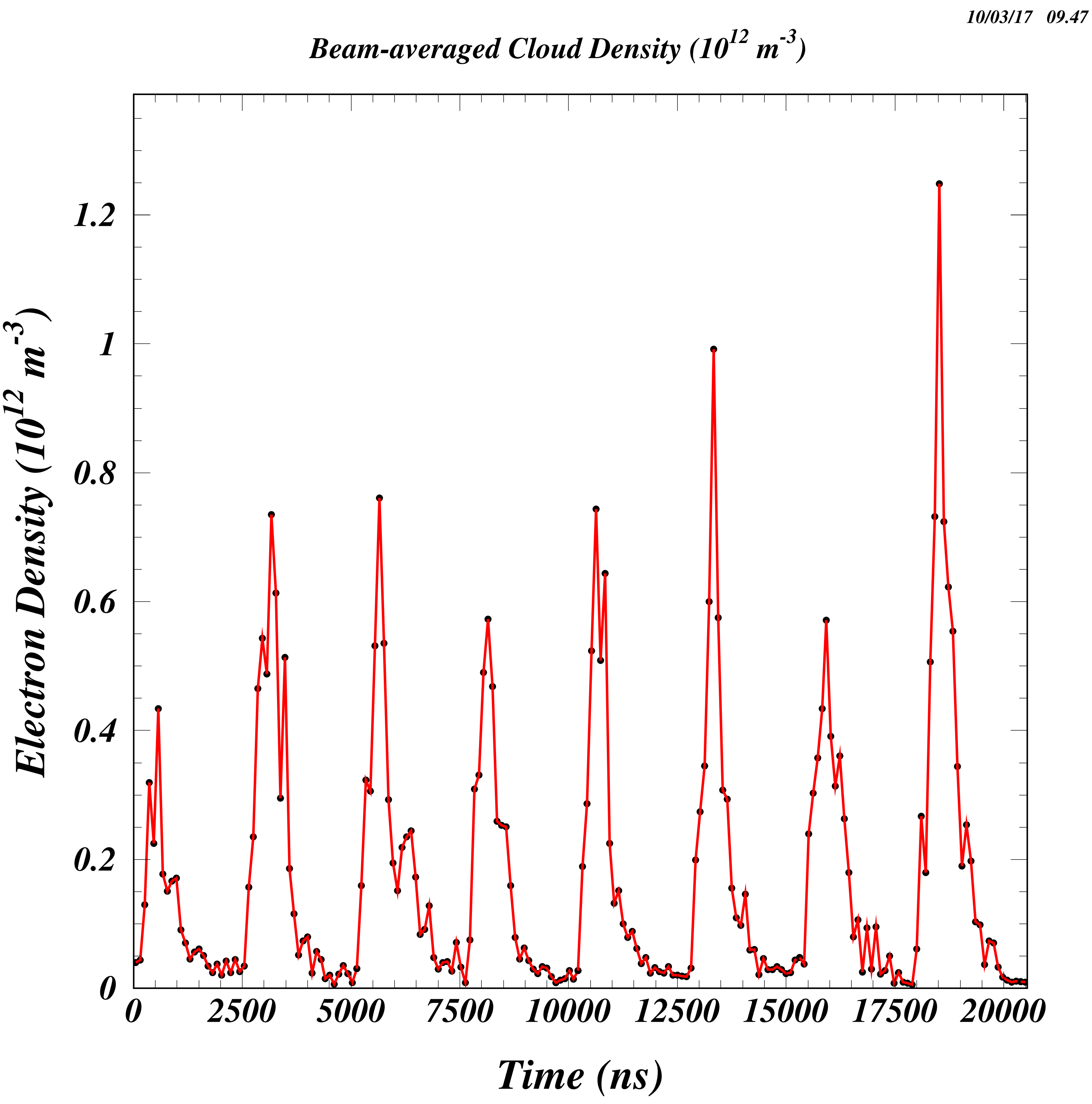
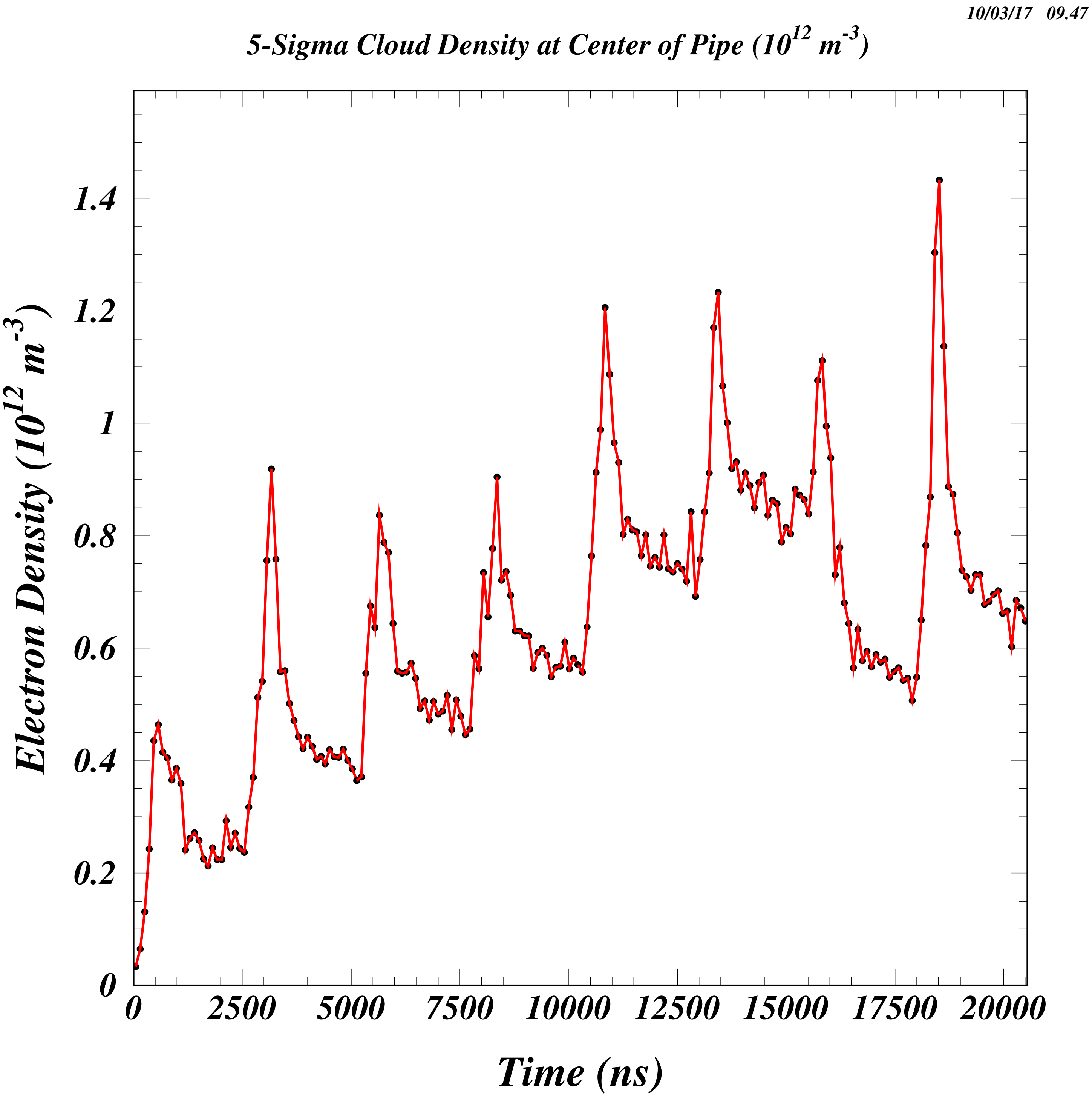


10/03/17 09.47
Beampipe-averaged Cloud Density (10^12 m^-3)
Electron Density (10^12 m^-3)
Time (ns)
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0
2500
5000
7500
10000
12500
15000
17500
20000

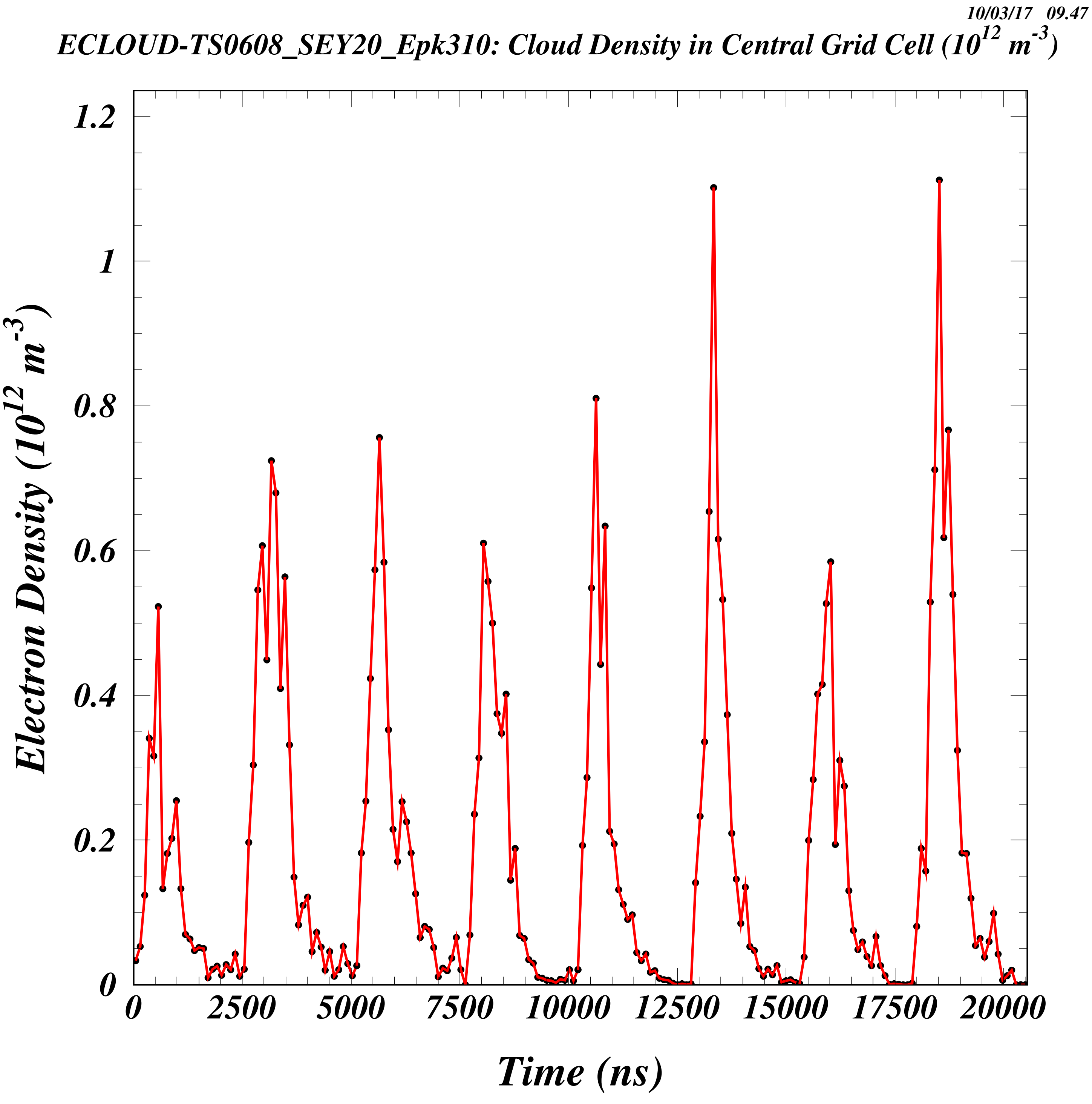


10/03/17 09.47
Macroparticle Statistics
Number of Macroparticles (10^3)
Time (ns)
0
2
4
6
8
10
12
0
2500
5000
7500
10000
12500
15000
17500
20000


10/03/17 09.47
Beam-averaged Cloud Density (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
0
0.2
0.4
0.6
0.8
1
1.2
0
2500
5000
7500
10000
12500
15000
17500
20000
Time (ns)

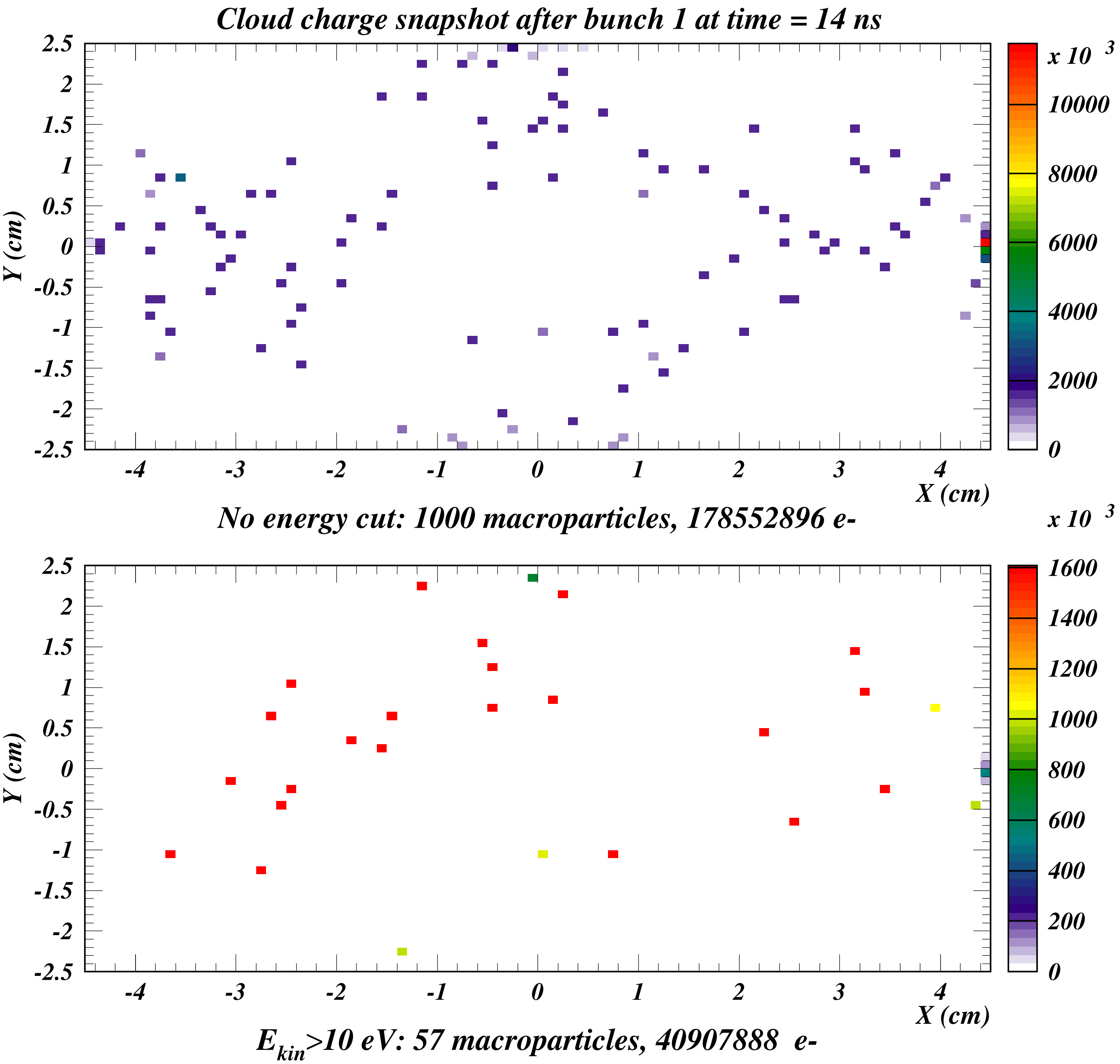


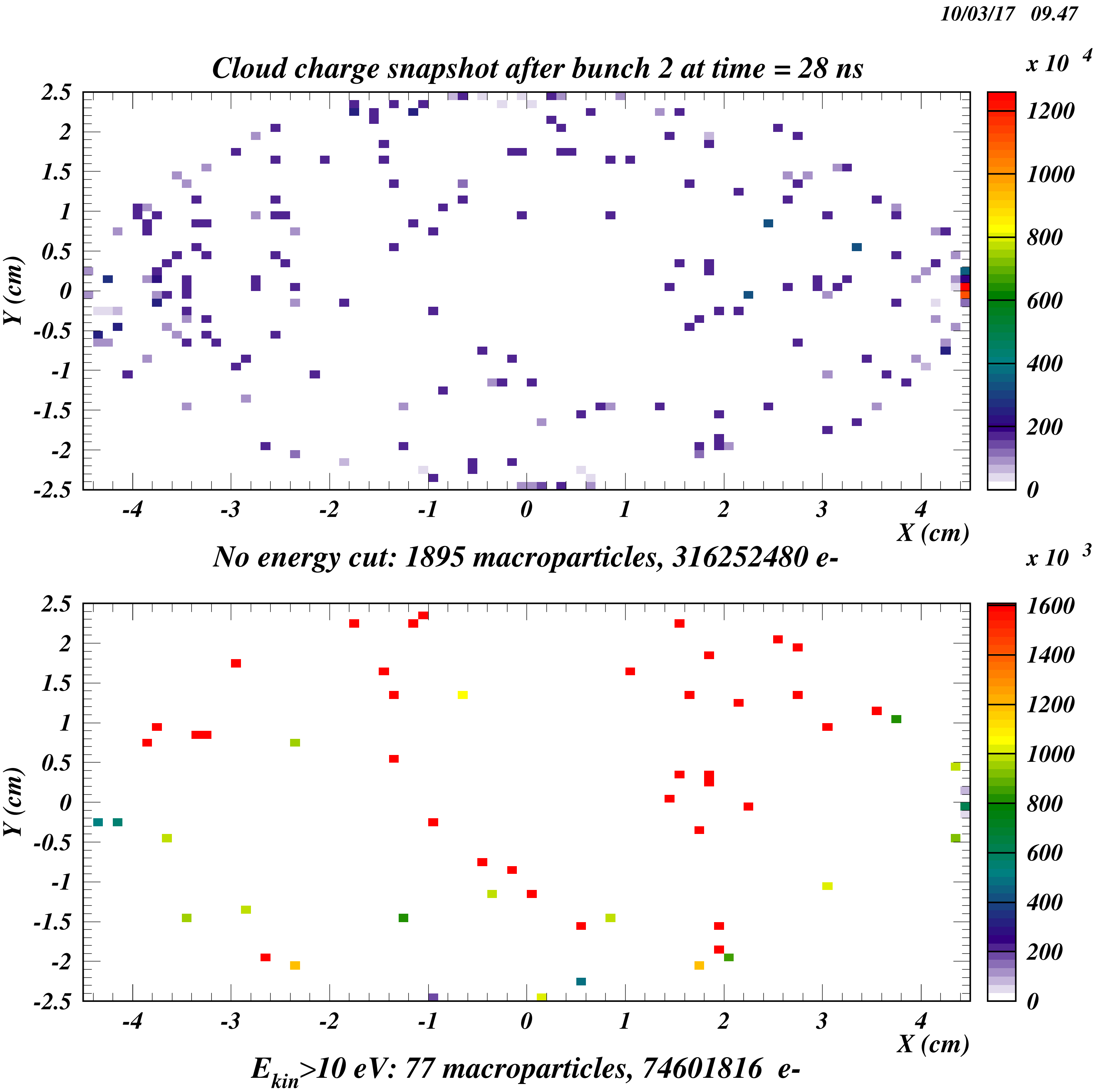
10/03/17 09.47
5-Sigma Cloud Density at Center of Pipe (10^{12} m^{-3})
Electron Density (10^{12} m^{-3})
0
0.2
0.4
0.6
0.8
1
1.2
1.4
0
2500
5000
7500
10000
12500
15000
17500
20000
Time (ns)



