

It is first results of software simulation using GAFFIELD program.

### Part 1

Planes:  $x = -2.25$  cm,  $x = 2.25$  cm,  $y = -2.0$  cm,  $y = 2.0$  cm.

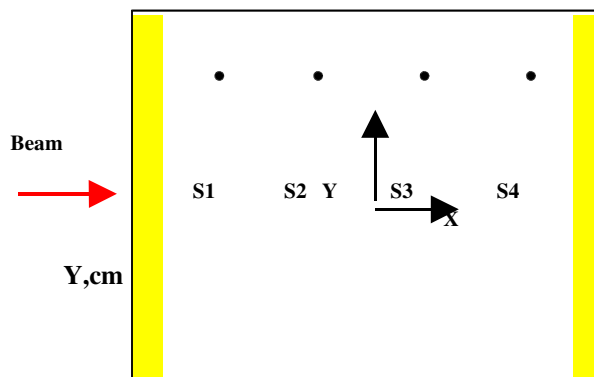
Dielectricum (position (x begin,x end)):  $x(-2.25,-2.0)$ ,  $x(2.0,2.25)$

Anodes wires (name wire Sx, position wire (x,y), wire voltage  $U_{sx}$ , wire diameter):

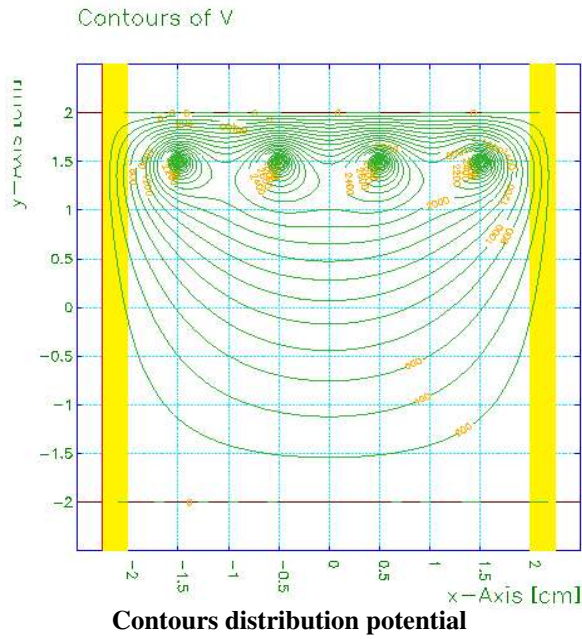
S1(-1.5,1.5), S2(-0.5,1.5), S3(0.5,1.5), S4(1.5,1.5)

