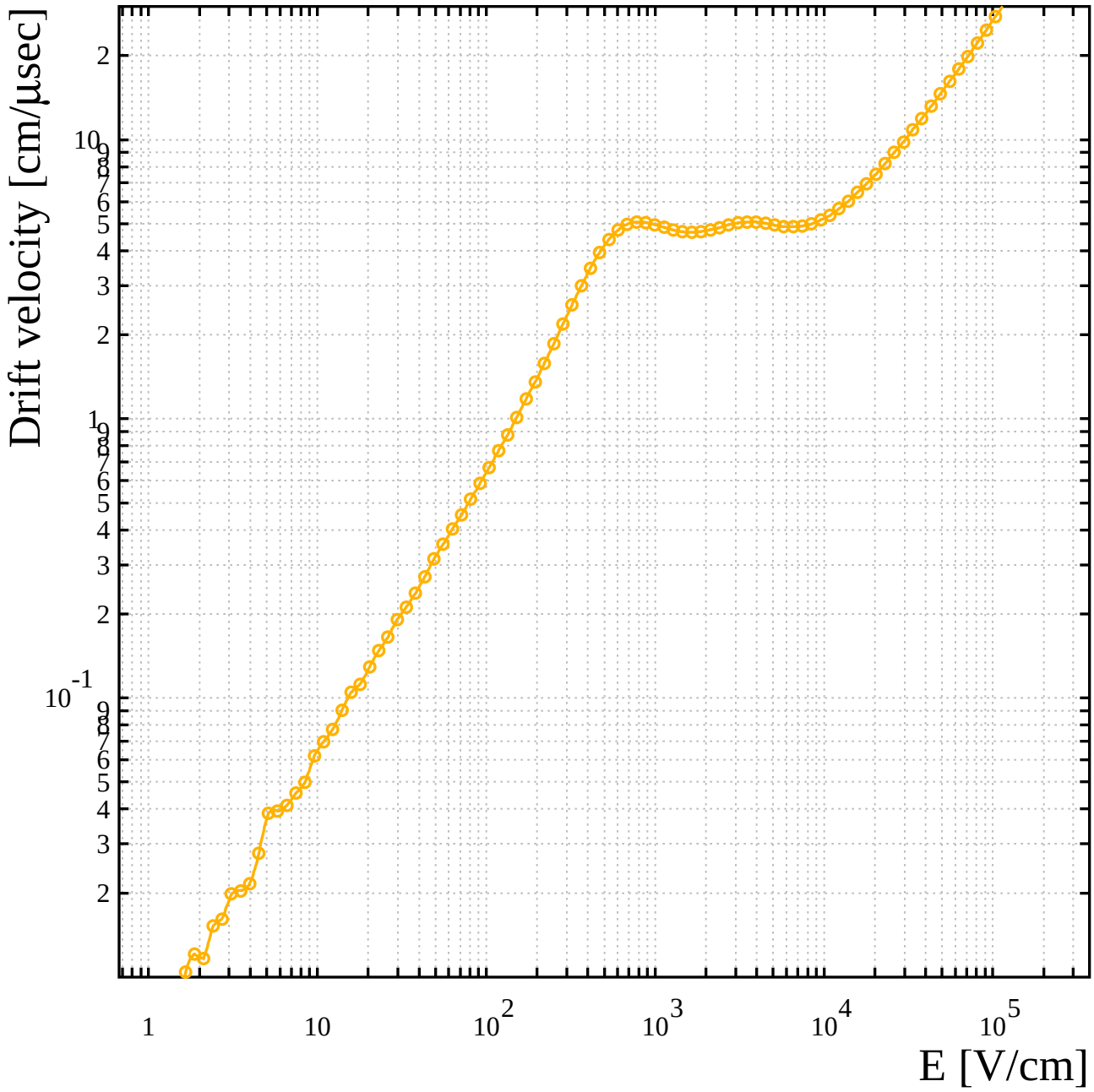
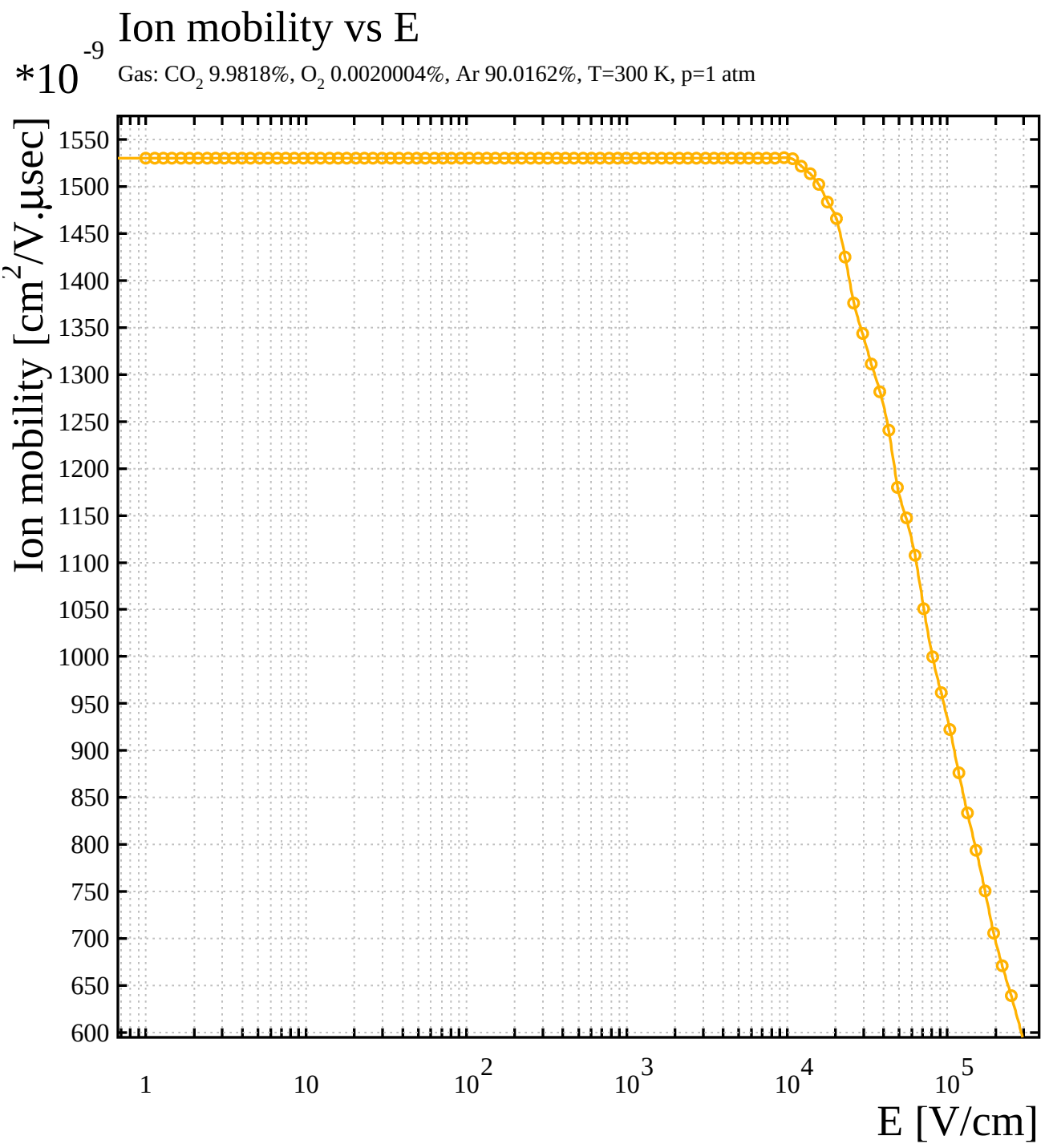
Drift velocity vs E