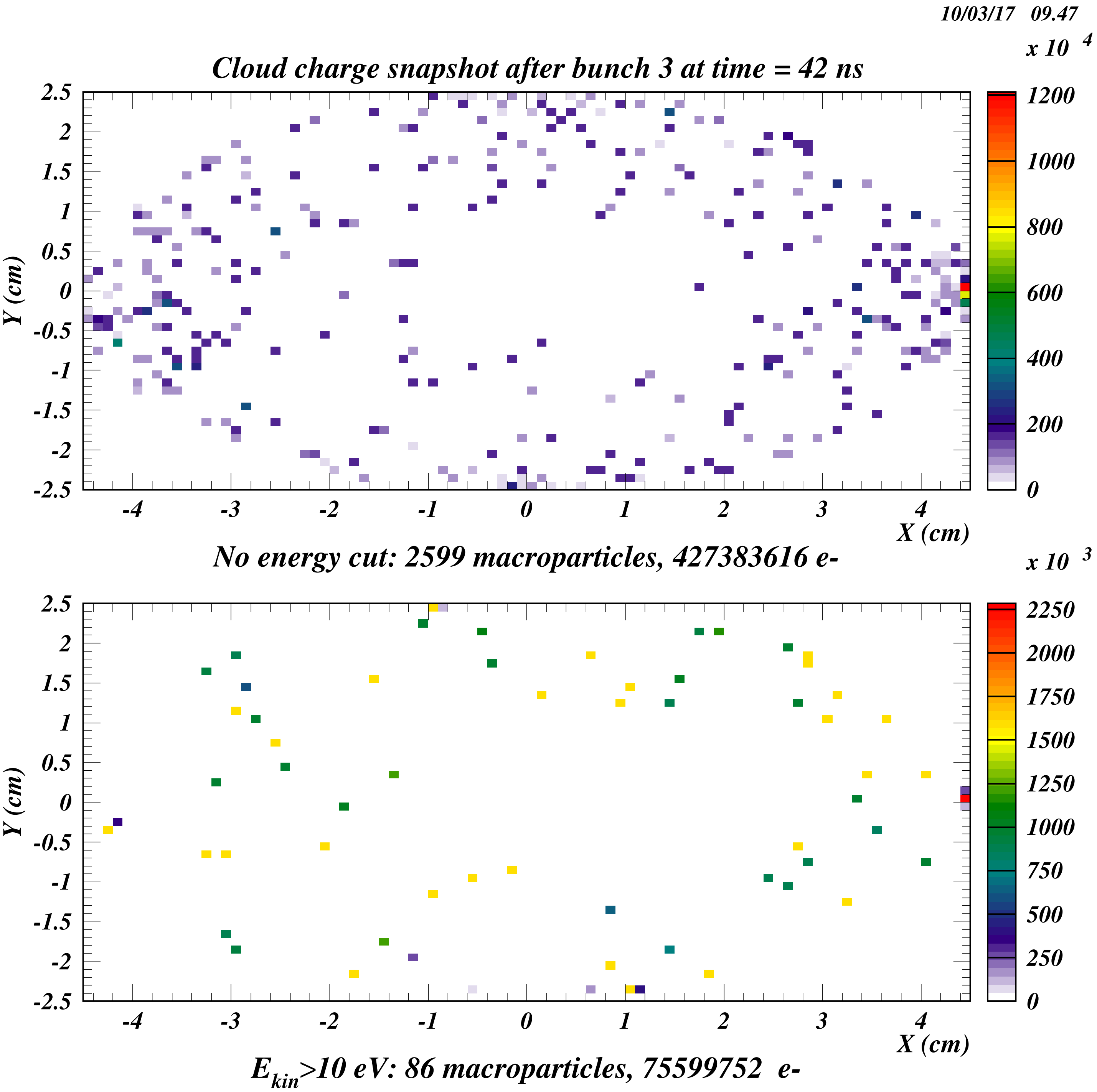
10/03/17 09.47
ECLOUD-TS0608_SEY20_Epk310: Cloud Density in Central Grid Cell (10^12 m^-3)
Electron Density (10^12 m^-3)
Time (ns)
0
2500
5000
7500
10000
12500
15000
17500
20000
0.2
0.4
0.6
0.8
1
1.2

10/03/17 09.47

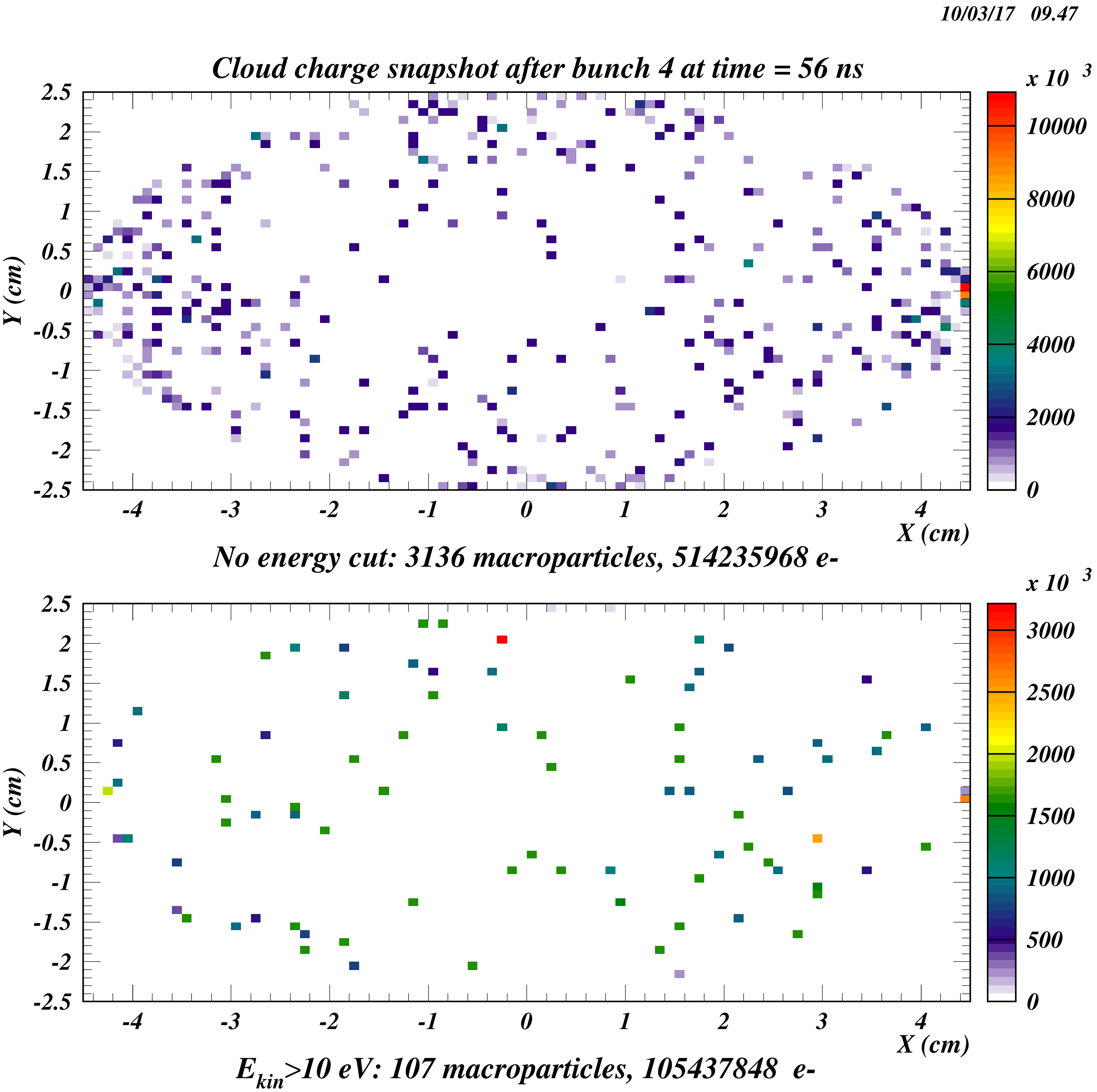

Cloud charge snapshot after bunch 1 at time = 14 ns
Y (cm)
X (cm)
x 10^3
No energy cut: 1000 macroparticles, 178552896 e-
Y (cm)
X (cm)
x 10^3
E_kin>10 eV: 57 macroparticles, 40907888 e-



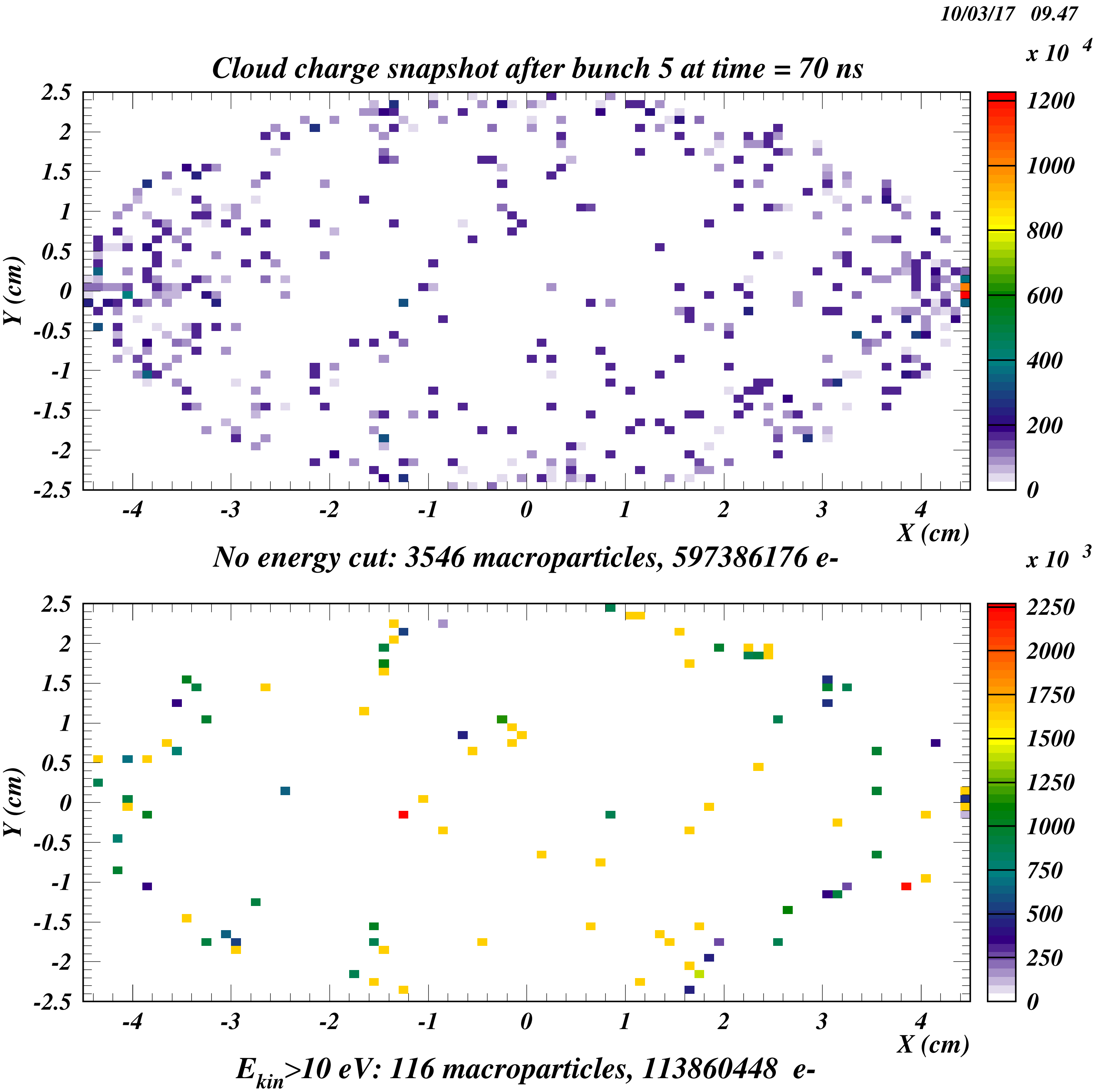
10/03/17 09.47
Cloud charge snapshot after bunch 2 at time = 28 ns
x 10^4
Y (cm)
X (cm)
No energy cut: 1895 macroparticles, 316252480 e-
x 10^3
Y (cm)
X (cm)
E_kin>10 eV: 77 macroparticles, 74601816 e-



10/03/17 09.47
Cloud charge snapshot after bunch 3 at time = 42 ns
x 10^4
Y (cm)
X (cm)
No energy cut: 2599 macroparticles, 427383616 e-
x 10^3
Y (cm)
X (cm)
E_kin>10 eV: 86 macroparticles, 75599752 e-

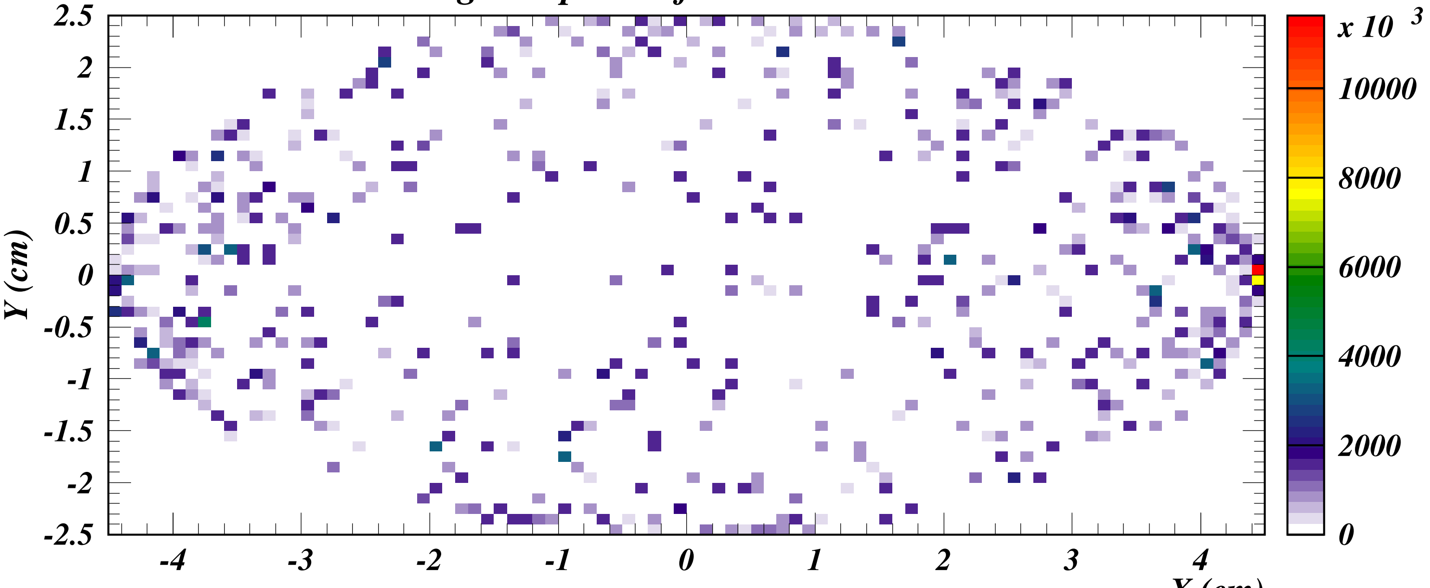


10/03/17 09.47
Cloud charge snapshot after bunch 4 at time = 56 ns
x 10 3
Y (cm)
X (cm)
No energy cut: 3136 macroparticles, 514235968 e-
x 10 3
Y (cm)
X (cm)
E_kin>10 eV: 107 macroparticles, 105437848 e-