$U_{s1} = U_{s2} = U_{s3} = U_{s4} = 9000$  V,

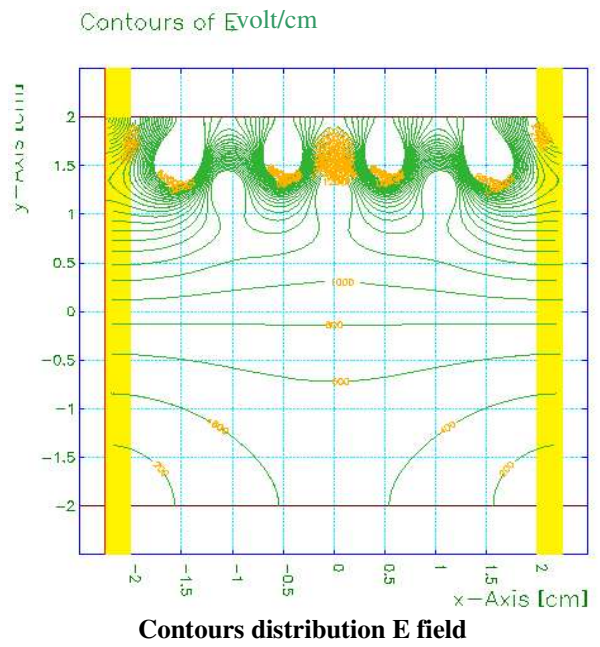
diameter = 0.0020 cm



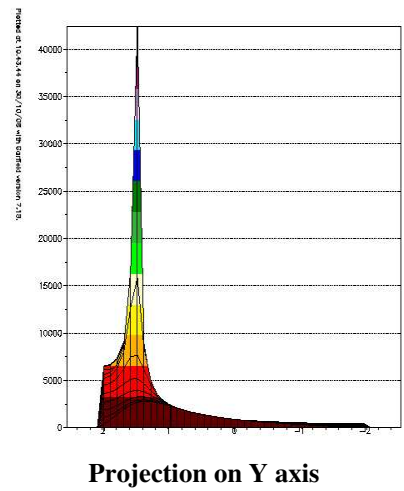
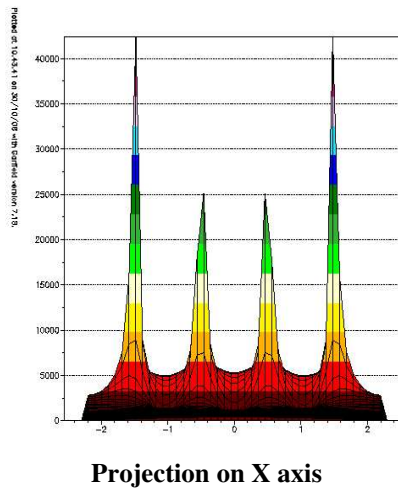
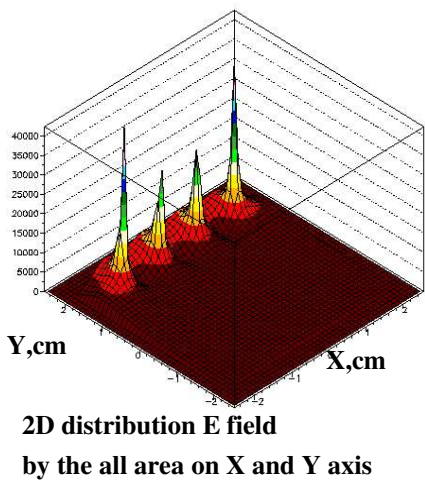
,volt



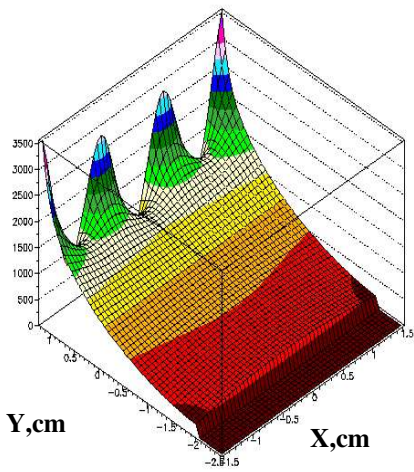
Printed at 10:43:39 on 20/10/08 with Gnuplot version 2.18.



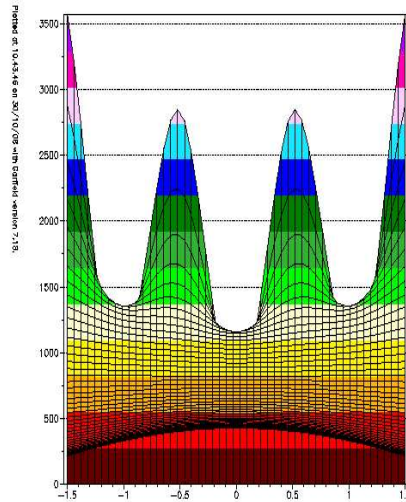
Printed at 10:43:39 on 20/10/08 with Gnuplot version 2.18.