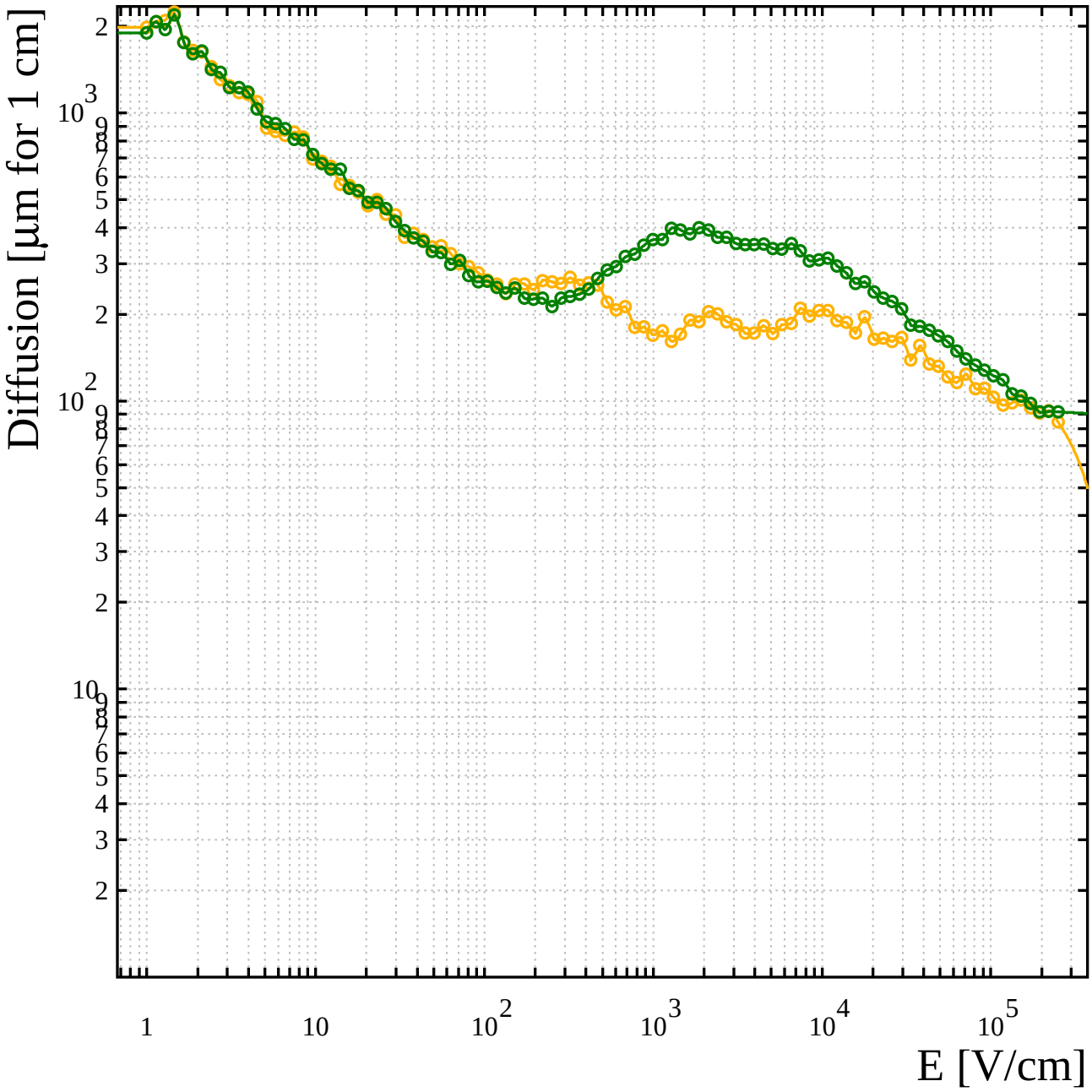
Gas: CO_2 9.9818%, O_2 0.0020004%, Ar 90.0162%, T=300 K, p=1 atm




Ion mobility vs E
Gas: CO2 9.9818%, O2 0.0020004%, Ar 90.0162%, T=300 K, p=1 atm
*10-9
Ion mobility [cm2/V.µsec]
1550
1500
1450
1400
1350
1300
1250
1200
1150
1100
1050
1000
950
900
850
800
750
700
650
600
1
10
10^2
10^3
10^4
10^5
E [V/cm]