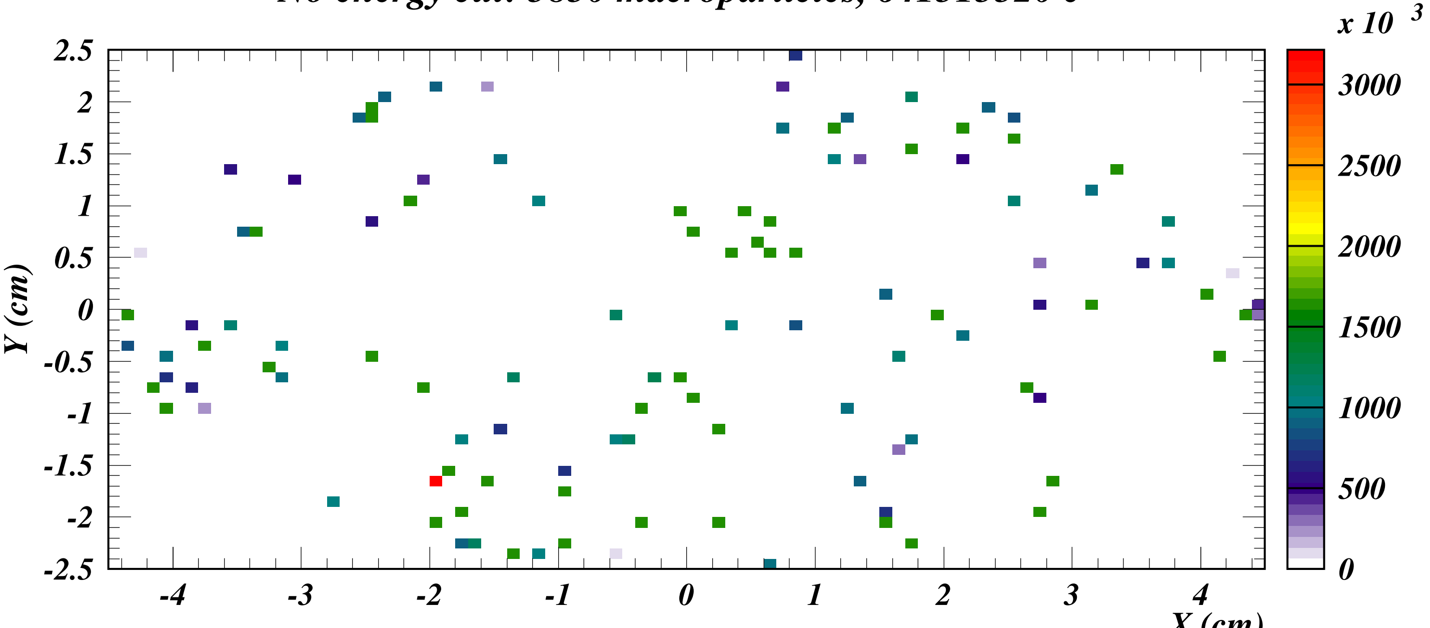

10/03/17 09.47
Cloud charge snapshot after bunch 5 at time = 70 ns
x 10 4
1200
1000
800
600
400
200
0
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
Y (cm)
-4
-3
-2
-1
0
1
2
3
4
X (cm)
No energy cut: 3546 macroparticles, 597386176 e-
x 10 3
2250
2000
1750
1500
1250
1000
750
500
250
0
Y (cm)
X (cm)
E_kin>10 eV: 116 macroparticles, 113860448 e-

10/03/17 09.47

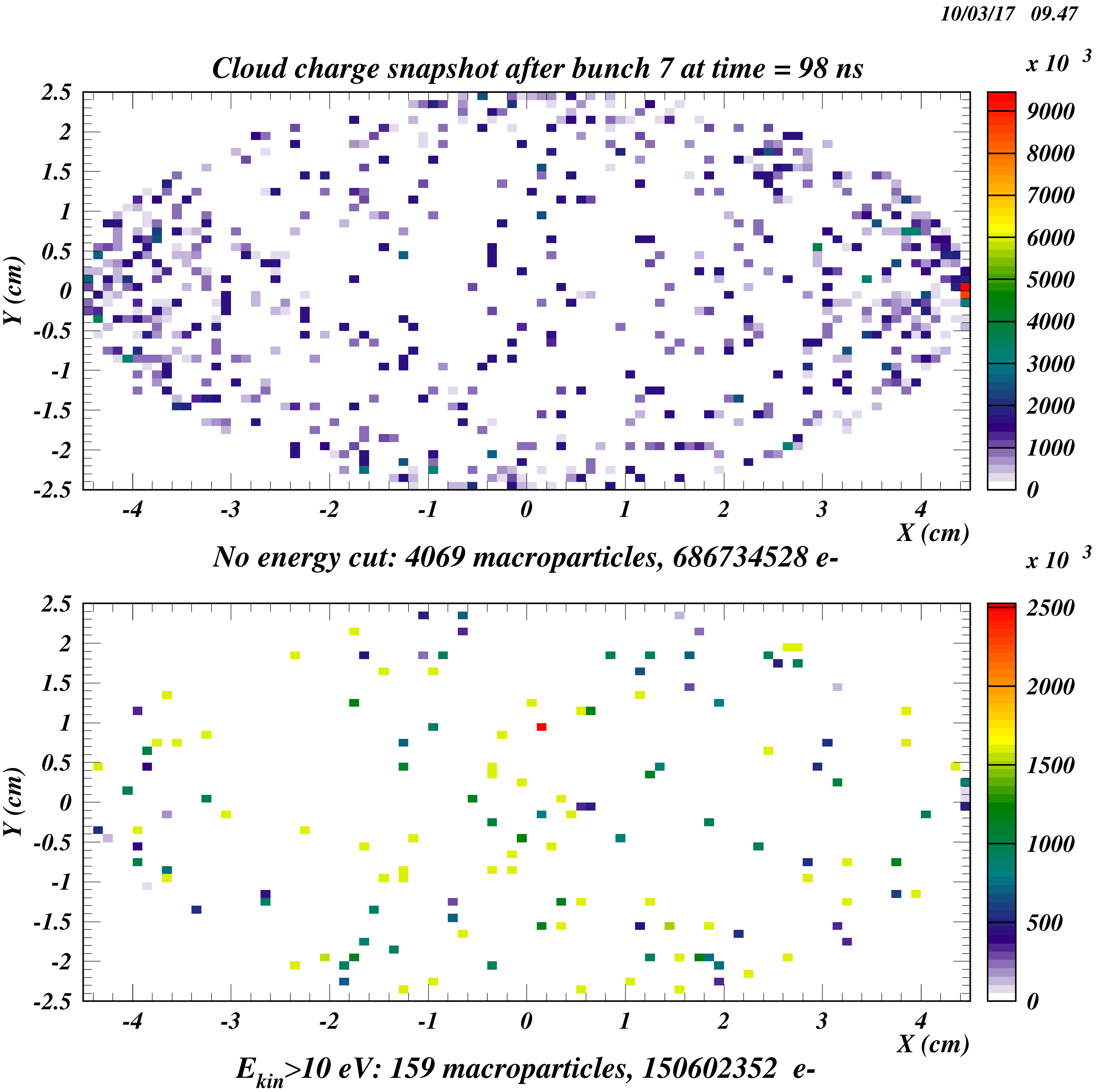
Cloud charge snapshot after bunch 6 at time = 84 ns

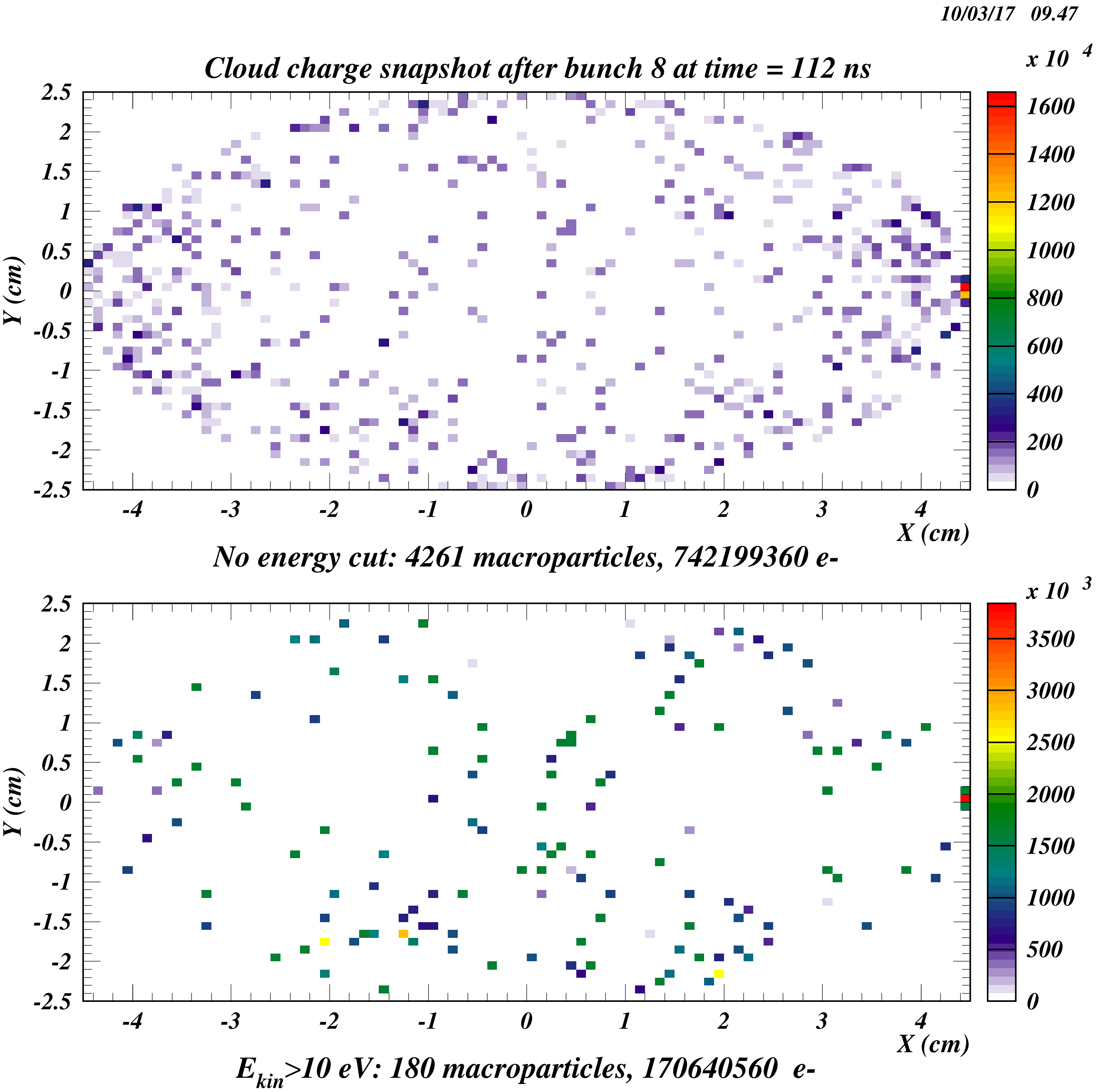


No energy cut: 3850 macroparticles, 641515520 e-



E_{kin}>10 eV: 128 macroparticles, 131060144 e-


10/03/17 09.47
Cloud charge snapshot after bunch 7 at time = 98 ns
x 10 3
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Y (cm)
X (cm)
No energy cut: 4069 macroparticles, 686734528 e-
x 10 3
2500
2000
1500
1000
500
0
Y (cm)
X (cm)
E_{kin}>10 eV: 159 macroparticles, 150602352 e-


10/03/17 09.47
Cloud charge snapshot after bunch 8 at time = 112 ns
x 10^4
1600
1400
1200
1000
800
600
400
200
0
Y (cm)
X (cm)
No energy cut: 4261 macroparticles, 742199360 e-
x 10^3
3500
3000
2500
2000
1500
1000
500
0
Y (cm)
X (cm)
E_kin>10 eV: 180 macroparticles, 170640560 e-

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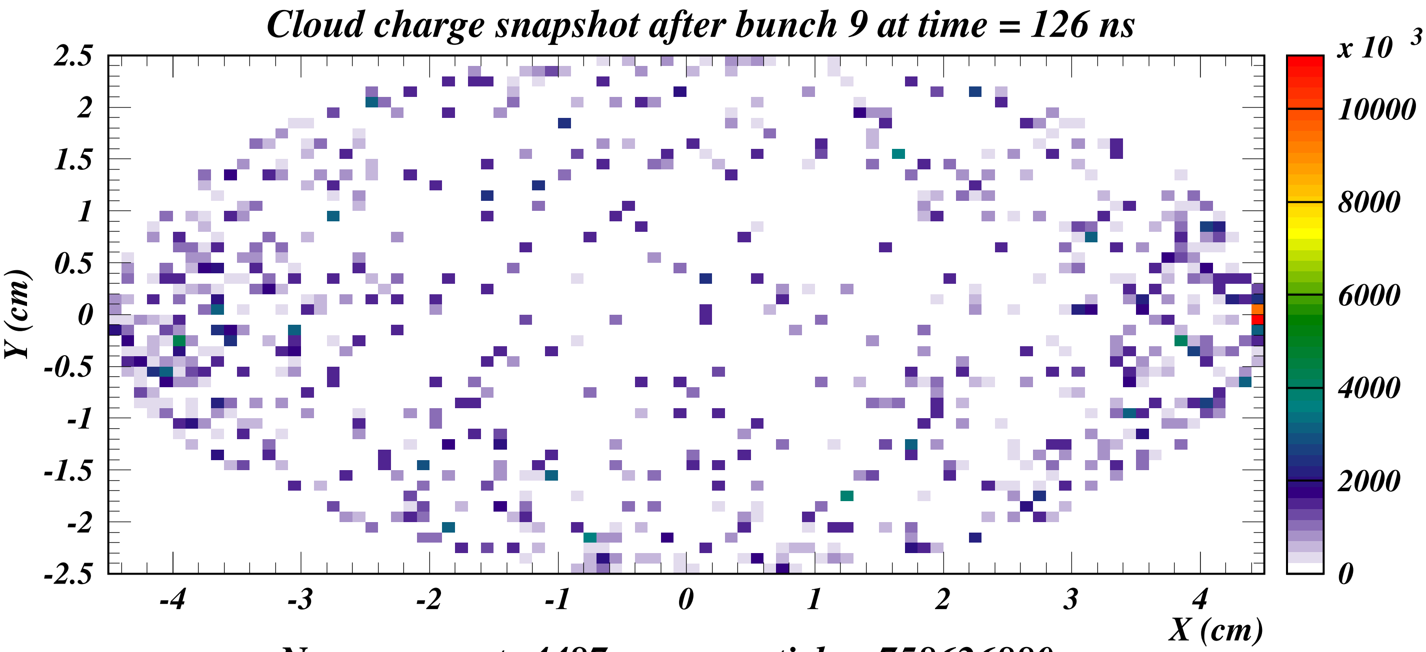
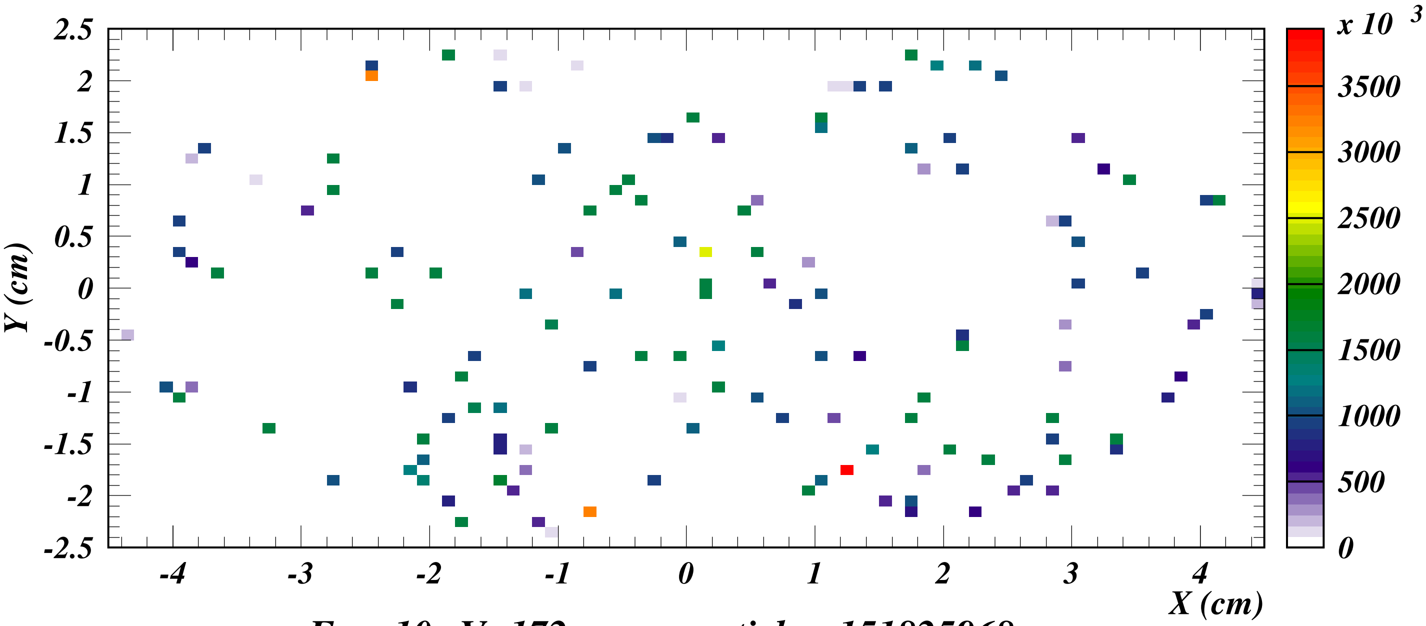
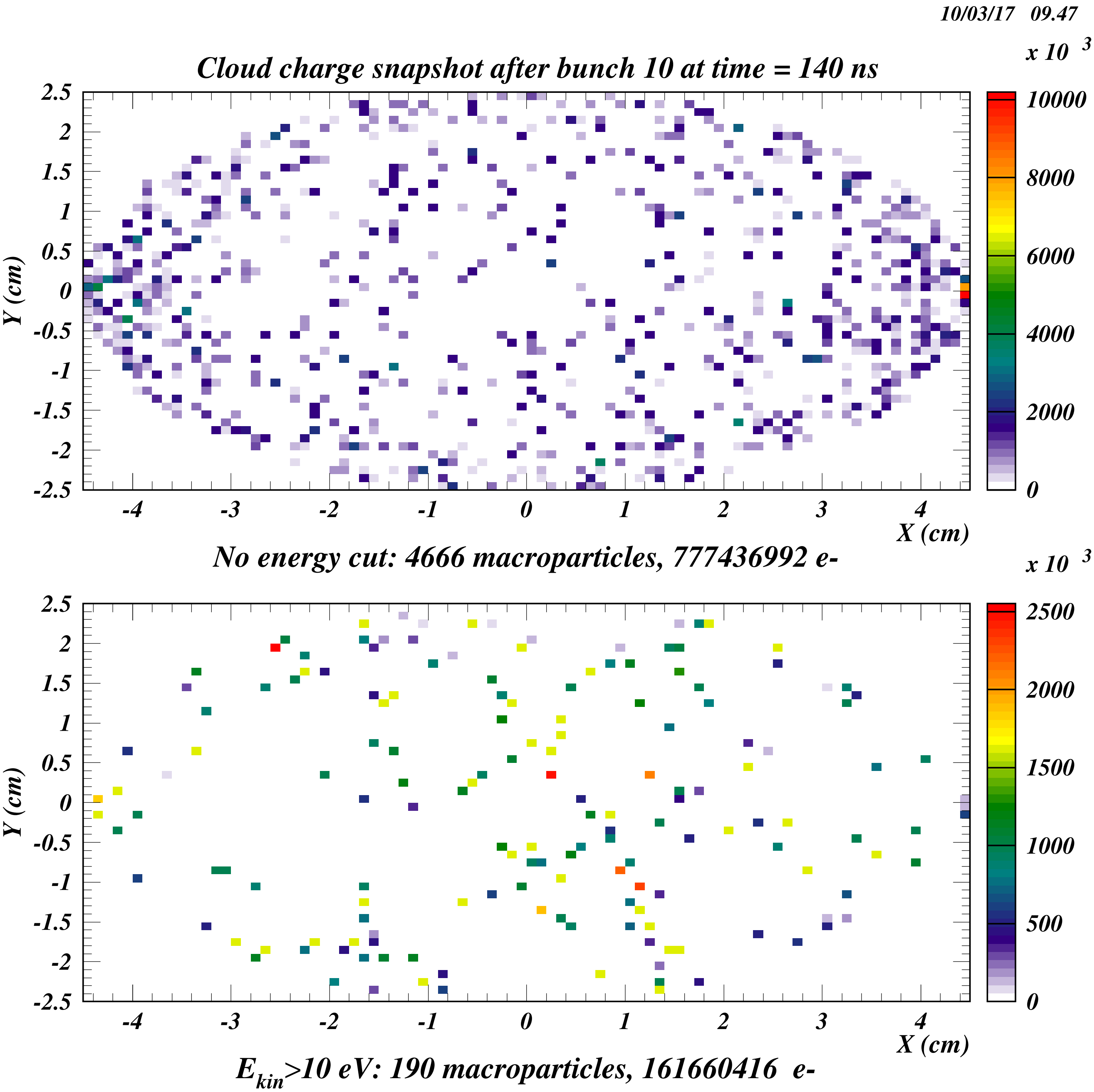