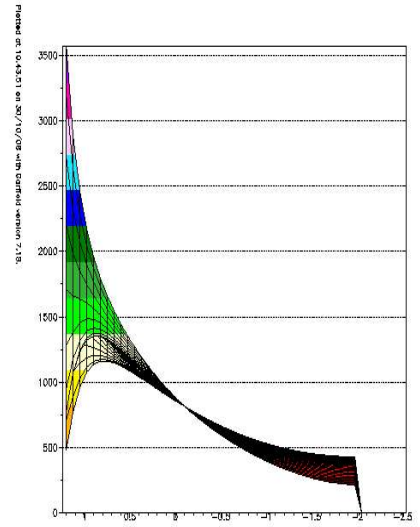
Printed at 10:43:43 on 20/10/08 with Gnuplot version 2.18.



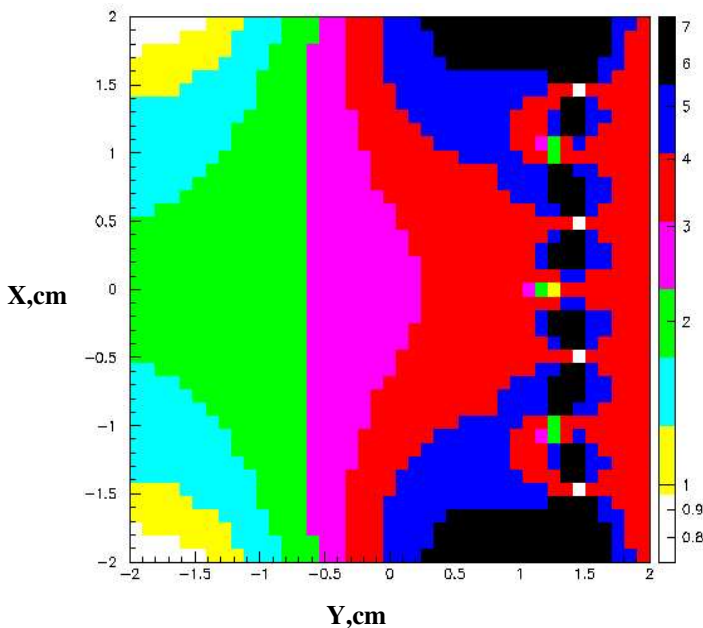
**2D distribution E field  
in area X(-1.5:1.5), Y(-2.5:1.1)**



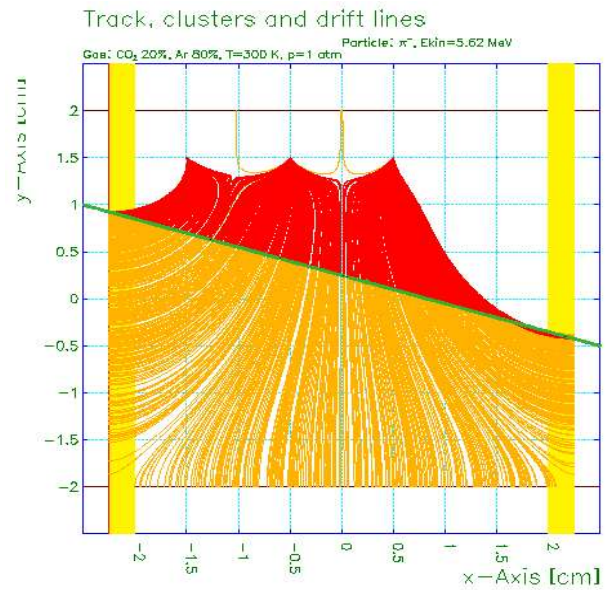
**Projection on X axis**



**Projection on Y axis**



**2D distribution electrons drift velocity  
in area X(-2.0:2.0), Y(-2.0:2.0)**



**Track, Clusters(green), Electrons drift lines  
(red), Ions drift lines (brown)**

## Part 2

Planes:  $x = -2.25$  cm,  $x = 2.25$  cm,  $y = -2.0$  cm,  $y = 2.0$  cm.