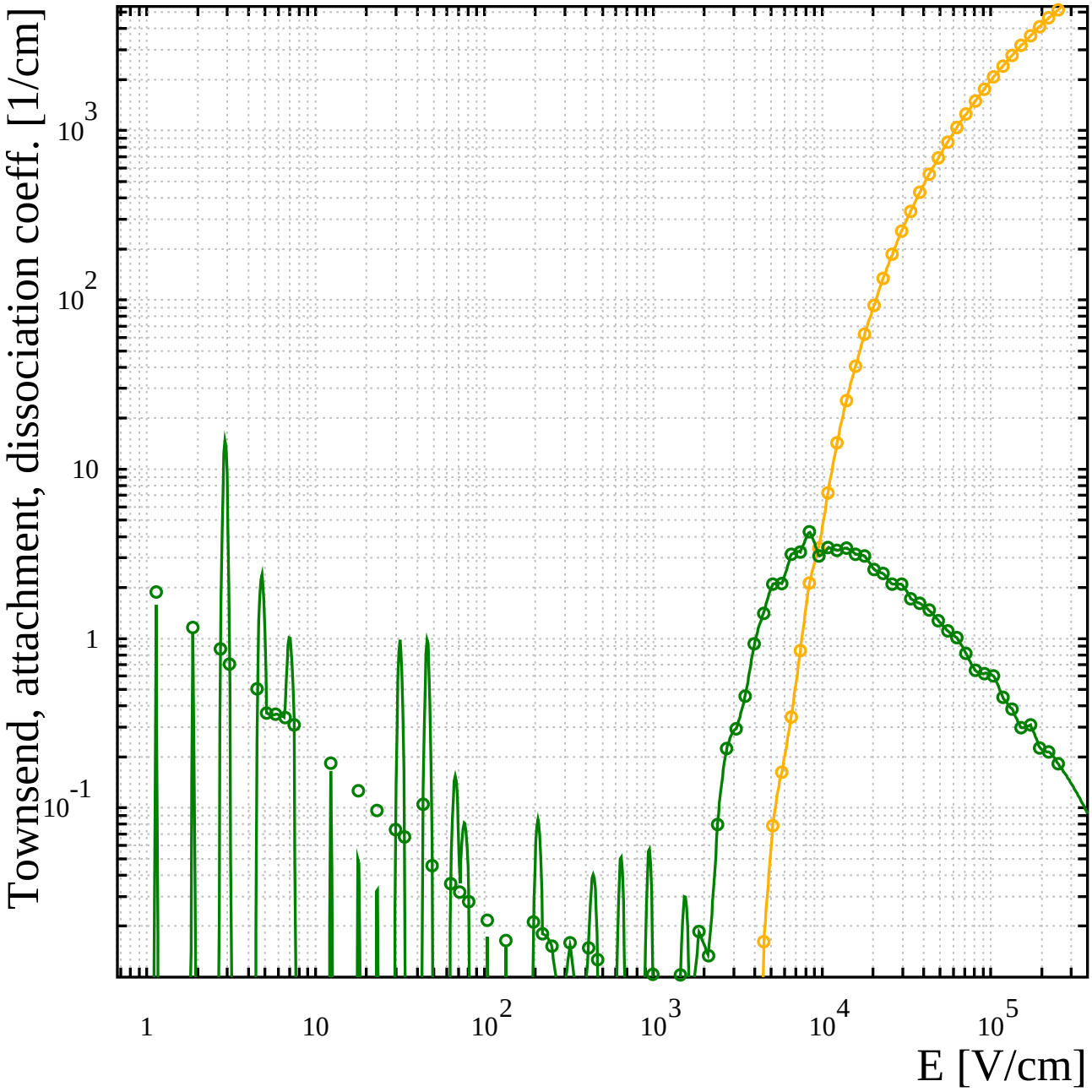
Diffusion coefficients vs E

Gas: CO_2 9.9818%, O_2 0.0020004%, Ar 90.0162%, T=300 K, p=1 atm



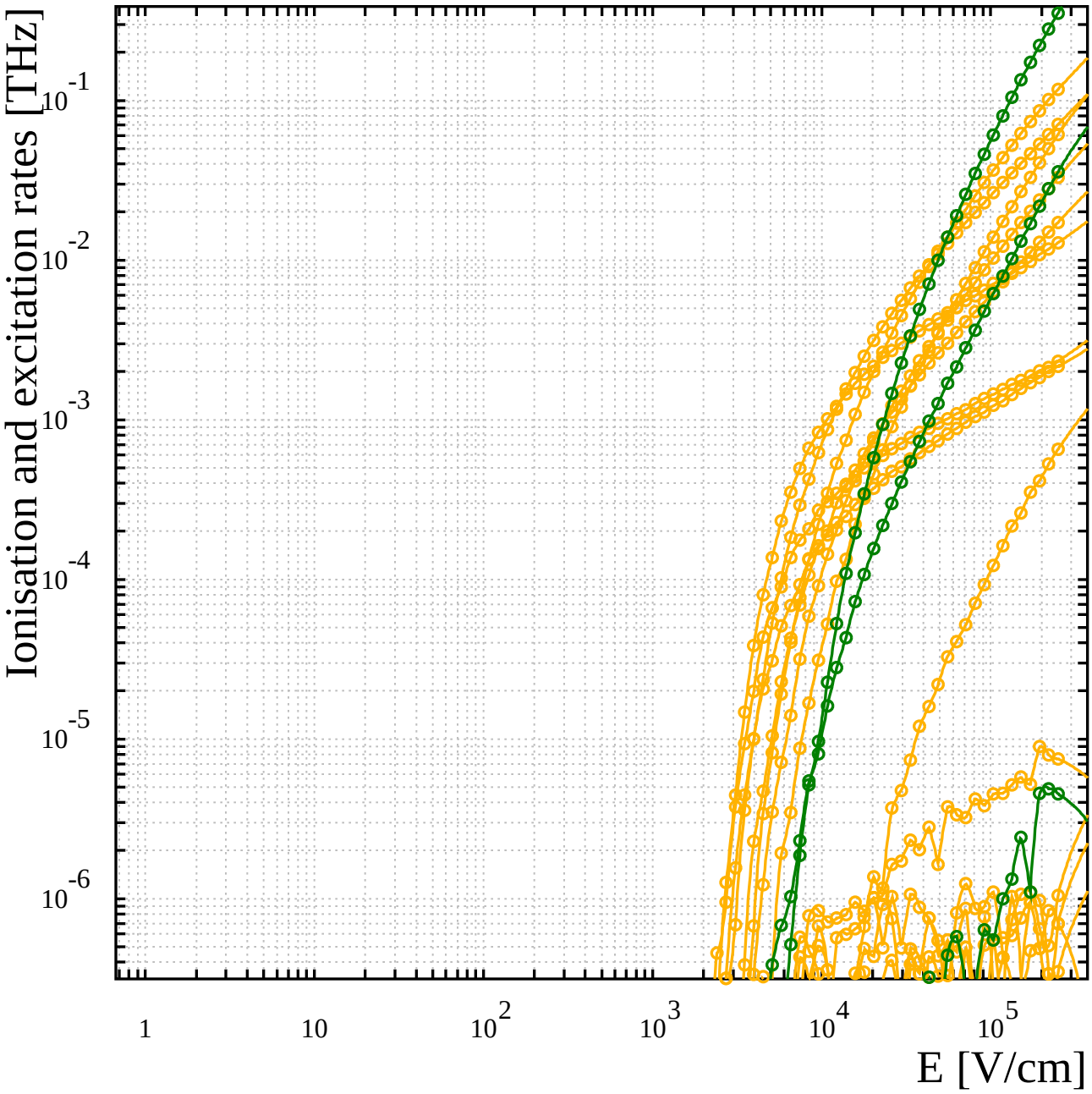
Townsend, attachment, dissociation coeff. vs E