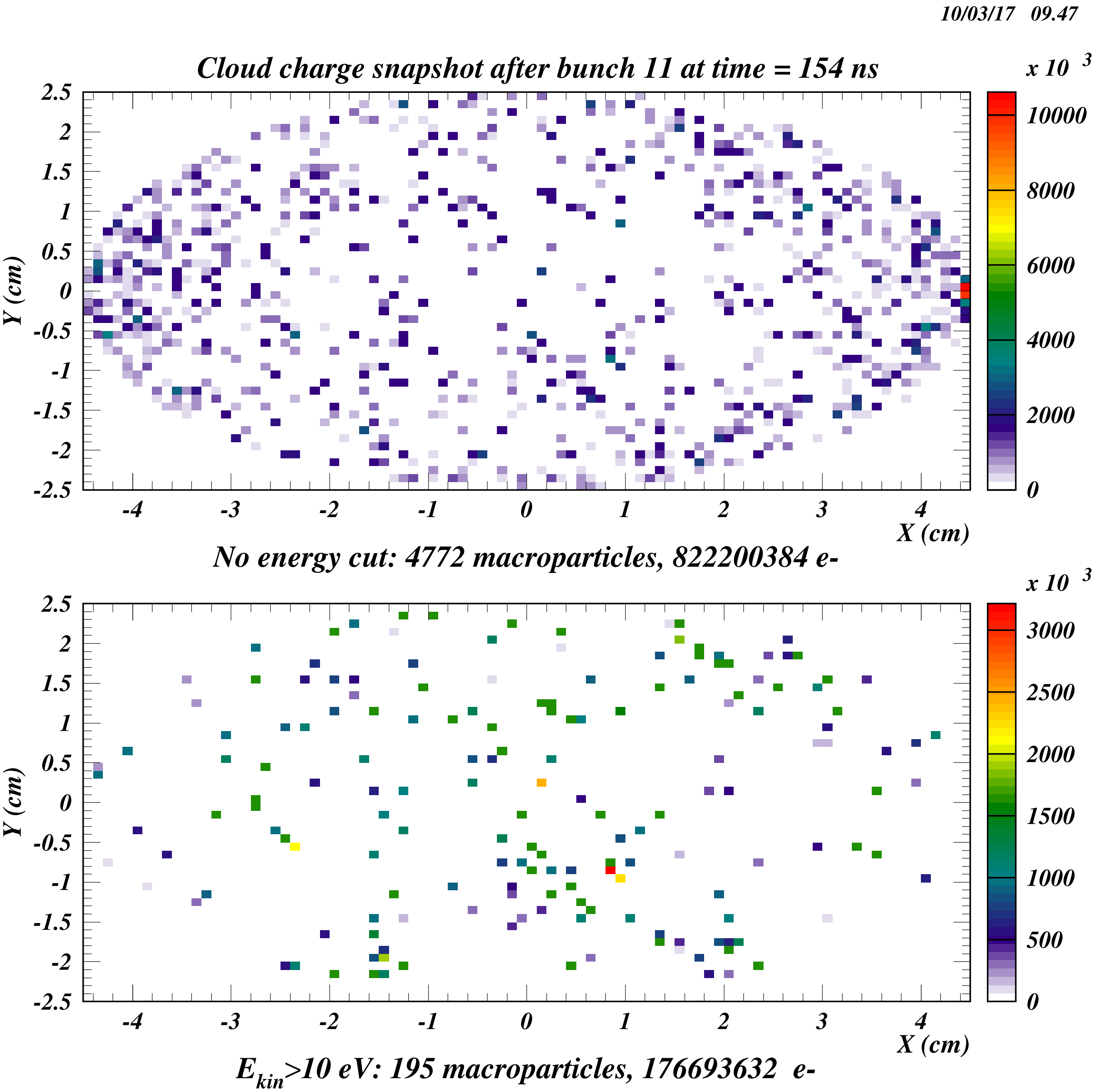
No energy cut: 4487 macroparticles, 758626880 e-

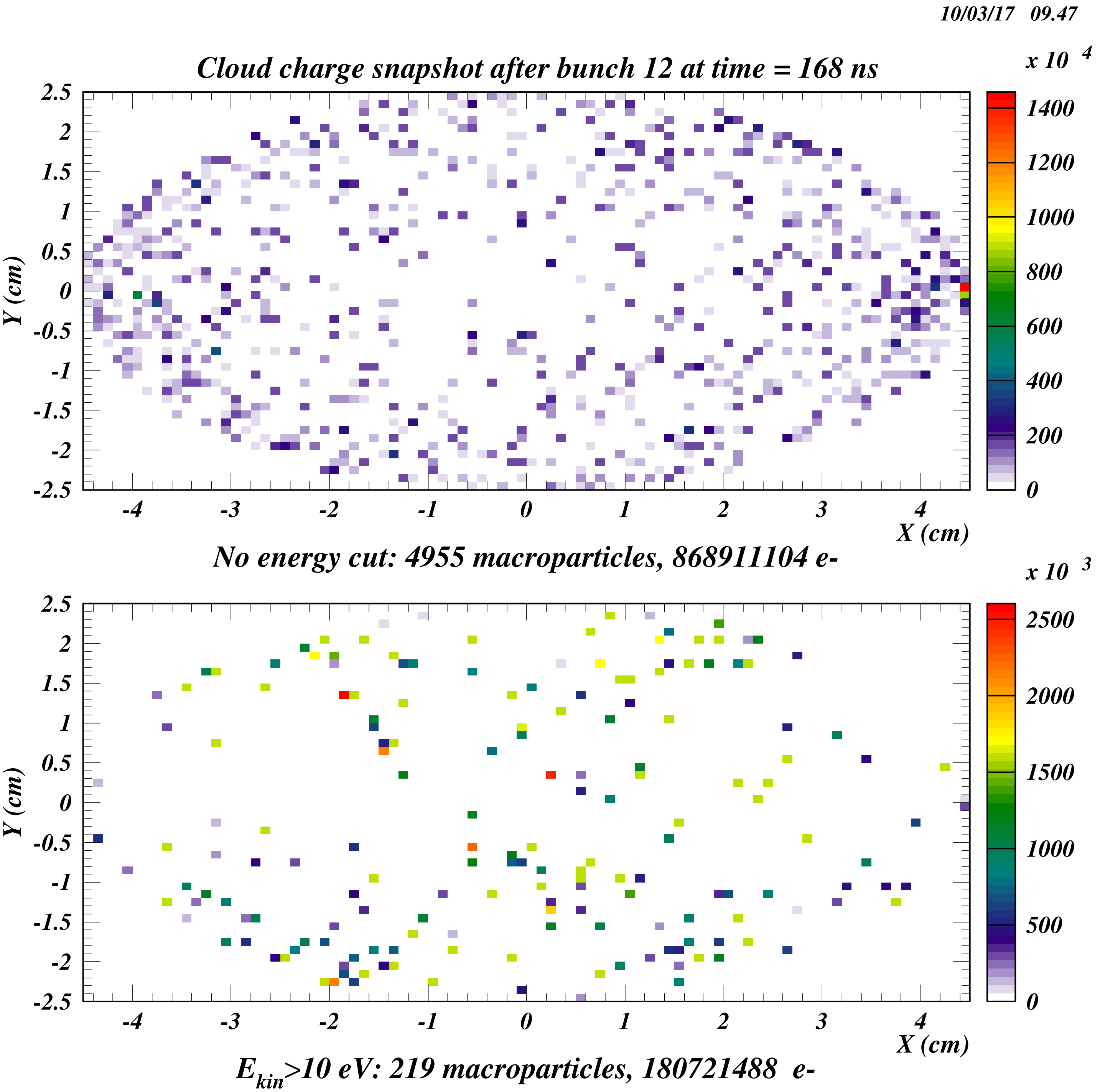


E_{kin}>10 eV: 172 macroparticles, 151825968 e-

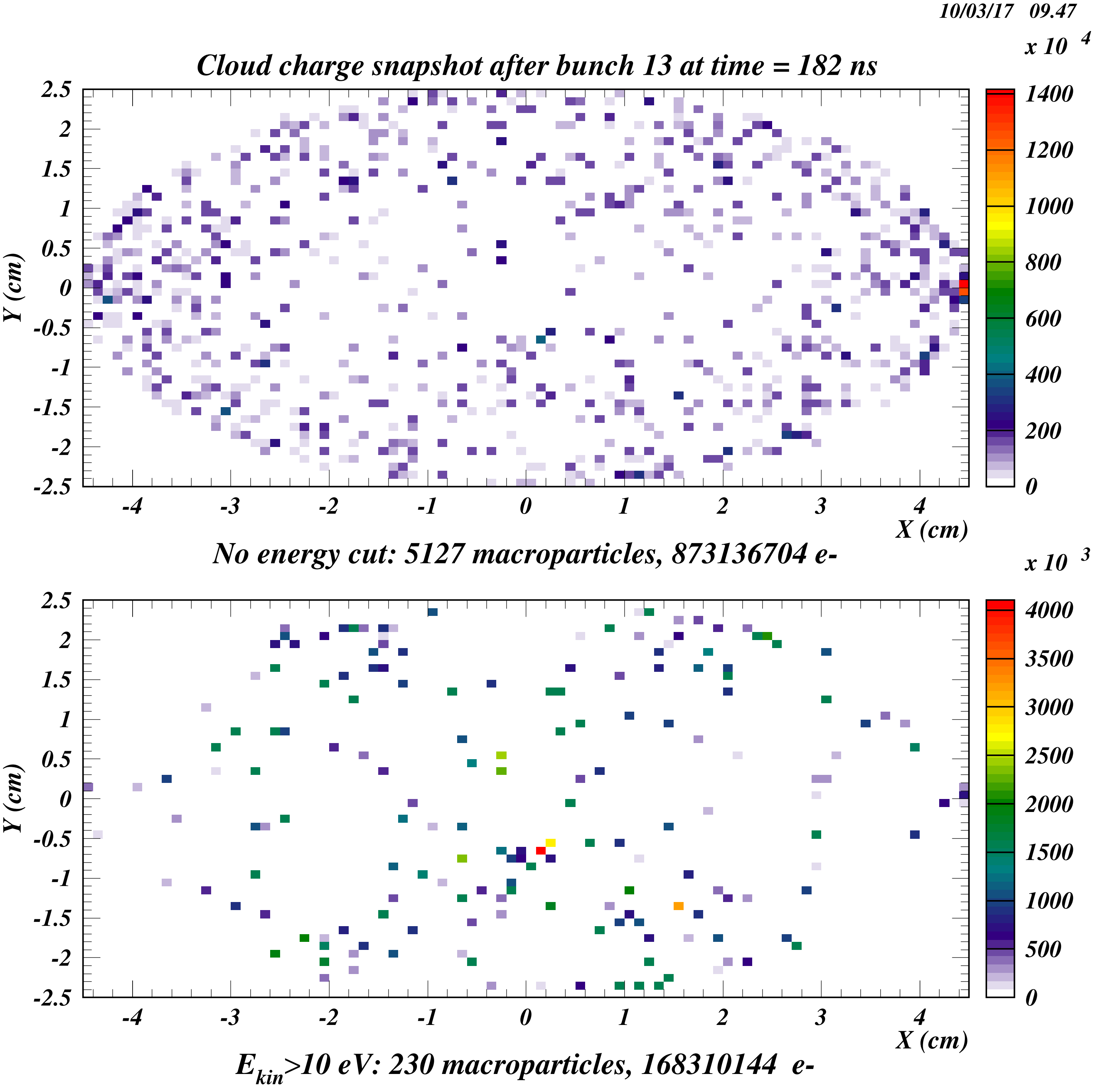


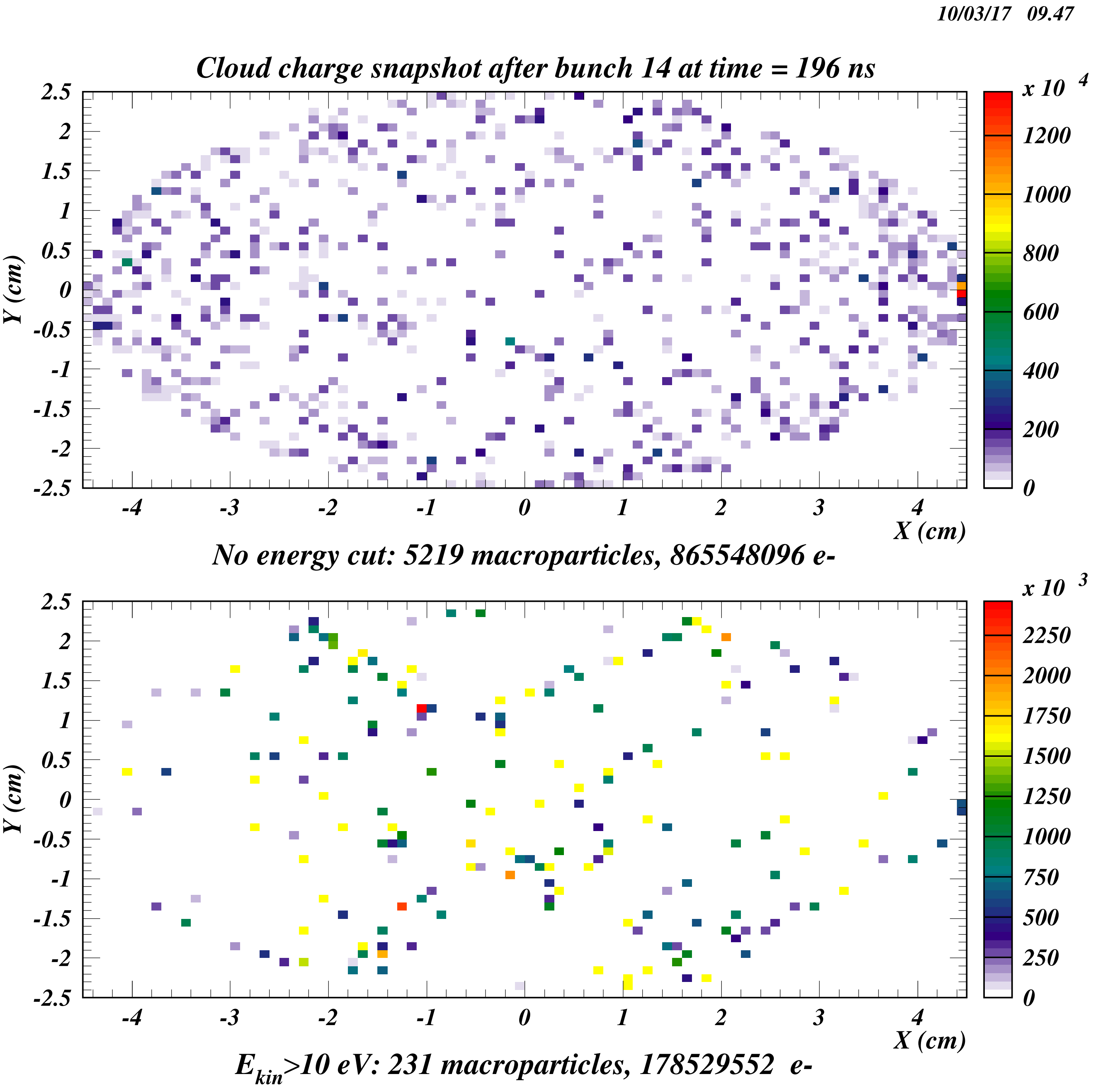
10/03/17 09.47
Cloud charge snapshot after bunch 10 at time = 140 ns
x 10 3
10000
8000
6000
4000
2000
0
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
Y (cm)
-4
-3
-2
-1
0
1
2
3
4
X (cm)
No energy cut: 4666 macroparticles, 777436992 e-
x 10 3
2500
2000
1500
1000
500
0
Y (cm)
X (cm)
E_{kin}>10 eV: 190 macroparticles, 161660416 e-