Dielectricum (position (x begin,x end)):  $x(-2.25,-2.0)$ ,  $x(2.0,2.25)$

Anodes wires (name wire Sx, position wire (x,y), wire voltage  $U_{sx}$ , wire diameter):

S1(-1.5,1.5), S2(-0.5,1.5), S3(0.5,1.5), S4(1.5,1.5)

$U_{s1} = U_{s2} = U_{s3} = U_{s4} = 9000$  V

diameter = 0.0020 cm

Field wires (name wire Cx, position wire (x,y), wire voltage  $U_{cx}$ , wire diameter):

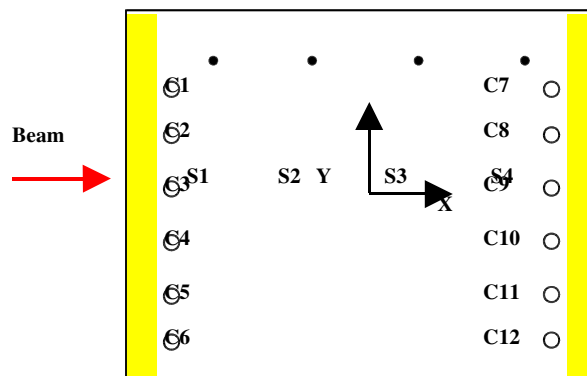
C1(-1.9,1.0), C2(-1.9,0.5), C3(-1.9,0.0), C4(-1.9,0.5), C5(-1.9,1.0), C6(-1.9,1.5)

C7(1.9,1.0), C8(1.9,0.5), C9(1.9,0.0), C10(1.9,0.5), C11(1.9,1.0), C12(1.9,1.5)

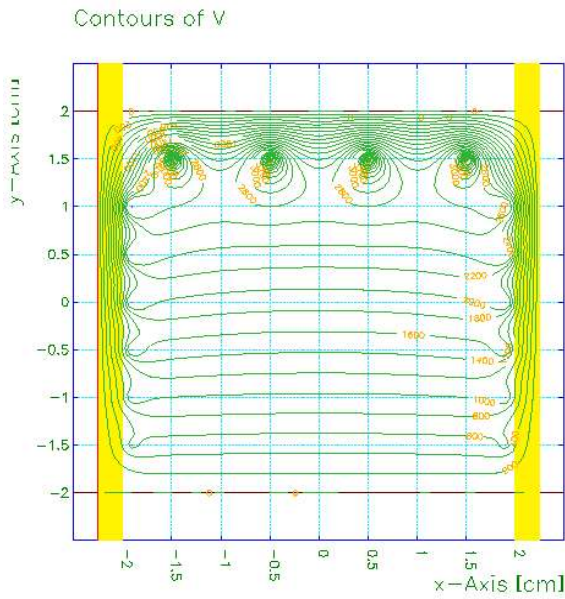
$U_{c1} = U_{c7} = 5200$  V,  $U_{c2} = U_{c8} = 4200$  V,  $U_{c3} = U_{c9} = 3300$  V,

$U_{c4} = U_{c9} = 2600$  V,  $U_{c5} = U_{c10} = 1600$  V,  $U_{c6} = U_{c12} = 900$  V