Gas: CO_2 9.9818%, O_2 0.0020004%, Ar 90.0162%, T=300 K, p=1 atm

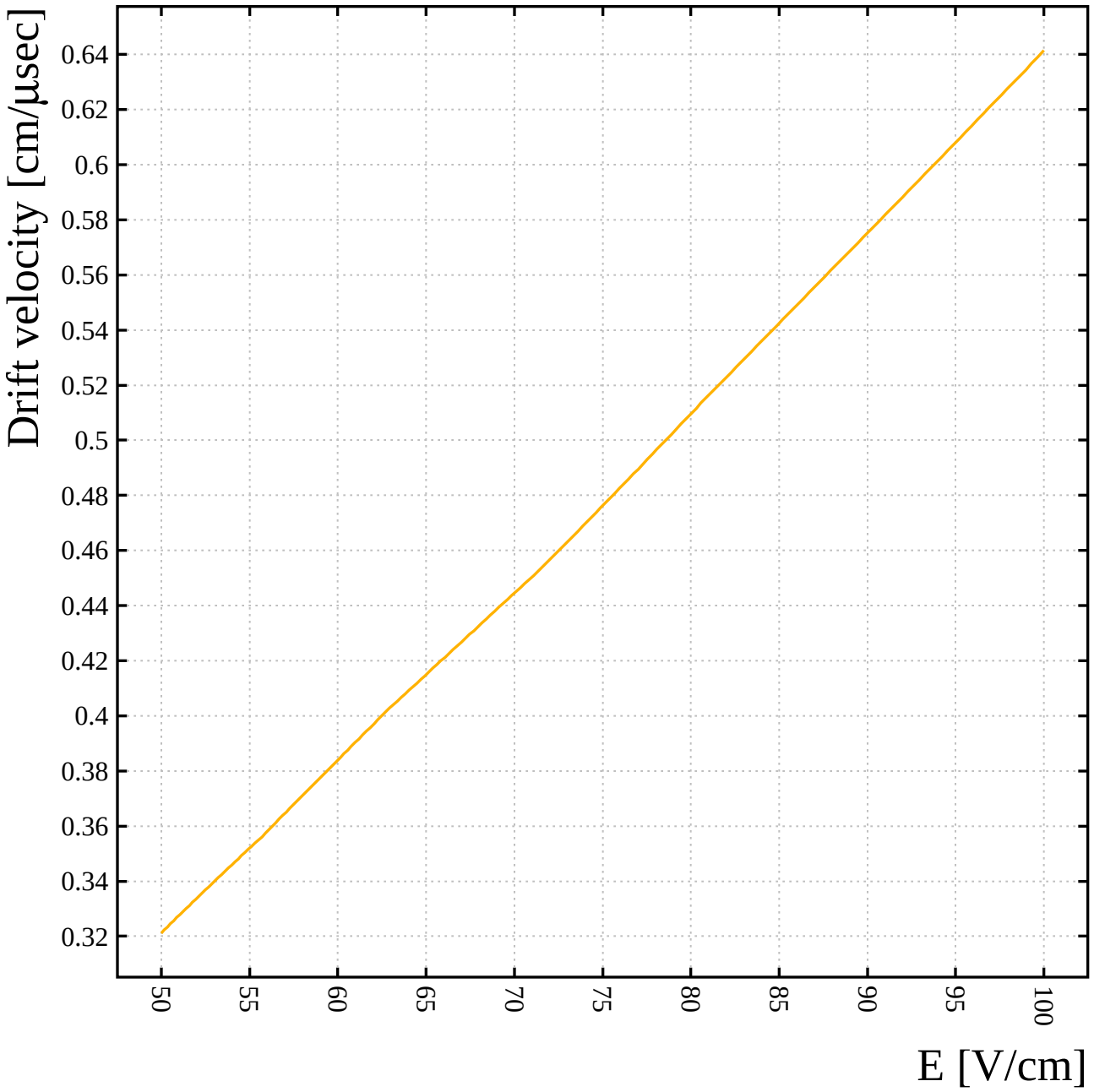


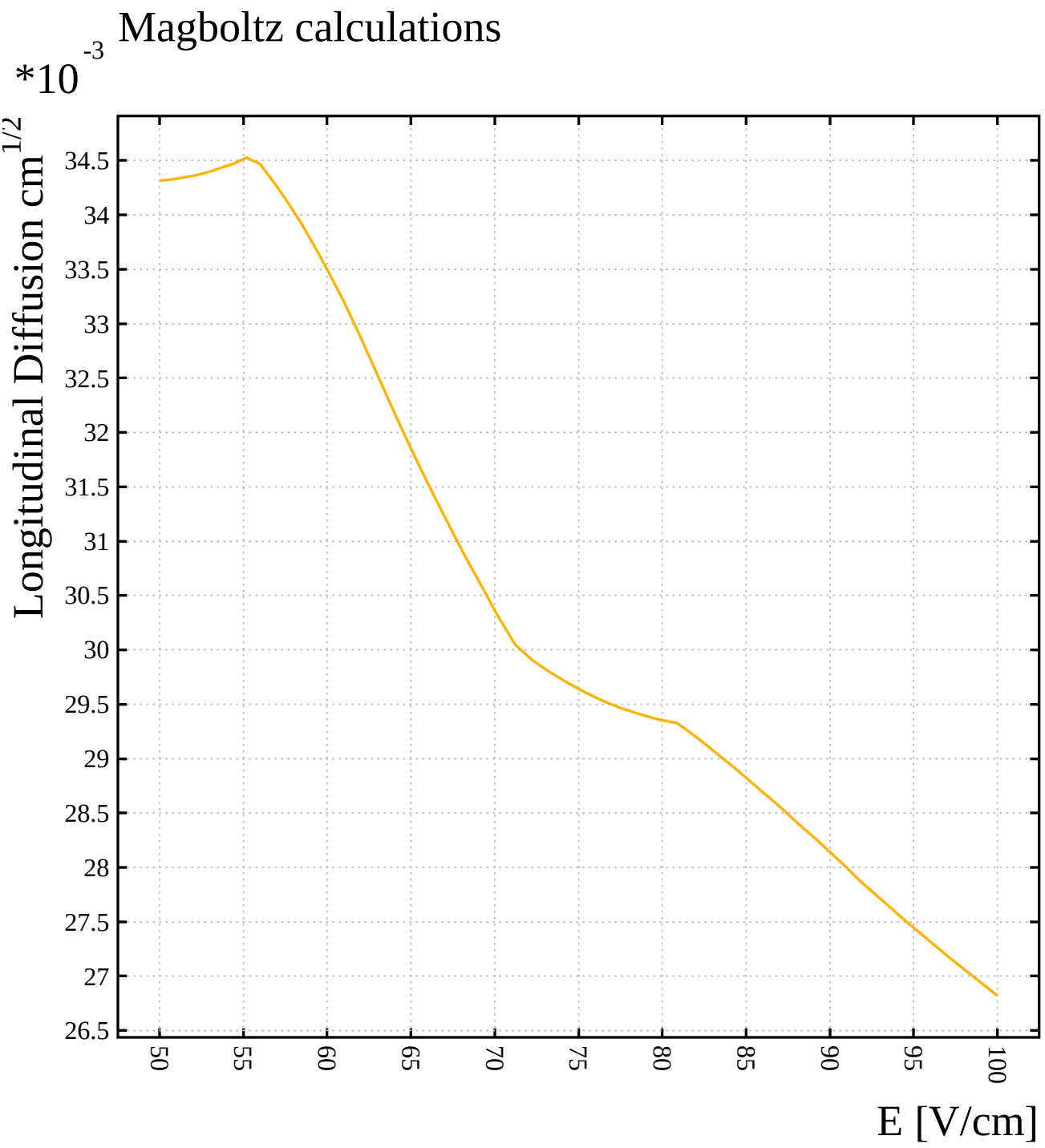