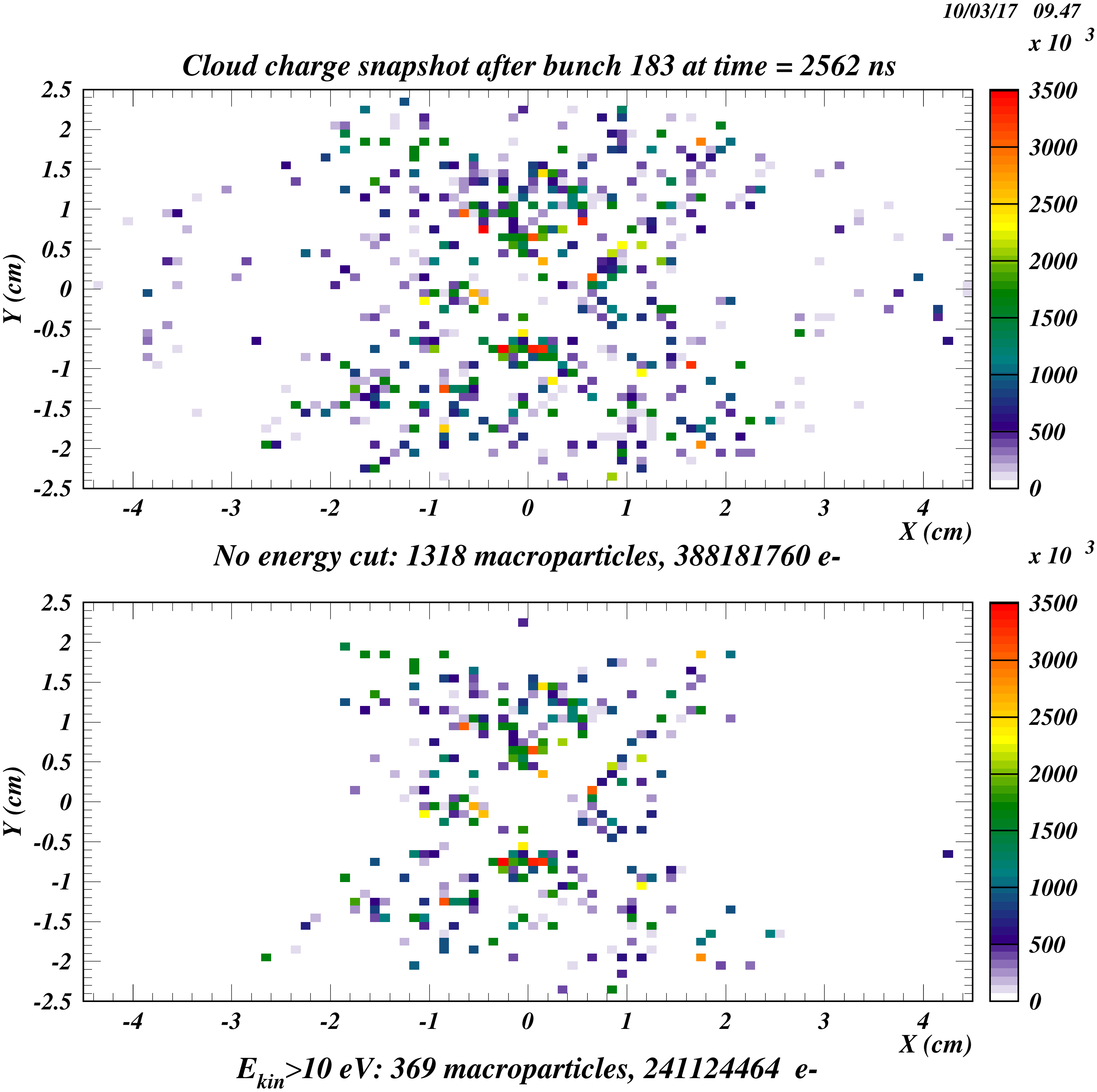

10/03/17 09.47
Cloud charge snapshot after bunch 11 at time = 154 ns
x 10 3
10000
8000
6000
4000
2000
0
Y (cm)
X (cm)
No energy cut: 4772 macroparticles, 822200384 e-
x 10 3
3000
2500
2000
1500
1000
500
0
Y (cm)
X (cm)
E kin >10 eV: 195 macroparticles, 176693632 e-



10/03/17 09.47
Cloud charge snapshot after bunch 12 at time = 168 ns
x 10^4
Y (cm)
X (cm)
No energy cut: 4955 macroparticles, 868911104 e-
x 10^3
Y (cm)
X (cm)
E_kin>10 eV: 219 macroparticles, 180721488 e-


10/03/17 09.47
Cloud charge snapshot after bunch 13 at time = 182 ns
x 10 4
Y (cm)
X (cm)
No energy cut: 5127 macroparticles, 873136704 e-
x 10 3
Y (cm)
X (cm)
E kin>10 eV: 230 macroparticles, 168310144 e-


10/03/17 09.47
Cloud charge snapshot after bunch 14 at time = 196 ns
Y (cm)
X (cm)
x 10 4
No energy cut: 5219 macroparticles, 865548096 e-
x 10 3
E_kin>10 eV: 231 macroparticles, 178529552 e-



10/03/17 09.47
Cloud charge snapshot after bunch 183 at time = 2562 ns
x 10 3
Y (cm)
X (cm)
No energy cut: 1318 macroparticles, 388181760 e-
x 10 3
Y (cm)
X (cm)
E_{kin}>10 eV: 369 macroparticles, 241124464 e-

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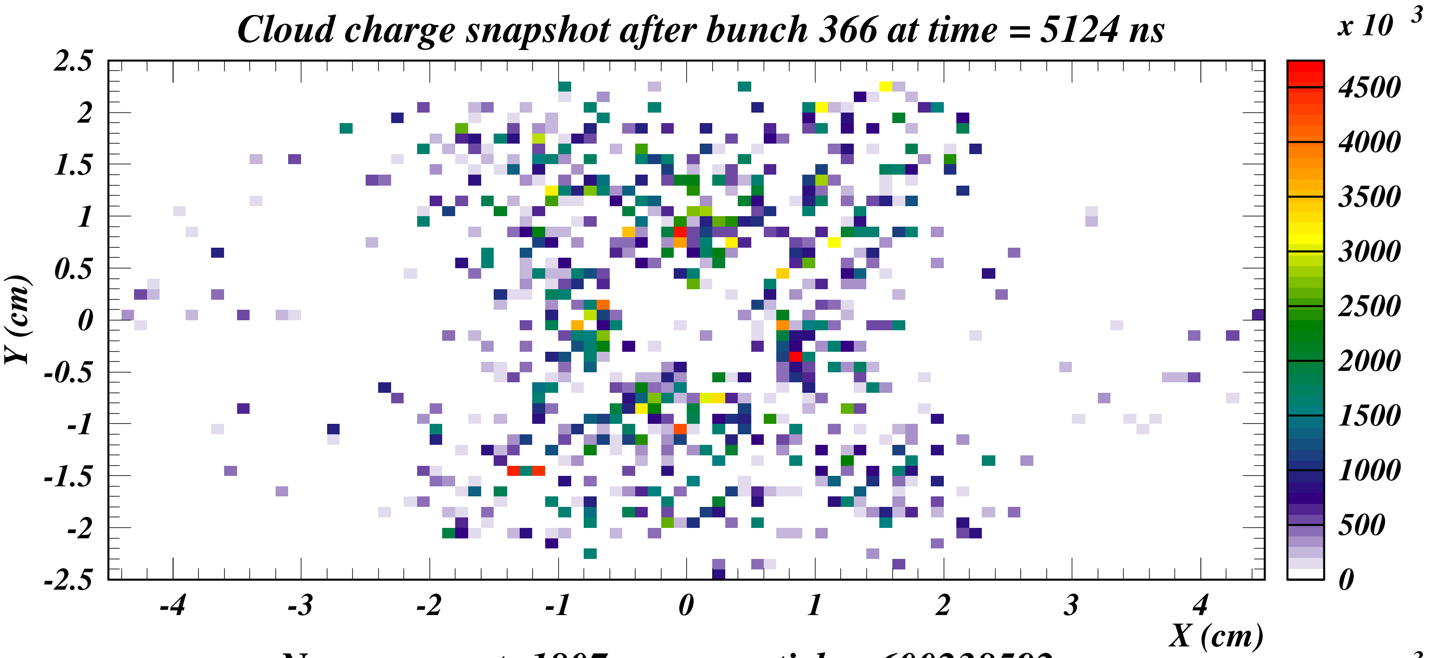
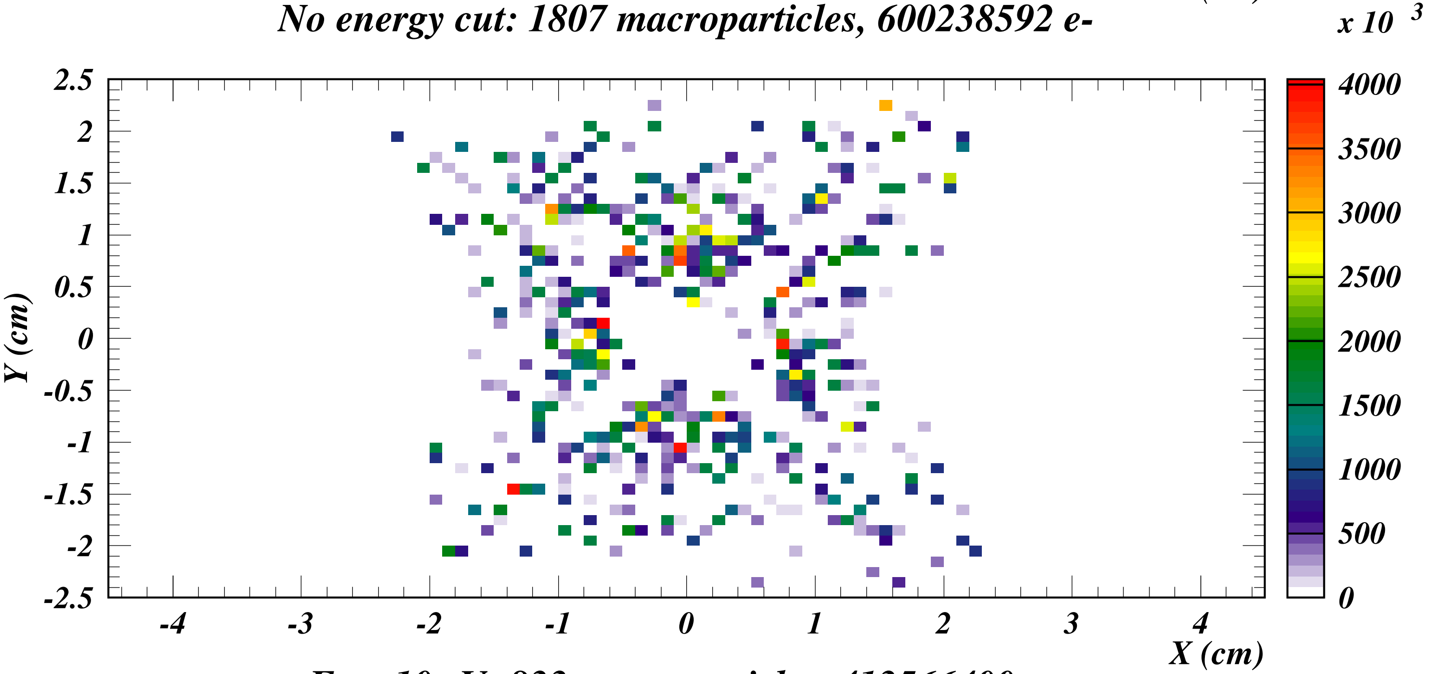
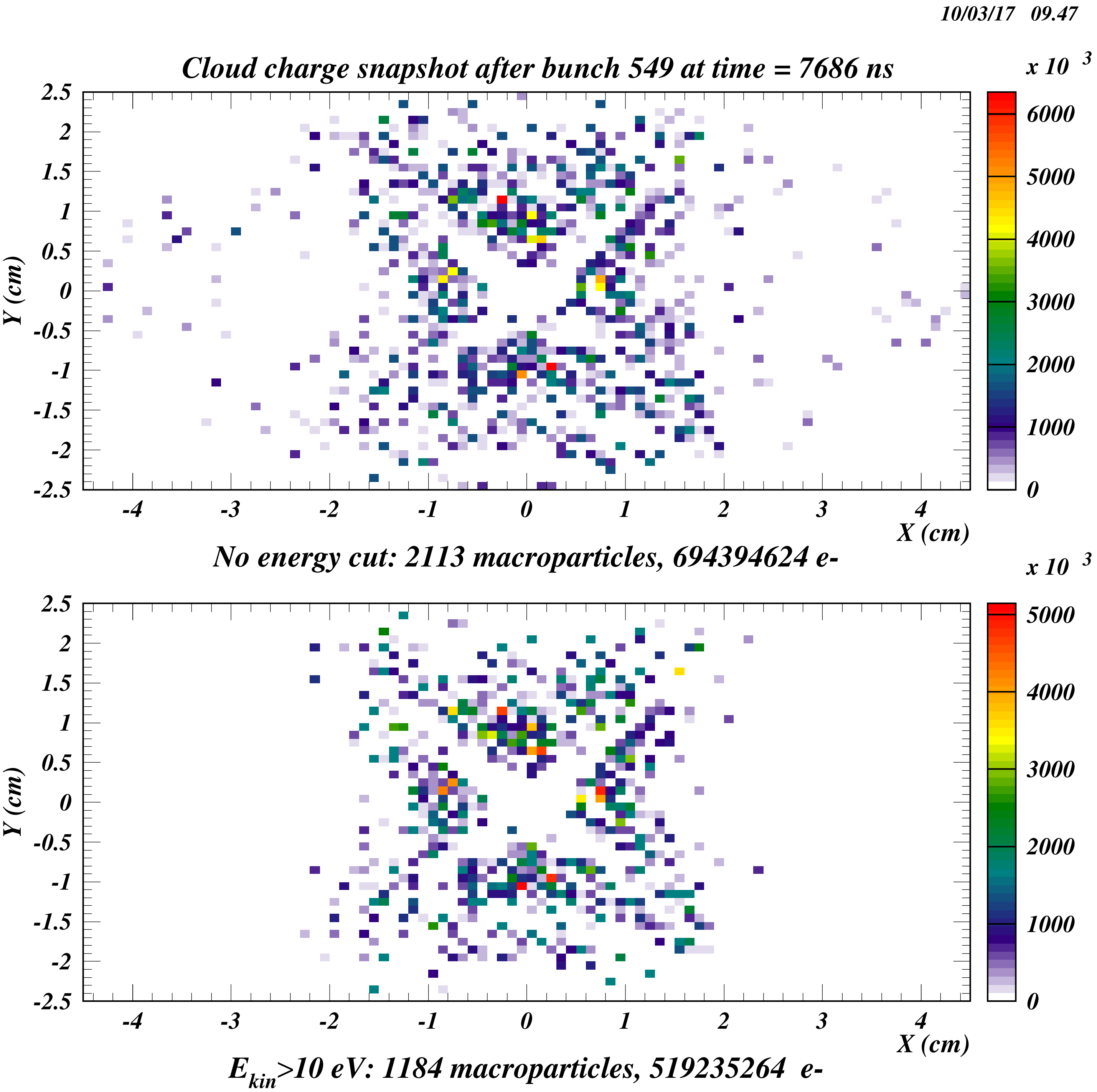
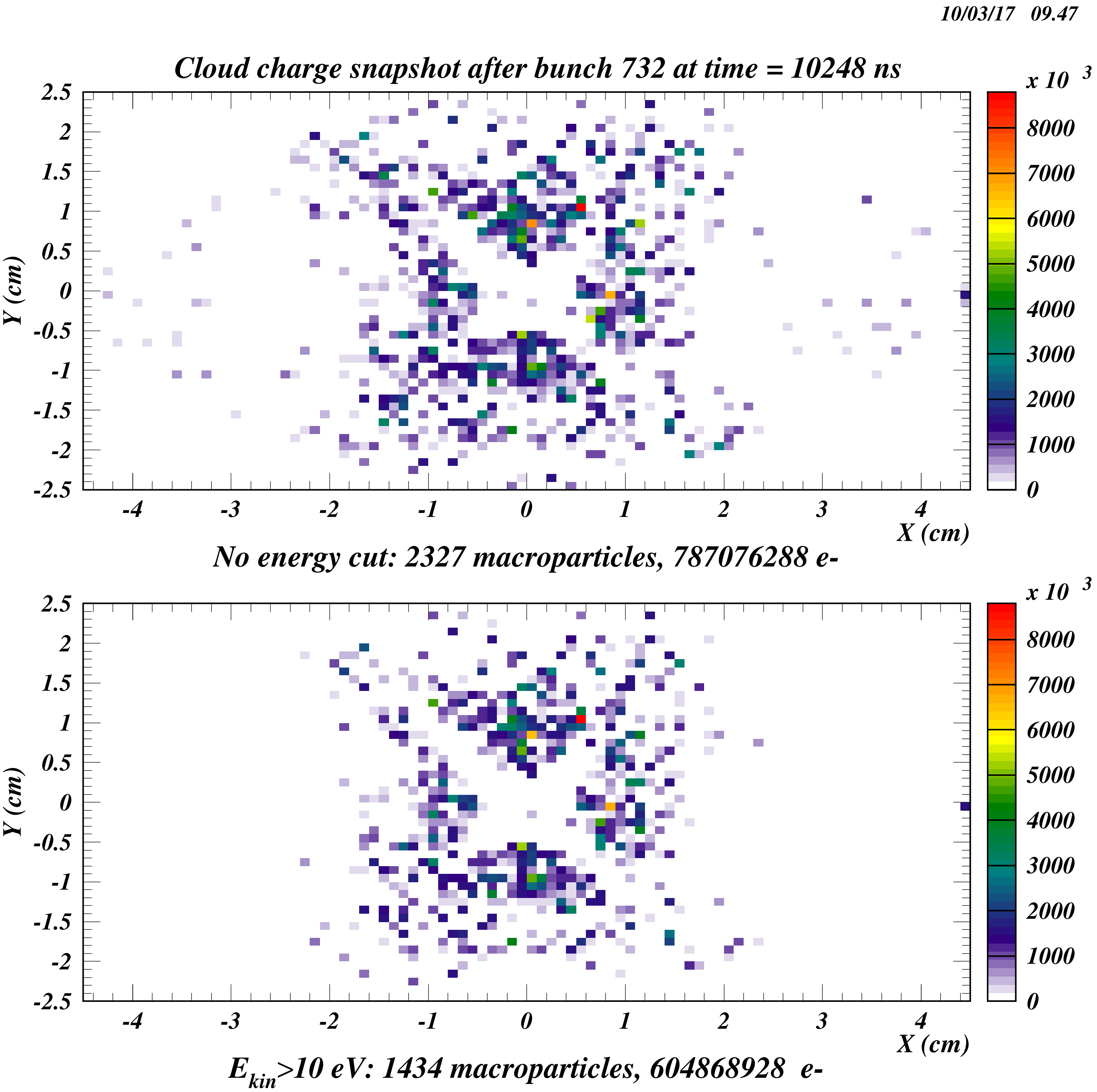