diameter = 0.0100 cm

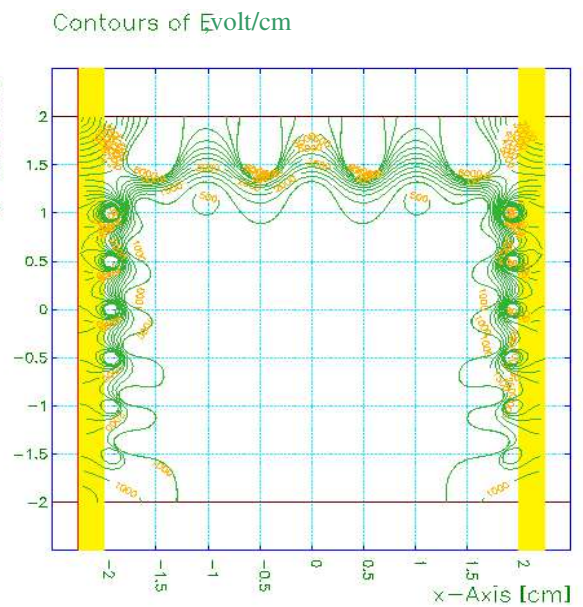


,volt



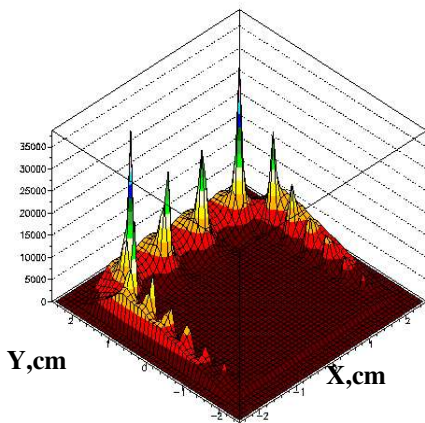
Contours distribution potential

Printed at 09:22:47 on 30/10/09 with Gnuplot version 3.18.

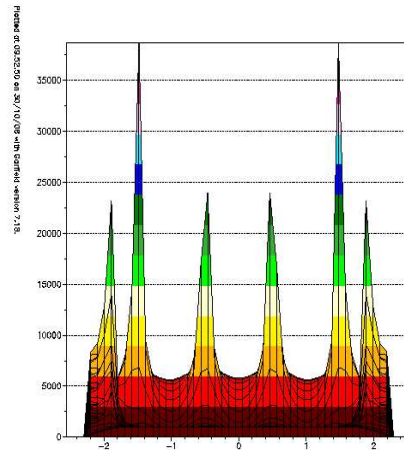


Contours distribution E field

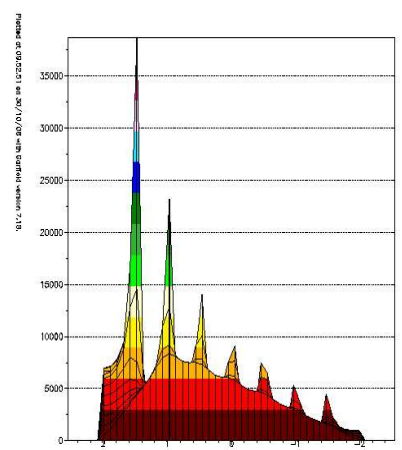
Printed at 09:22:47 on 30/10/09 with Gnuplot version 3.18.



2D distribution E field by the all area on X and Y axis



Projection on X axis

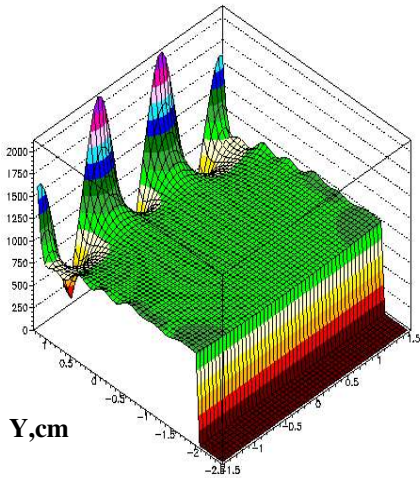


Projection on Y axis

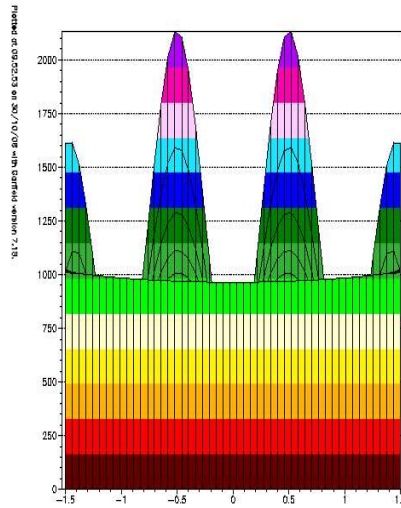
Printed at 09:22:51 on 30/10/09 with Gnuplot version 3.18.