Ionisation and excitation rates

Gas: CO_2 9.9818%, O_2 0.0020004%, Ar 90.0162%, T=300 K, p=1 atm

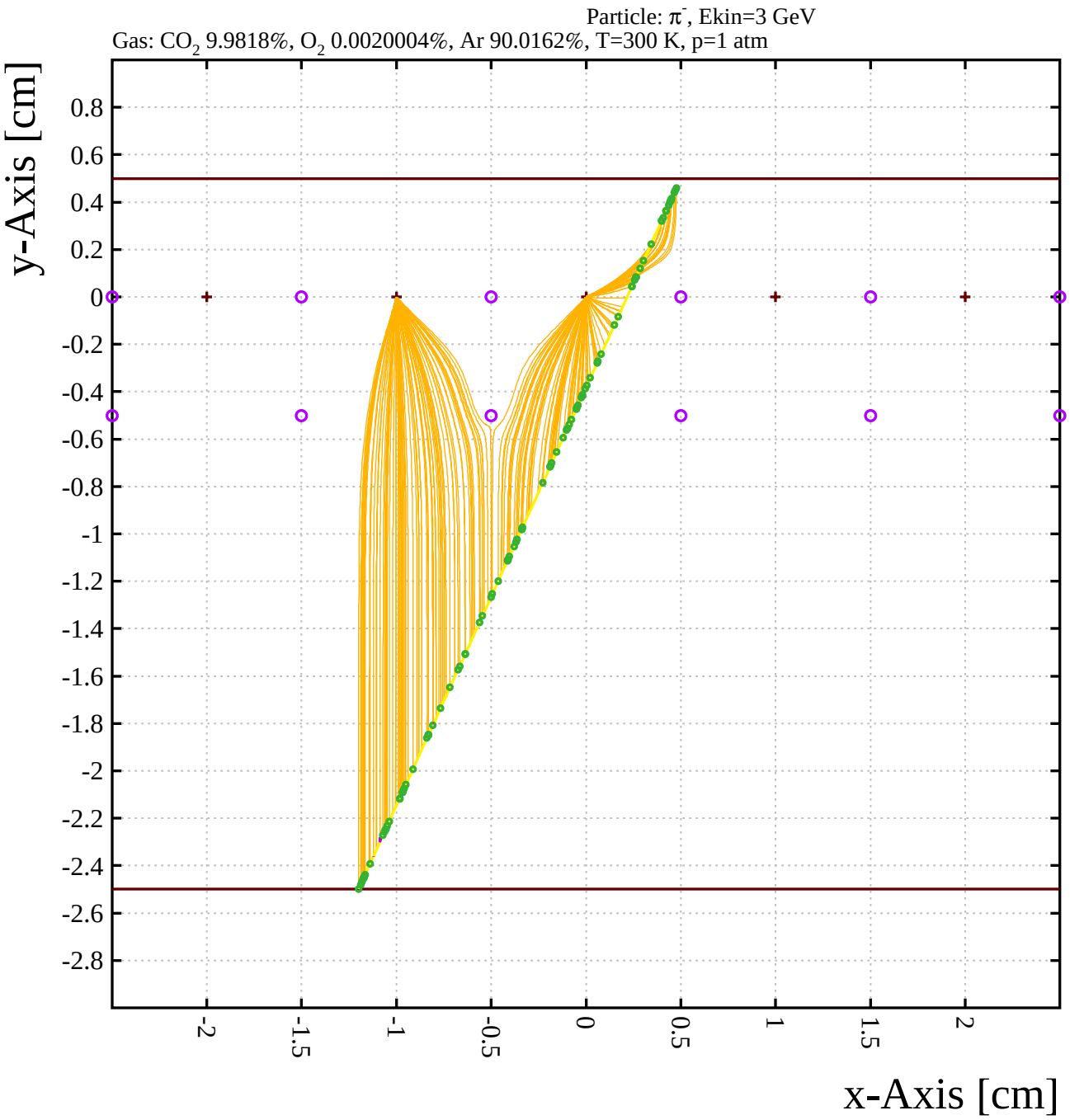