No energy cut: 1807 macroparticles, 600238592 e-

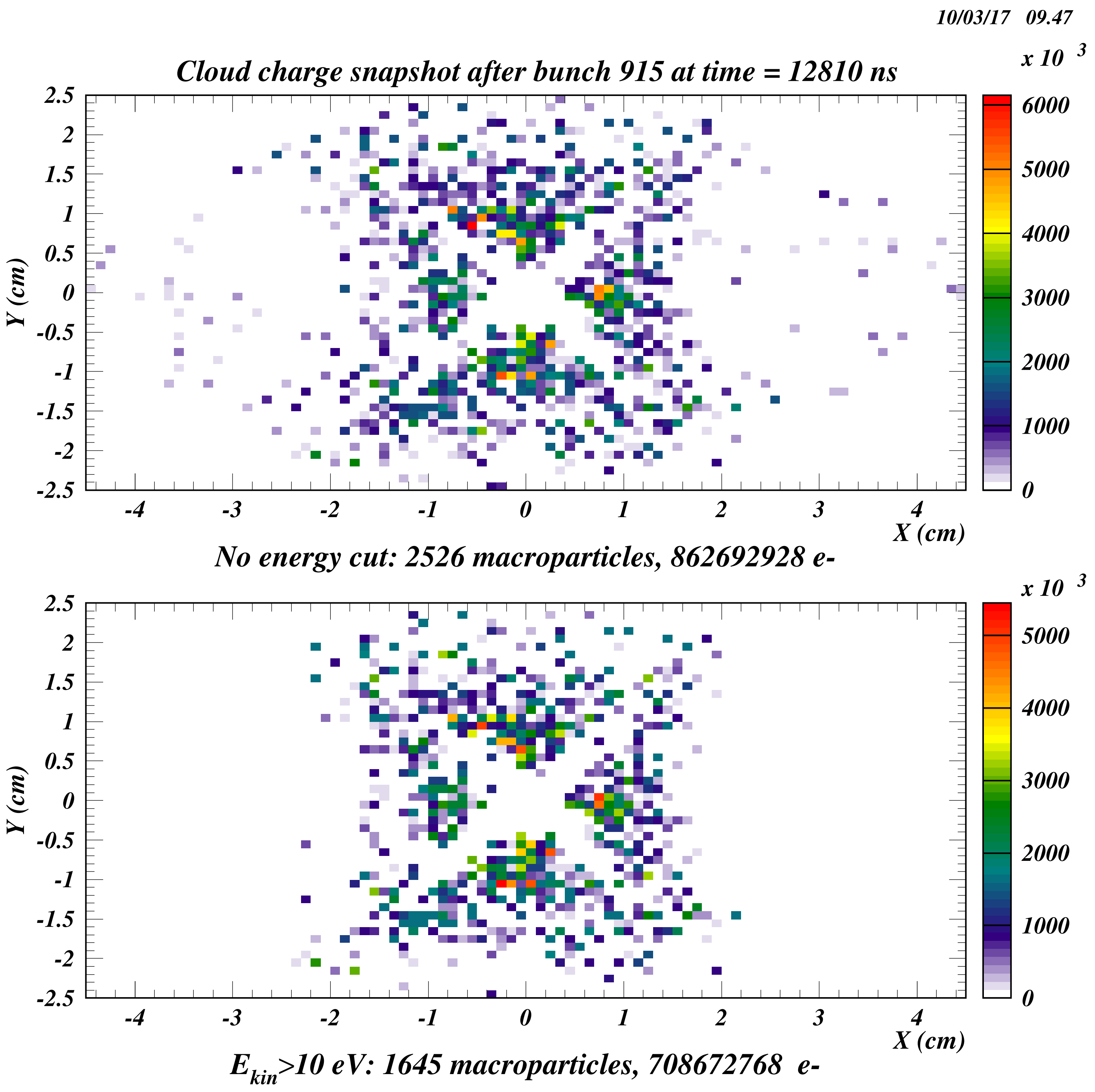


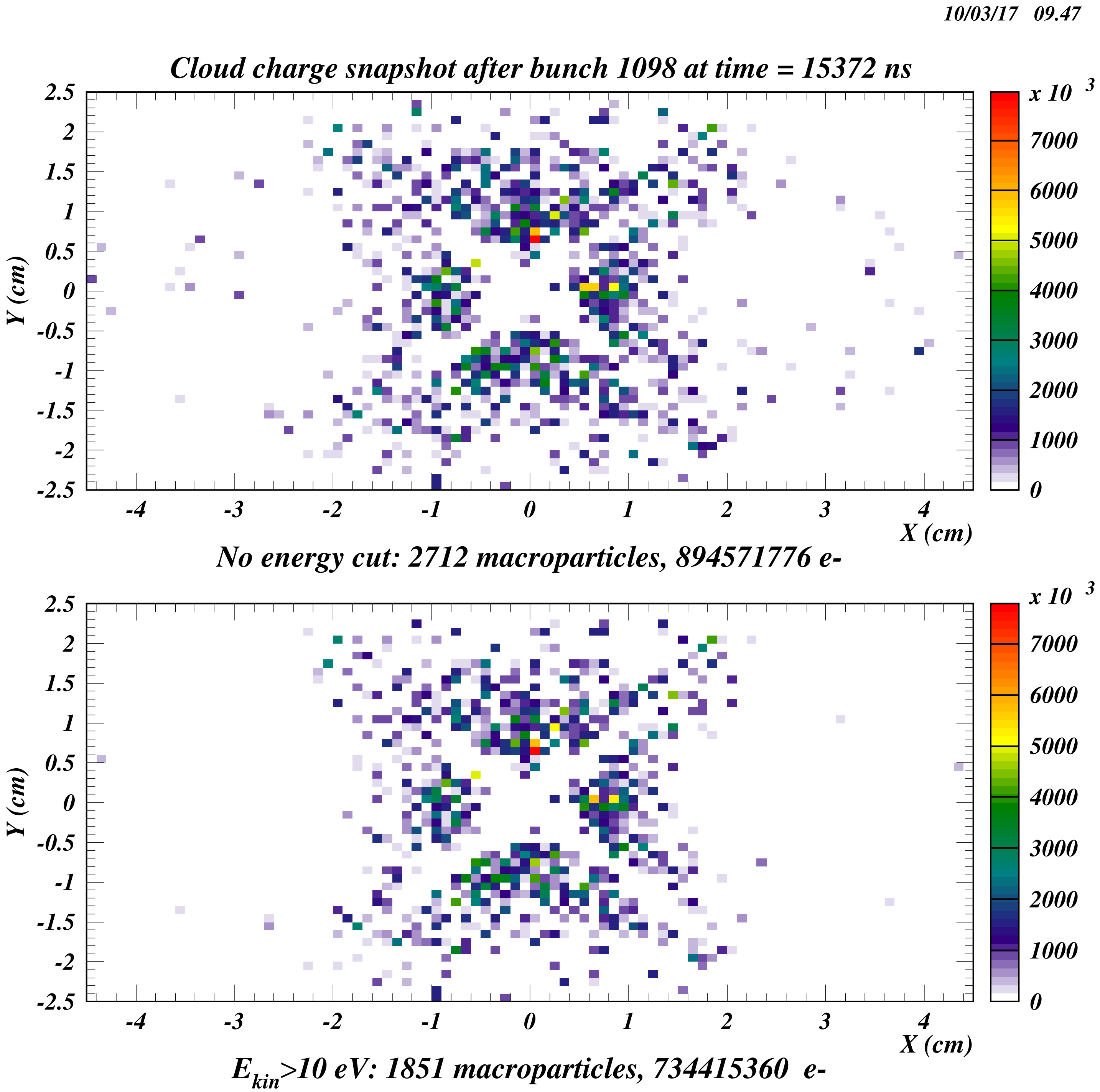
E_{kin}>10 eV: 833 macroparticles, 413566400 e-


10/03/17 09.47
Cloud charge snapshot after bunch 549 at time = 7686 ns
x 10 3
6000
5000
4000
3000
2000
1000
0
Y (cm)
X (cm)
No energy cut: 2113 macroparticles, 694394624 e-
x 10 3
5000
4000
3000
2000
1000
0
Y (cm)
X (cm)
E_kin>10 eV: 1184 macroparticles, 519235264 e-



10/03/17 09.47
Cloud charge snapshot after bunch 732 at time = 10248 ns
x 10 3
Y (cm)
X (cm)
No energy cut: 2327 macroparticles, 787076288 e-
x 10 3
Y (cm)
X (cm)
E_{kin}>10 eV: 1434 macroparticles, 604868928 e-


10/03/17 09.47
Cloud charge snapshot after bunch 915 at time = 12810 ns
x 10 3
Y (cm)
X (cm)
No energy cut: 2526 macroparticles, 862692928 e-
x 10 3
Y (cm)
X (cm)
E_kin>10 eV: 1645 macroparticles, 708672768 e-


10/03/17 09.47
Cloud charge snapshot after bunch 1098 at time = 15372 ns
Y (cm)
X (cm)
x 10 3
No energy cut: 2712 macroparticles, 894571776 e-
Y (cm)
X (cm)
x 10 3
E_kin>10 eV: 1851 macroparticles, 734415360 e-

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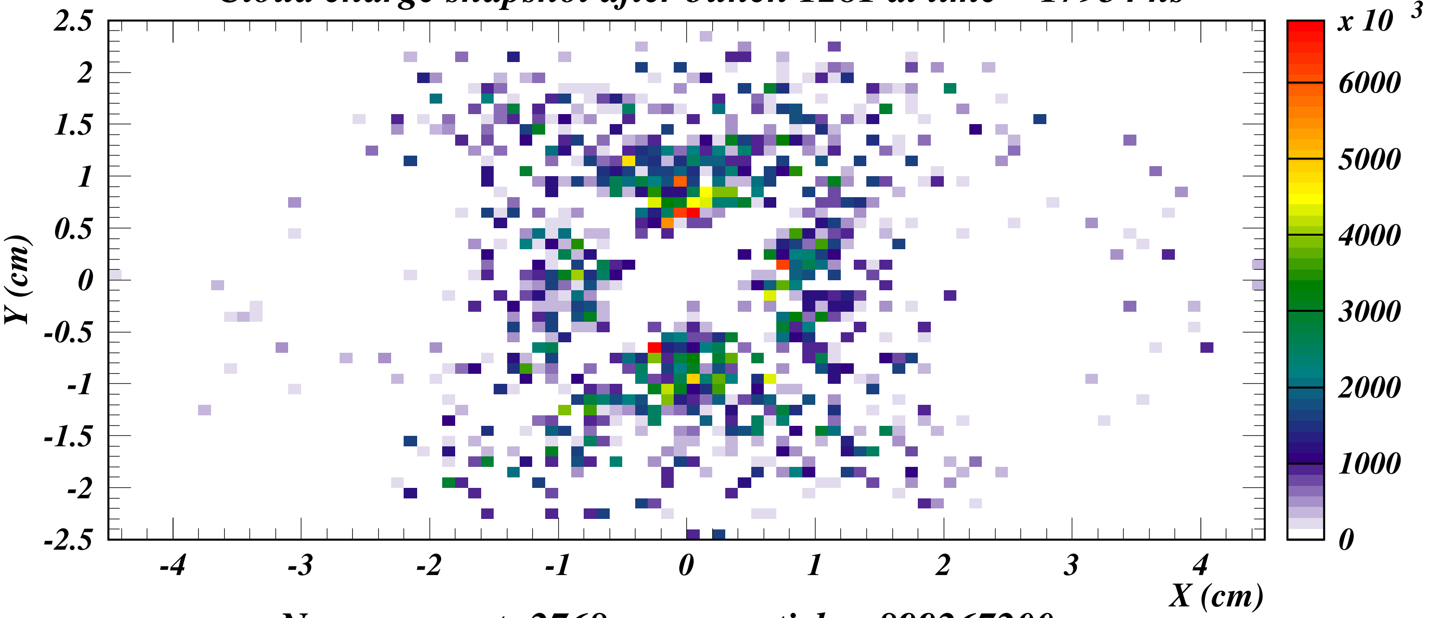
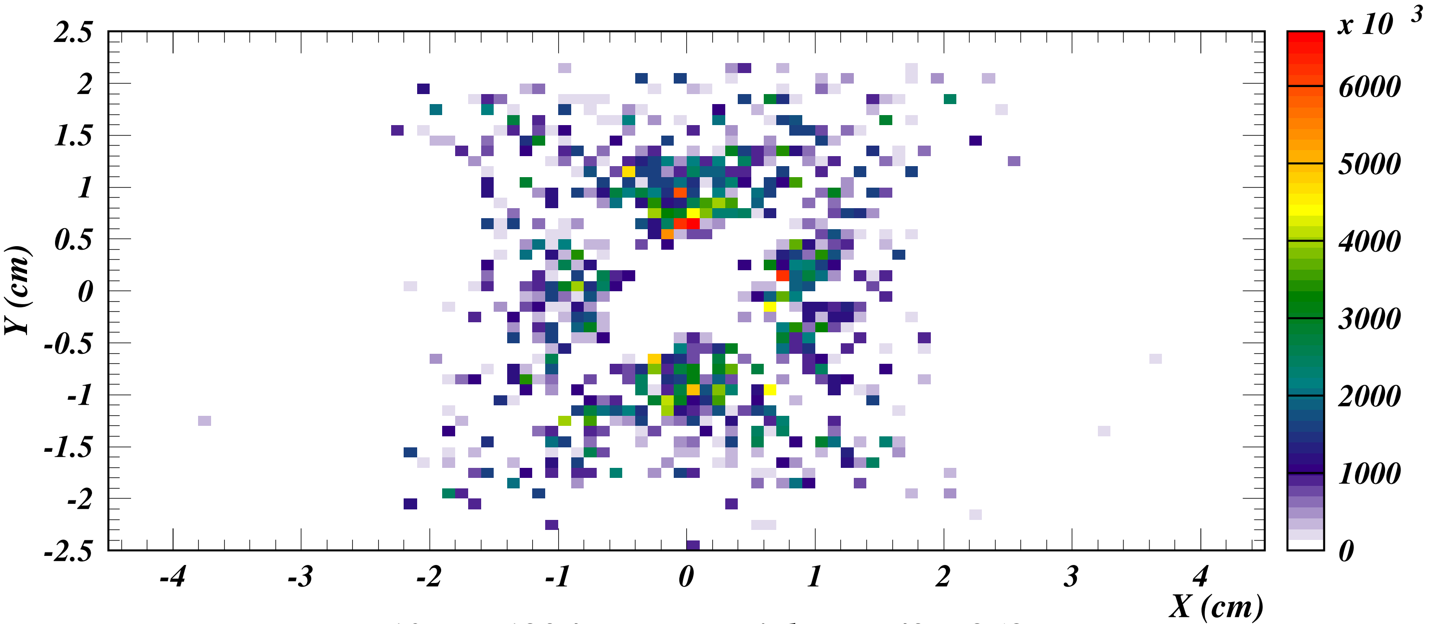
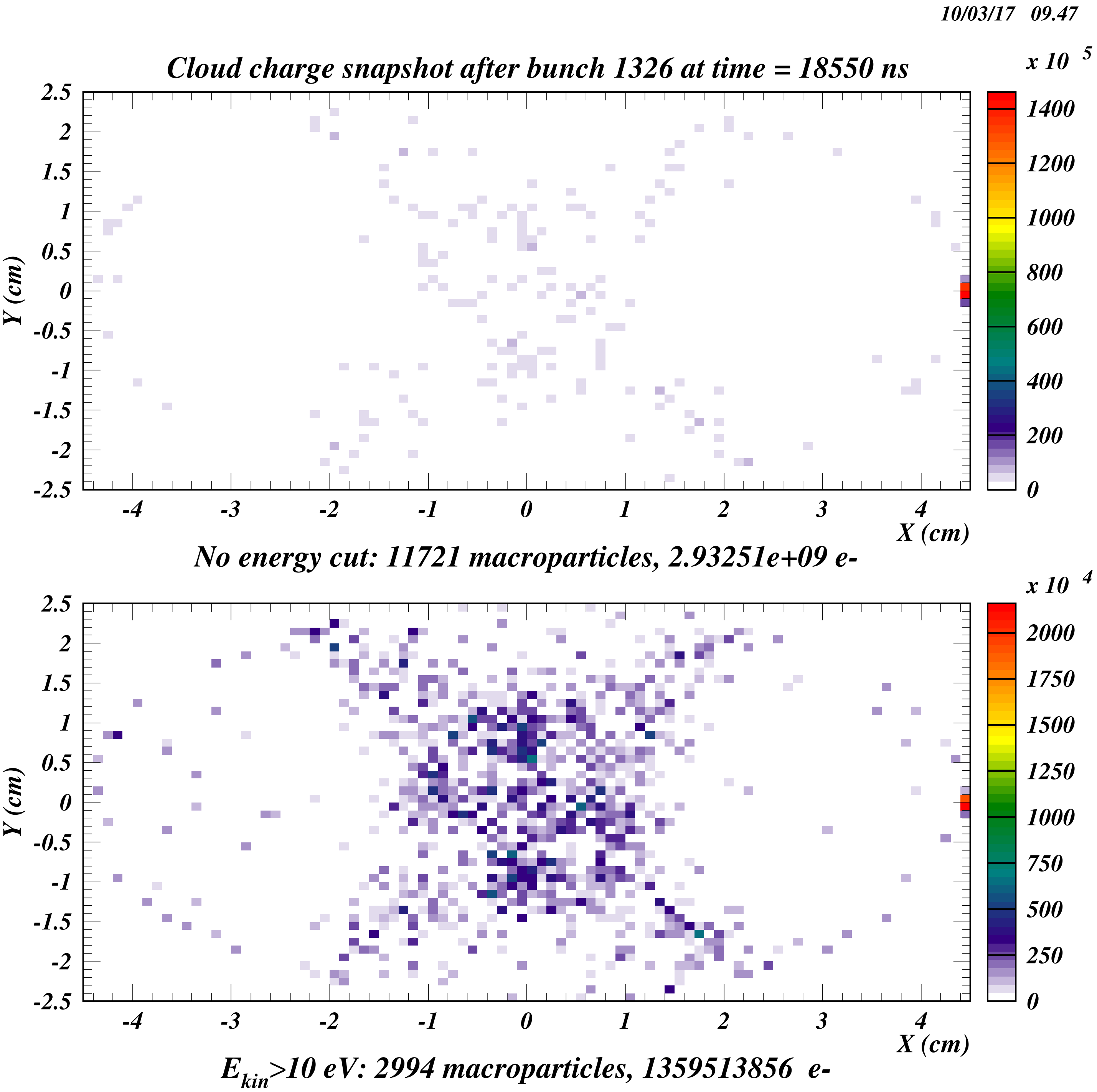
Cloud charge snapshot after bunch 1281 at time = 17934 ns