Printed at 09:22:51 on 30/10/09 with Gnuplot version 3.18.

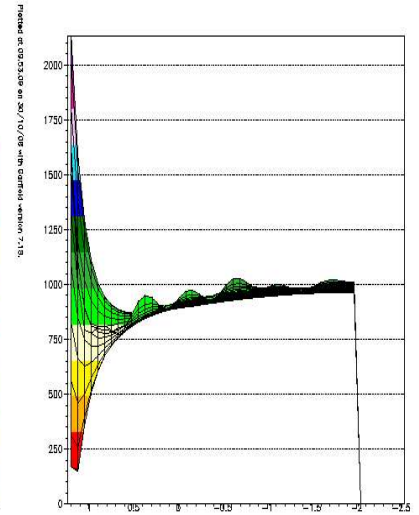
Printed at 09:22:51 on 30/10/09 with Gnuplot version 3.18.



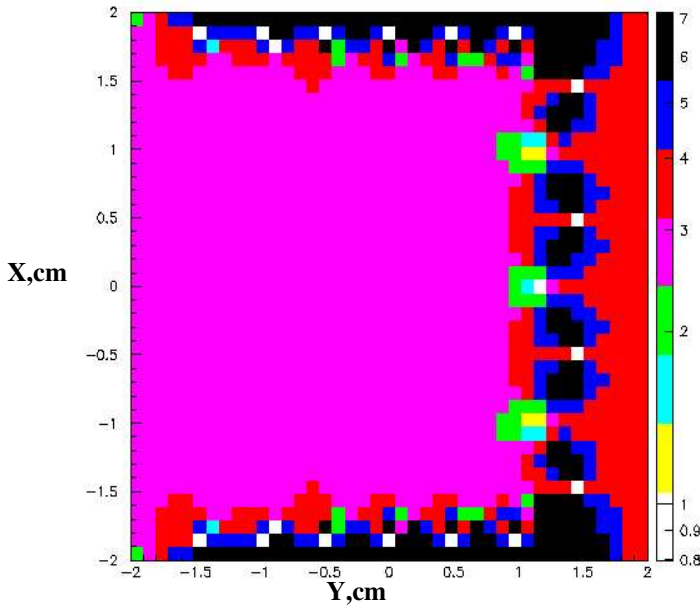
**2D distribution E field  
in area X(-1.5:1.5), Y(-2.5:1.1)**



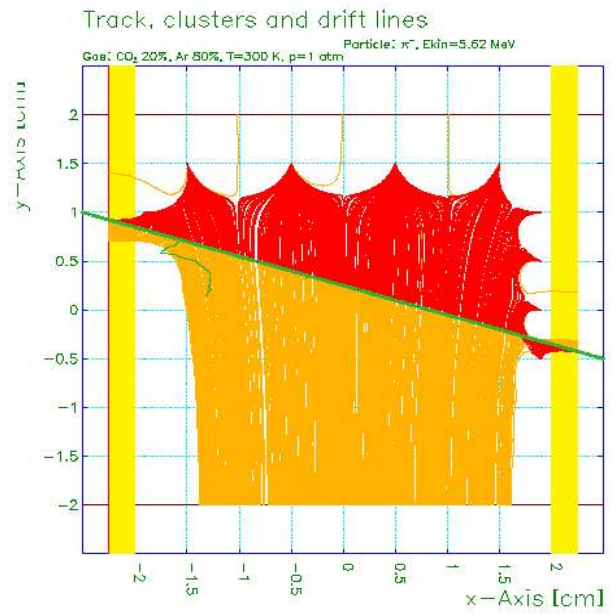
**Projection on X axis**



**Projection on Y axis**



**2D distribution electrons drift velocity  
in area X(-2.0:2.0), Y(-2.0:2.0)**



**Track, Clusters(green), Electrons drift lines  
(red), Ions drift lines (brown)**

Plot of 09/23/11 on 30/10/09 with control version 7.18.