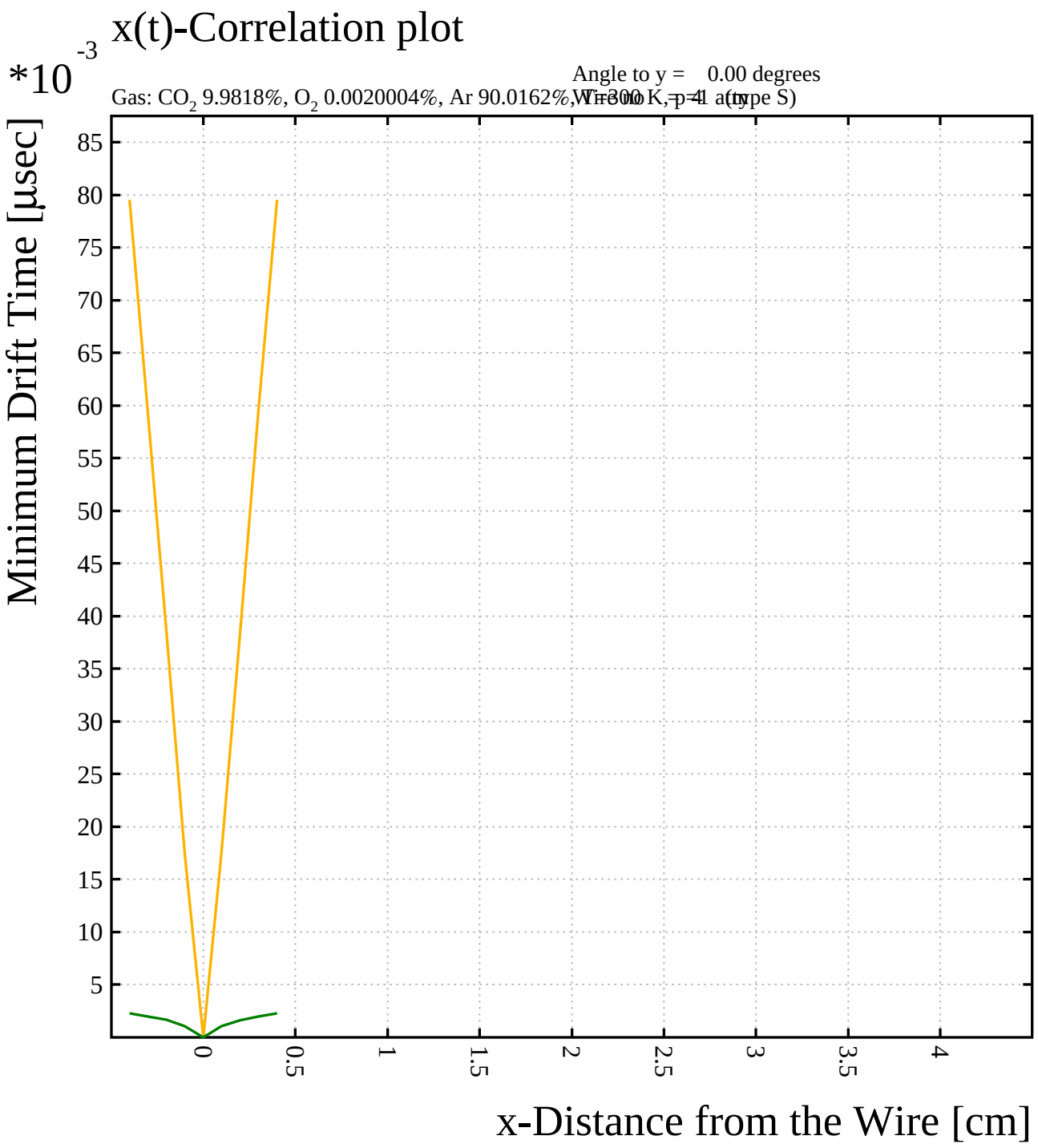
Magboltz calculations

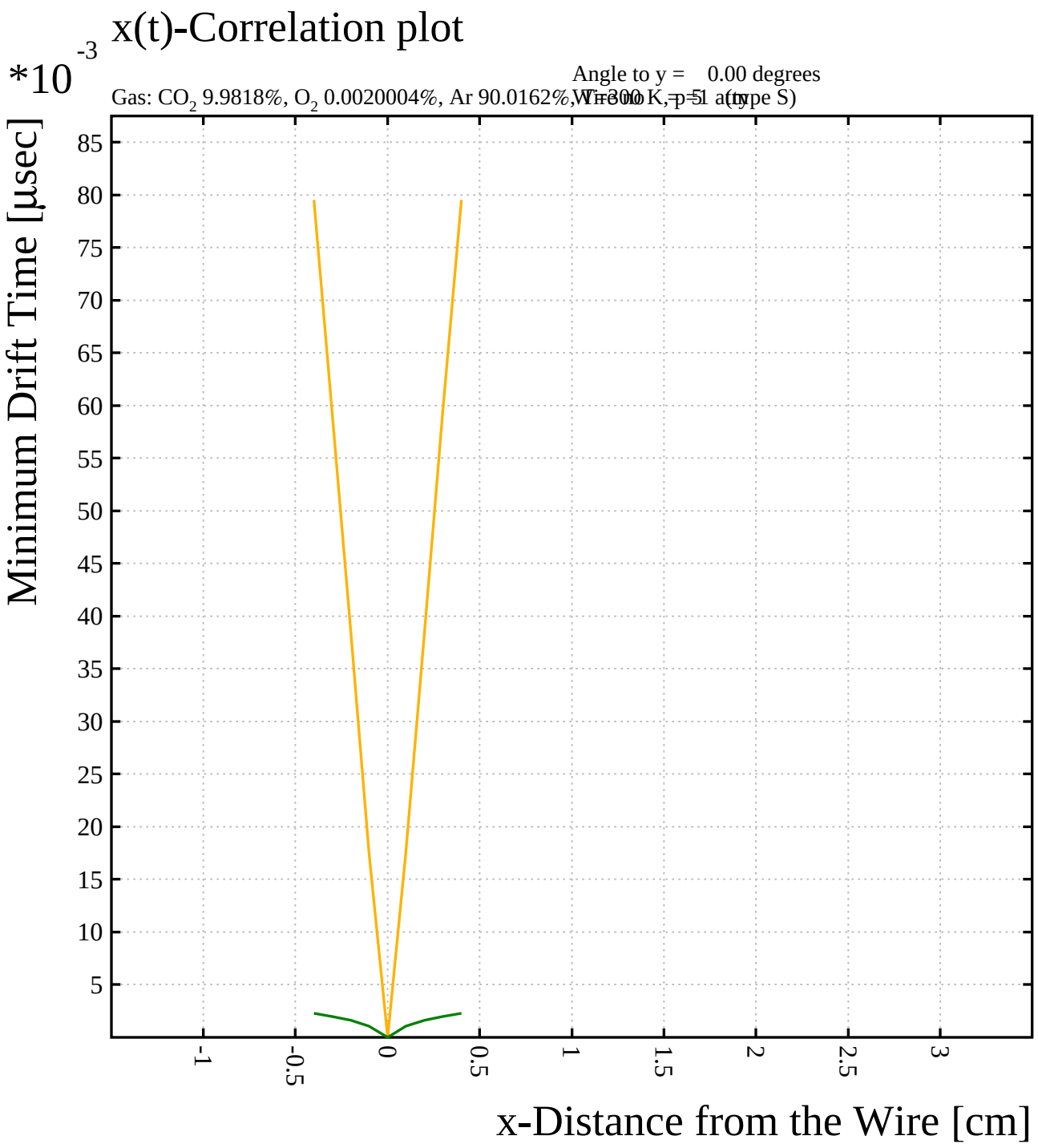


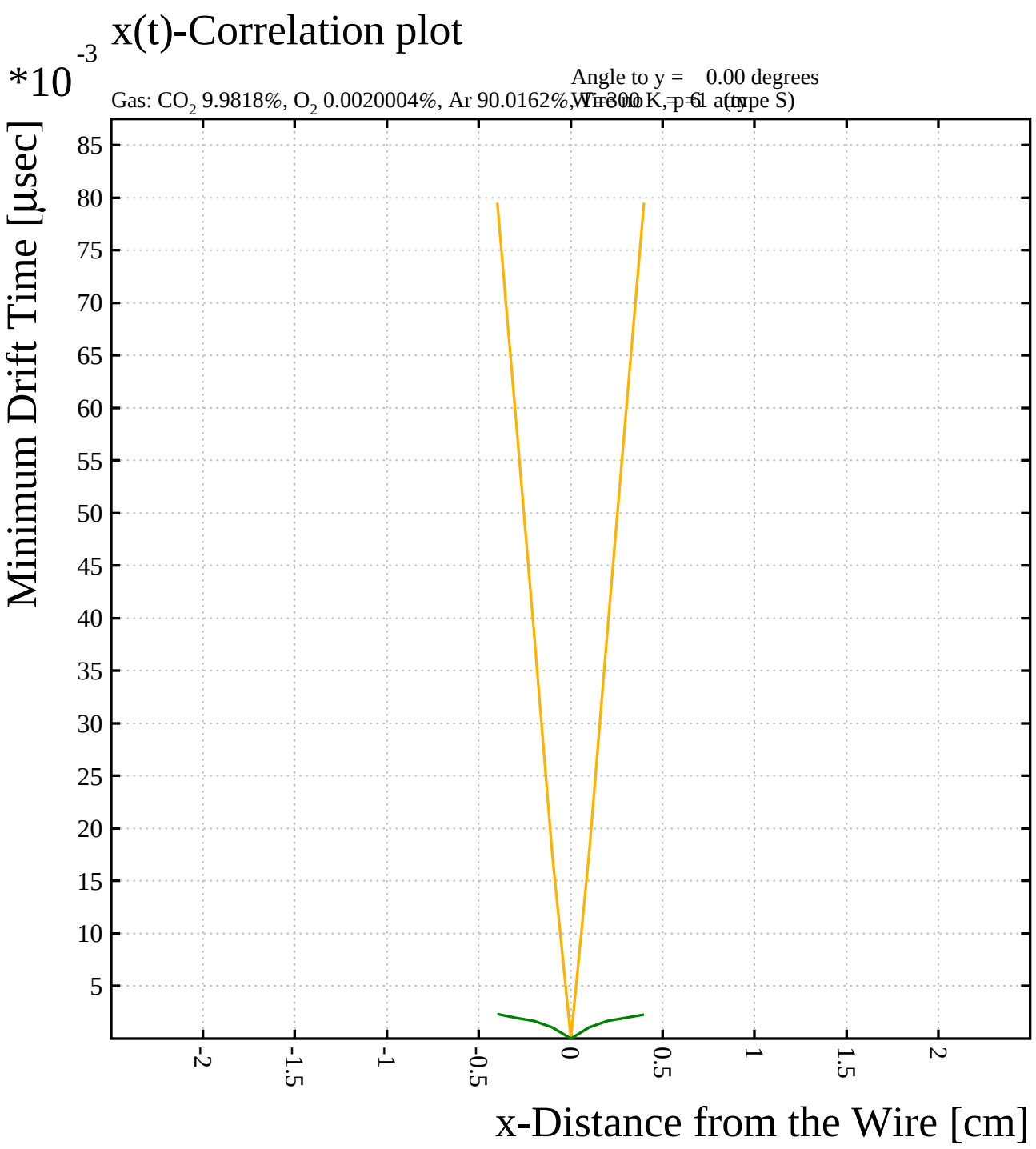

Magboltz calculations
*10^-3
Longitudinal Diffusion cm^1/2
34.5
34
33.5
33
32.5
32
31.5
31
30.5
30
29.5
29
28.5
28
27.5
27
26.5
50
55
60
65
70
75
80
85
90
95
100
E [V/cm]