No energy cut: 2768 macroparticles, 899267200 e-

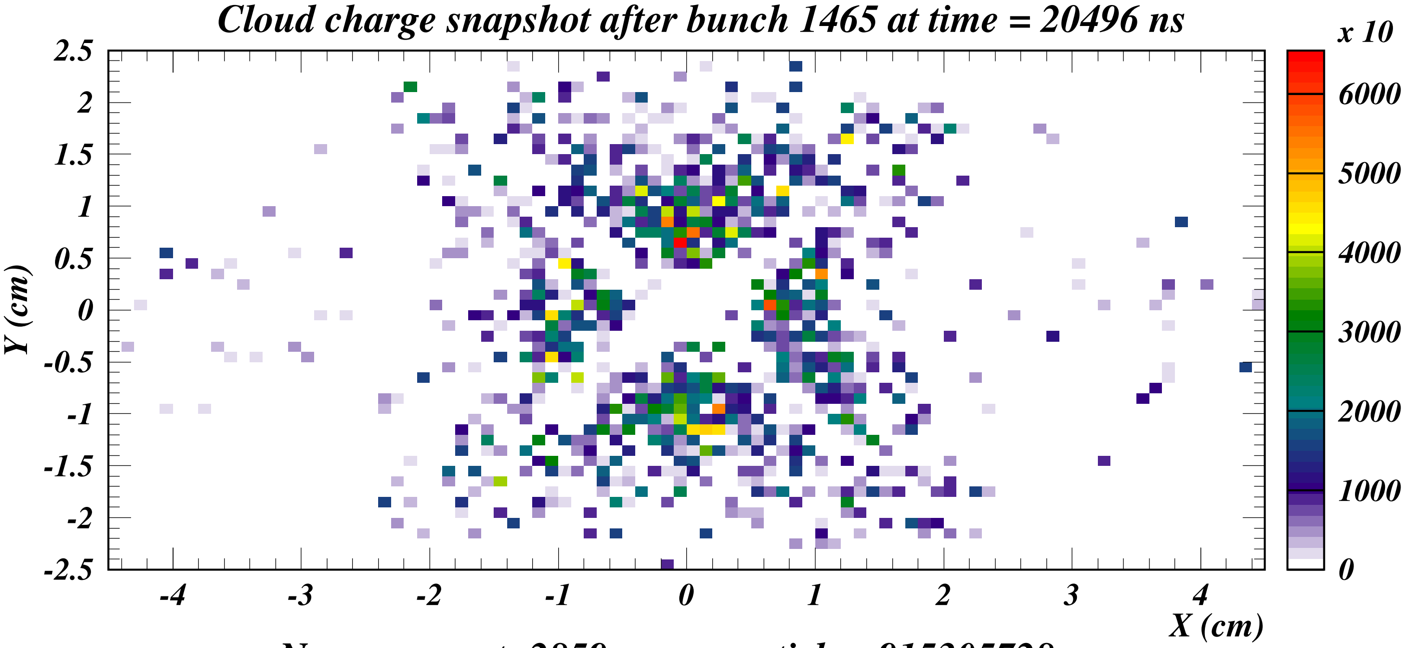


E_{kin}>10 eV: 1934 macroparticles, 754355968 e-

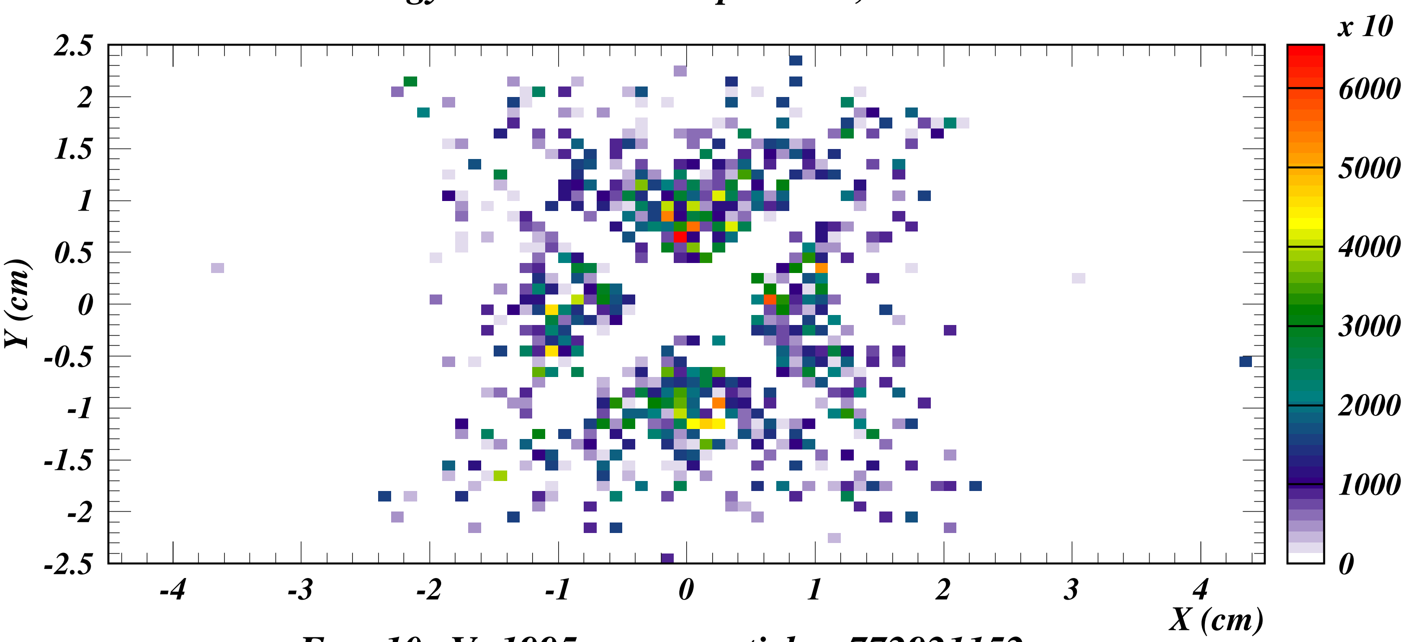

10/03/17 09.47
Cloud charge snapshot after bunch 1326 at time = 18550 ns
x 10^5
Y (cm)
X (cm)
No energy cut: 11721 macroparticles, 2.93251e+09 e-
x 10^4
Y (cm)
X (cm)
E_kin>10 eV: 2994 macroparticles, 1359513856 e-

10/03/17 09.47

Cloud charge snapshot after bunch 1465 at time = 20496 ns



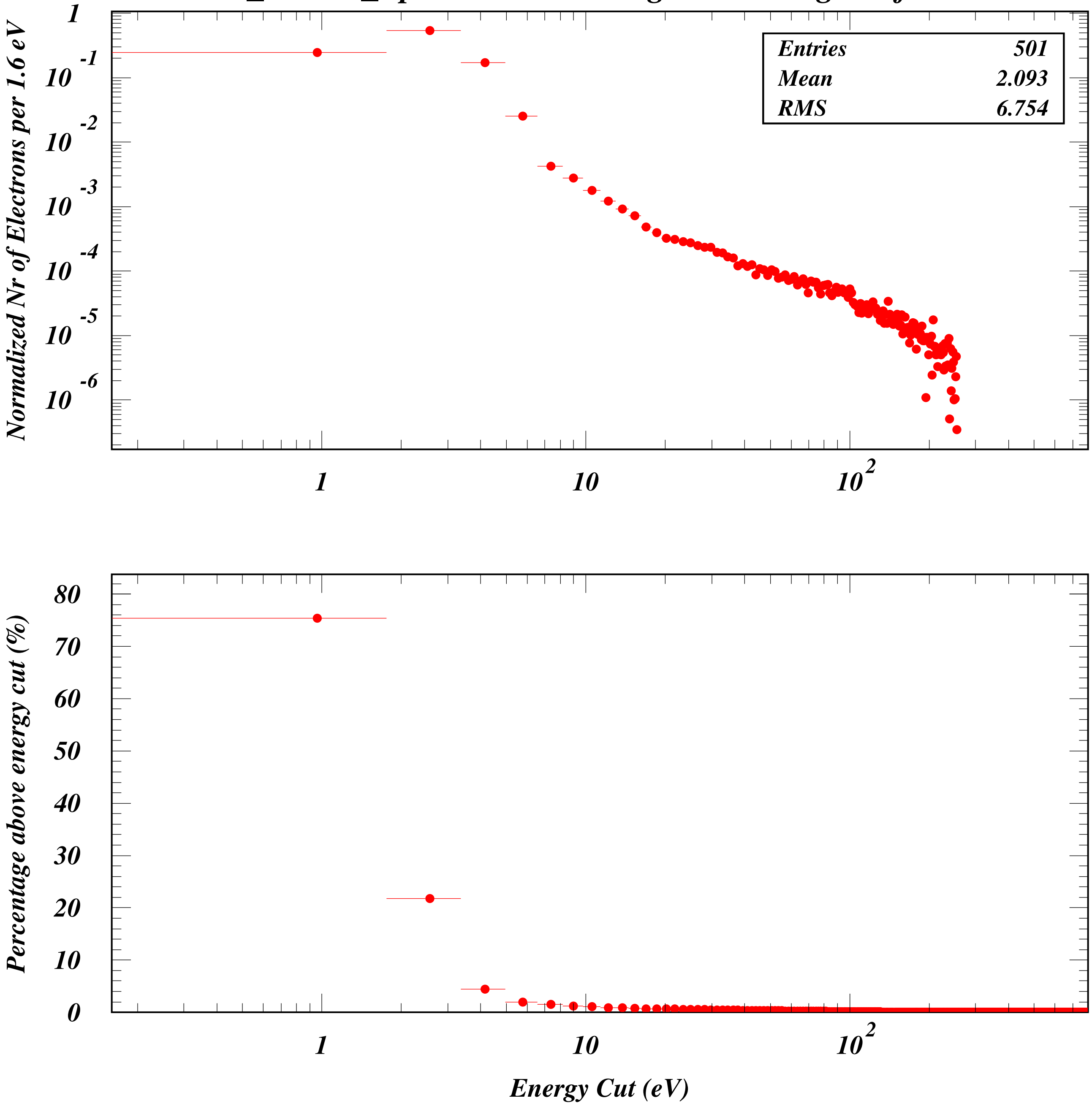
No energy cut: 2859 macroparticles, 915305728 e-



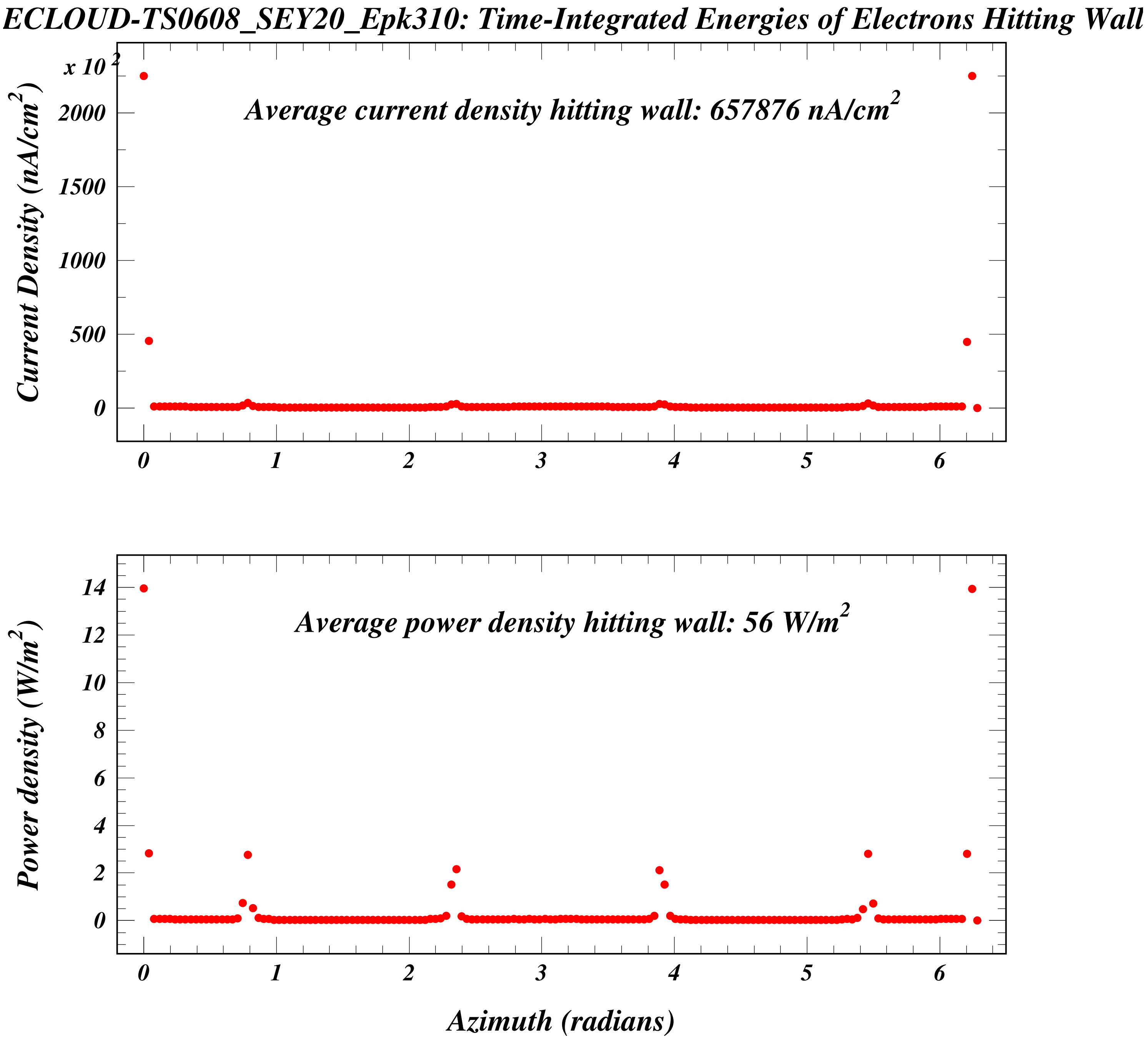
E_{kin}>10 eV: 1995 macroparticles, 772921152 e-

10/03/17 09.47

ECLOUD-TS0608_SEY20_Epk310: Time-Integrated Energies of Electrons Hitting Wall

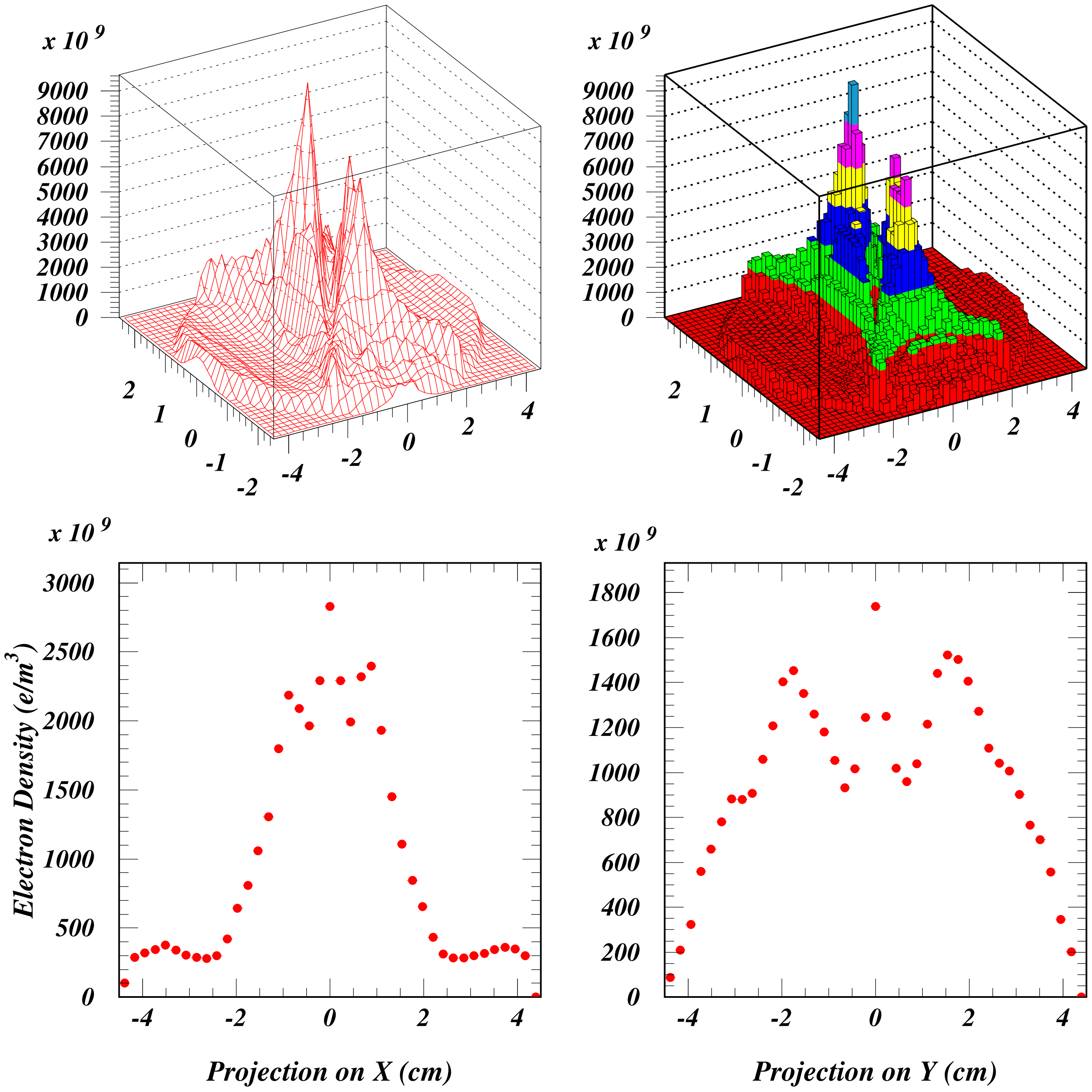


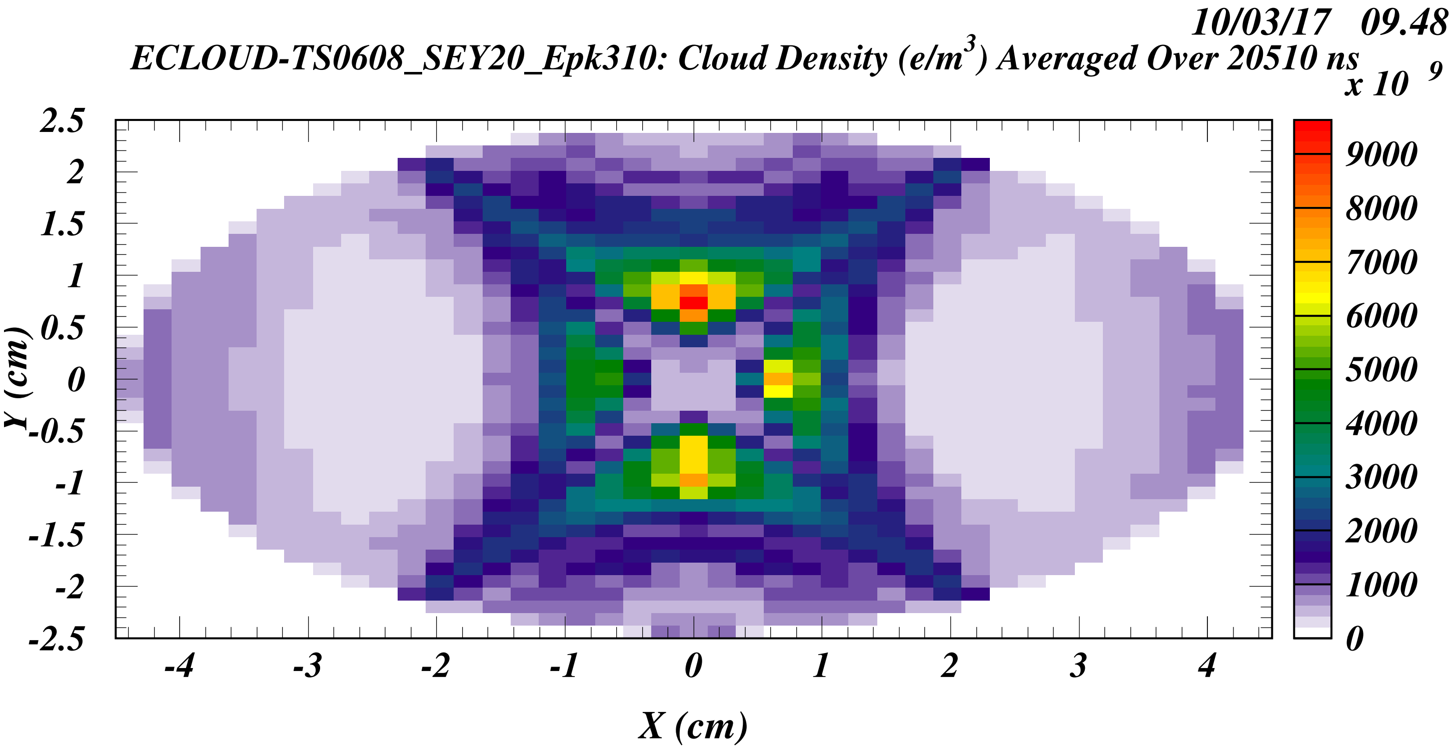
10/03/17 09.47


ECLOUD-TS0608_SEY20_Epk310: Time-Integrated Energies of Electrons Hitting Wall
x 10^2
Current Density (nA/cm^2)
Average current density hitting wall: 657876 nA/cm^2
0
500
1000
1500
2000
0
1
2
3
4
5
6
Power density (W/m^2)
Average power density hitting wall: 56 W/m^2
0
2
4
6
8
10
12
14
Azimuth (radians)

10/03/17 09.48

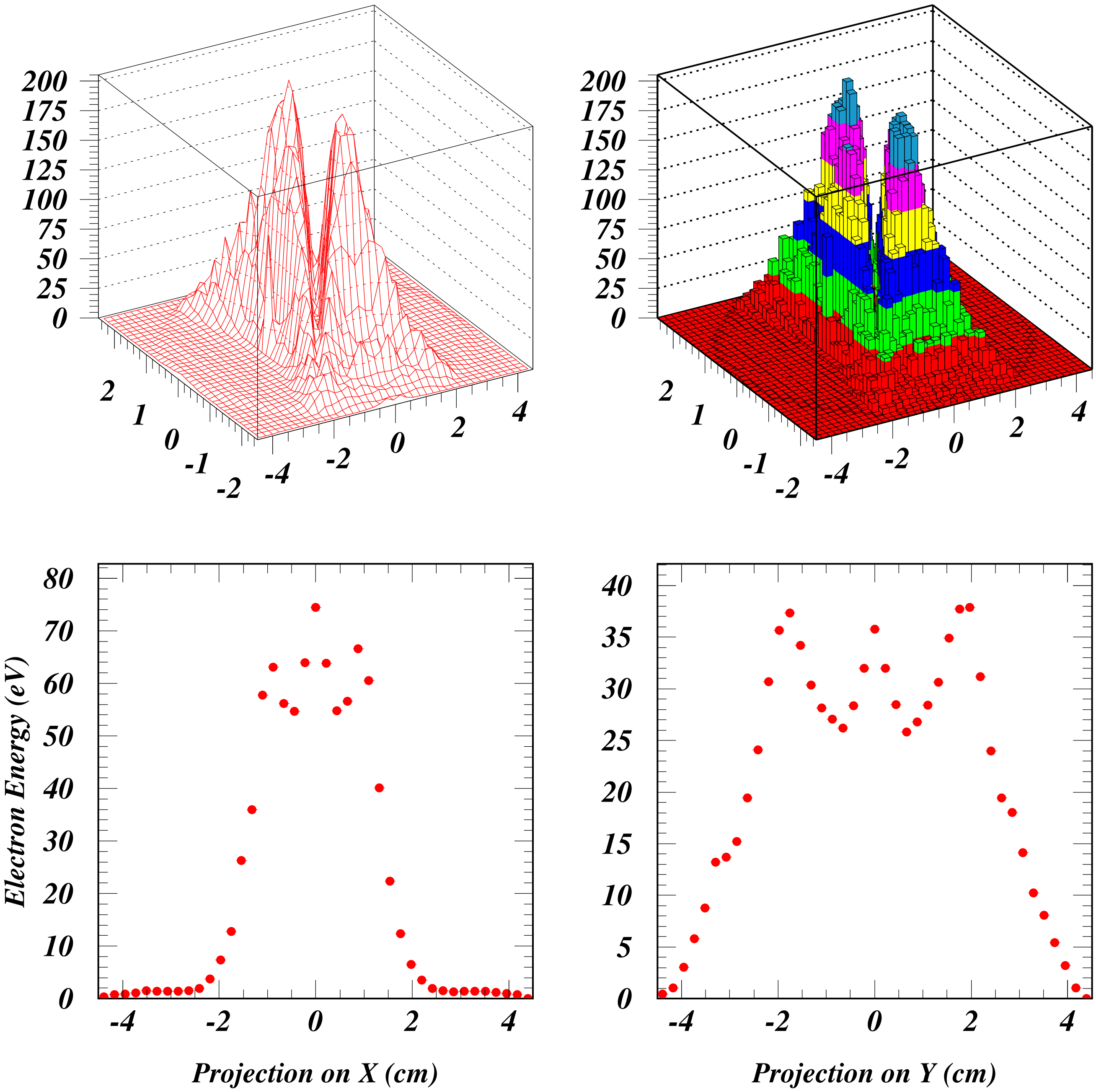
ECLOUD-TS0608_SEY20_Epk310: Cloud Density (e/m^3) Averaged Over 20510 ns

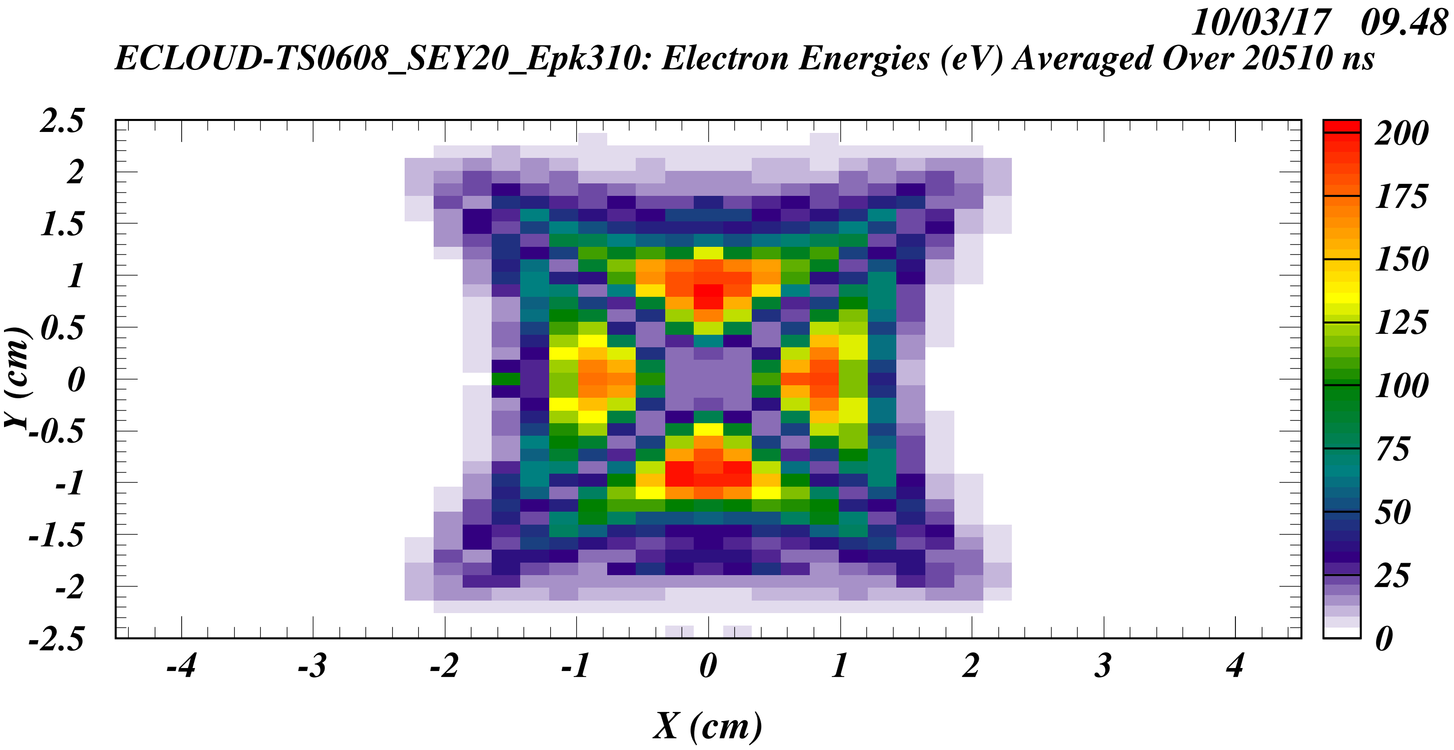



10/03/17 09.48
ECLOUD-TS0608_SEY20_Epk310: Cloud Density (e/m^3) Averaged Over 20510 ns
x 10^9
Y (cm)
X (cm)
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-4
-3
-2
-1
0
1
2
3
4
9000
8000
7000
6000
5000
4000
3000
2000
1000
0

10/03/17 09.48

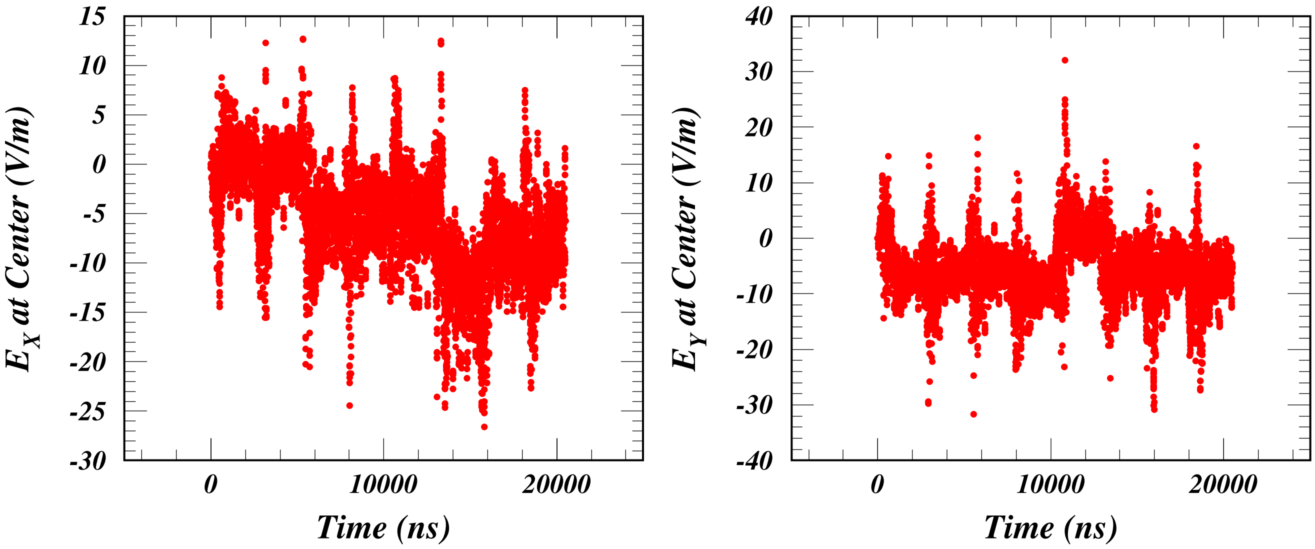
ECLOUD-TS0608_SEY20_Epk310: Electron Energies (eV) Averaged Over 20510 ns





10/03/17 09.48
ECLOUD-TS0608_SEY20_Epk310: Electron Energies (eV) Averaged Over 20510 ns
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
Y (cm)
-4
-3
-2
-1
0
1
2
3
4
X (cm)
200
175
150
125
100
75
50
25
0

ECLOUD-TS0608_SEY20_Epk310: Electric Field at Beam



ECLOUD-TS0608_SEY20_Epk310Electric Field Gradients at Beam