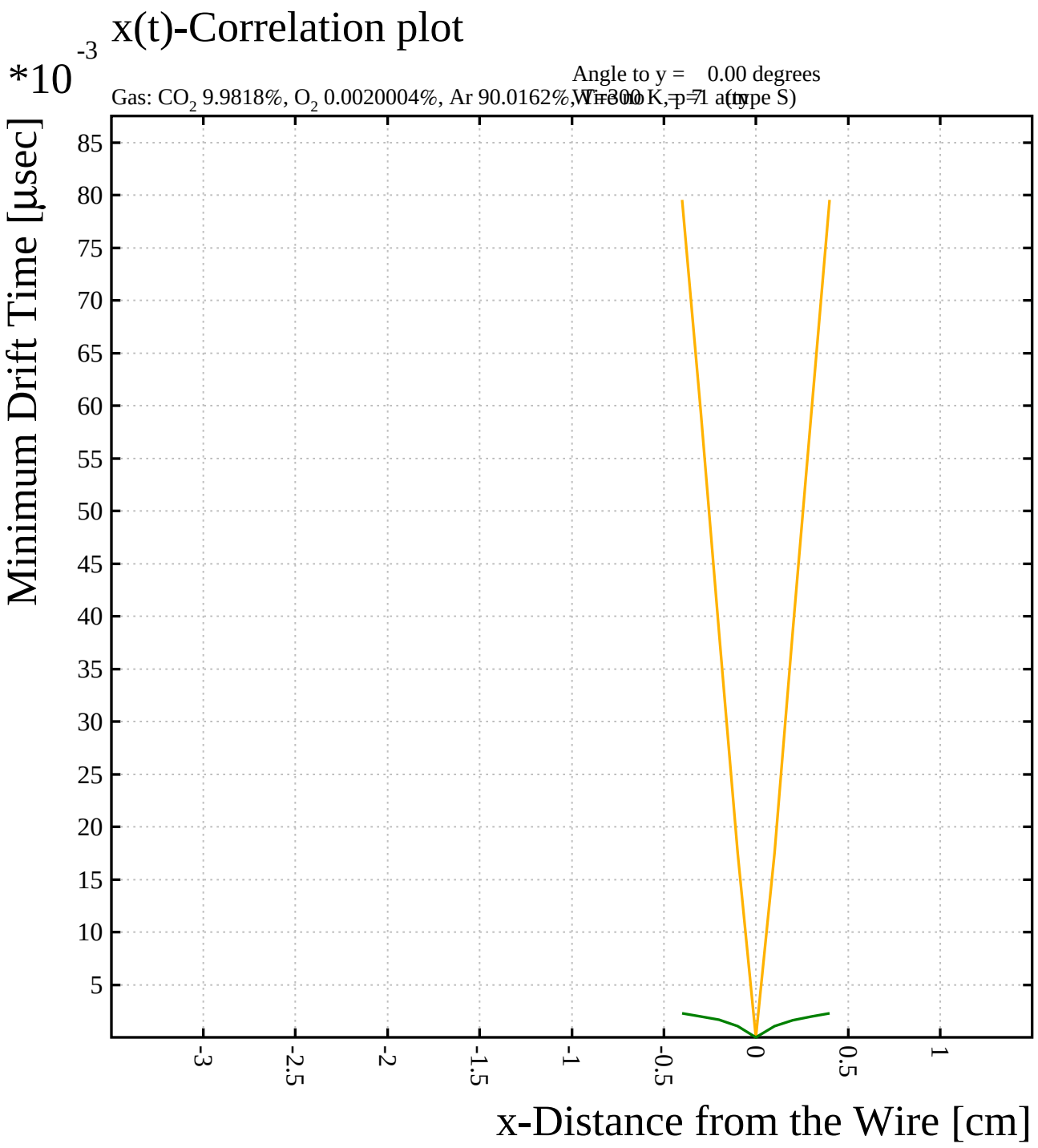
Electron drift lines from a track

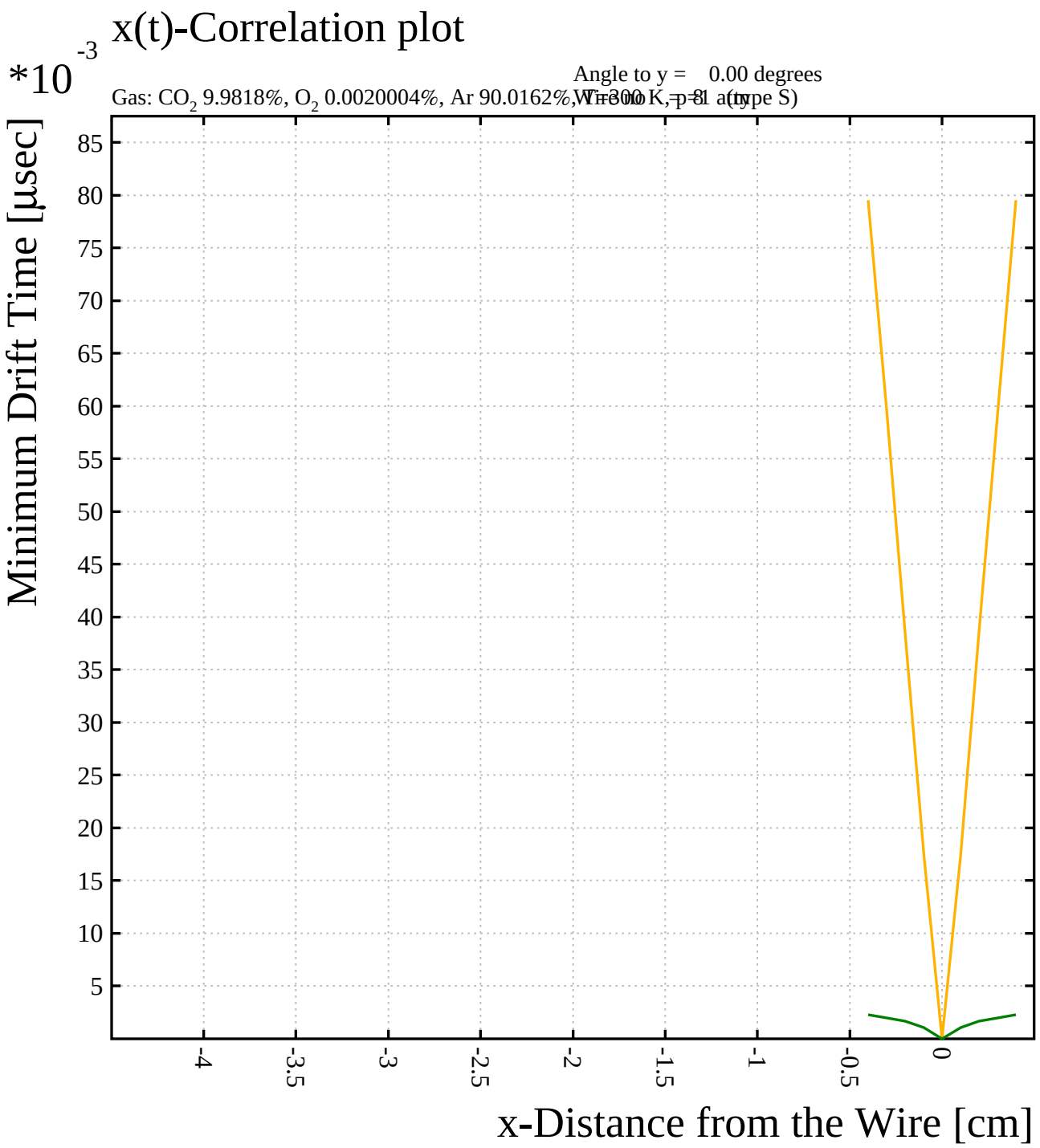



x(t)-Correlation plot
Angle to y = 0.00 degrees
Gas: CO2 9.9818%, O2 0.0020004%, Ar 90.0162%, T = 300 K, p = 1 atm (type S)
*10-3
Minimum Drift Time [µsec]
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
0.5
1
1.5
2
2.5
3
3.5
4
x-Distance from the Wire [cm]


x(t)-Correlation plot
Angle to y = 0.00 degrees
Gas: CO2 9.9818%, O2 0.0020004%, Ar 90.0162%, T = 300 K, p = 1 atm (type S)
*10-3
Minimum Drift Time [µsec]
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
-1
-0.5
0
0.5
1
1.5
2
2.5
3
x-Distance from the Wire [cm]


x(t)-Correlation plot
Angle to y = 0.00 degrees
Gas: CO2 9.9818%, O2 0.0020004%, Ar 90.0162%, T = 300 K, p = 1 atm
Wire no. 61 (type S)
*10-3
Minimum Drift Time [µsec]
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2
x-Distance from the Wire [cm]


x(t)-Correlation plot
Angle to y = 0.00 degrees
Gas: CO2 9.9818%, O2 0.0020004%, Ar 90.0162%, T = 300 K, p = 1 atm (type S)
*10-3
Minimum Drift Time [µsec]
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
-3
-2.5
-2
-1.5
-1
-0.5
0
0.5
1
x-Distance from the Wire [cm]


x(t)-Correlation plot
Angle to y = 0.00 degrees
Gas: CO2 9.9818%, O2 0.0020004%, Ar 90.0162%, T = 300 K, p = 1 atm (type S)
*10-3
Minimum Drift Time [µsec]
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
-4
-3.5
-3
-2.5
-2
-1.5
-1
-0.5
0
x-Distance from the Wire [cm]