Plot of 10/16/09 on 30/10/09 with control version 7.18.

### Part 3

Planes:  $x = -2.25$  cm,  $x = 2.25$  cm,  $y = -2.0$  cm,  $y = 2.0$  cm.

Dielectricum (position (x begin,x end) ):  $x(-2.25,-2.0)$ ,  $x(2.0,2.25)$

Anodes wires (name wire Sx, position wire (x,y), wire voltage  $U_{sx}$ , wire diameter):

S1(-1.5,1.5), S2(-0.5,1.5), S3(0.5,1.5), S4(1.5,1.5)

$U_{s1} = U_{s2} = U_{s3} = U_{s4} = 9000$  V

diameter = 0.0020 cm

Field wires (name wire Cx, position wire (x,y), wire voltage  $U_{cx}$ , wire diameter):

C1(-1.9,1.0), C2(-1.9,0.5), C3(-1.9,0.0), C4(-1.9,0.5), C5(-1.9,1.0), C6(-1.9,1.5)

C7(1.9,1.0), C8(1.9,0.5), C9(1.9,0.0), C10(1.9,0.5), C11(1.9,1.0), C12(1.9,1.5)

$U_{c1} = U_{c7} = 5200$  V,  $U_{c2} = U_{c8} = 4200$  V,  $U_{c3} = U_{c9} = 3300$  V,

$U_{c4} = U_{c9} = 2600$  V,  $U_{c5} = U_{c10} = 1600$  V,  $U_{c6} = U_{c12} = 900$  V

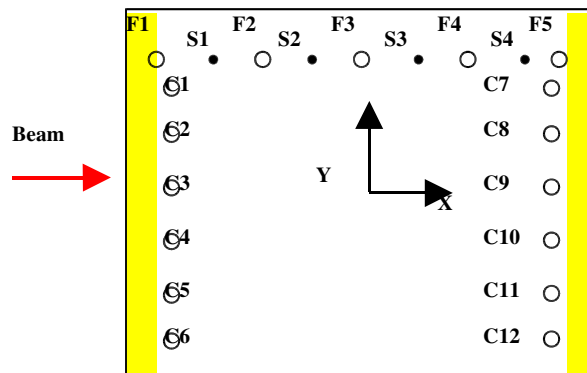
diameter = 0.0100 cm

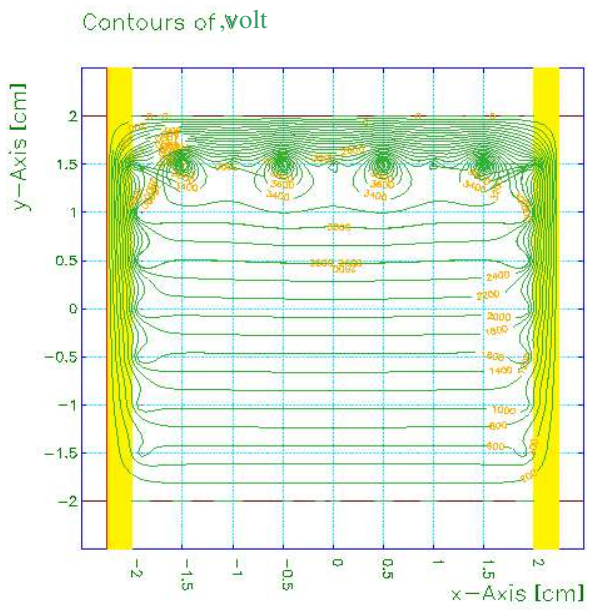
Field wires (name wire Fx, position wire (x,y), wire voltage  $U_{fx}$ , wire diameter):

F1(-2.0,1.5), F2(-1.0,1.5), F3(0.0,1.5), F4(1.0,1.5), F5(2.0,1.5)

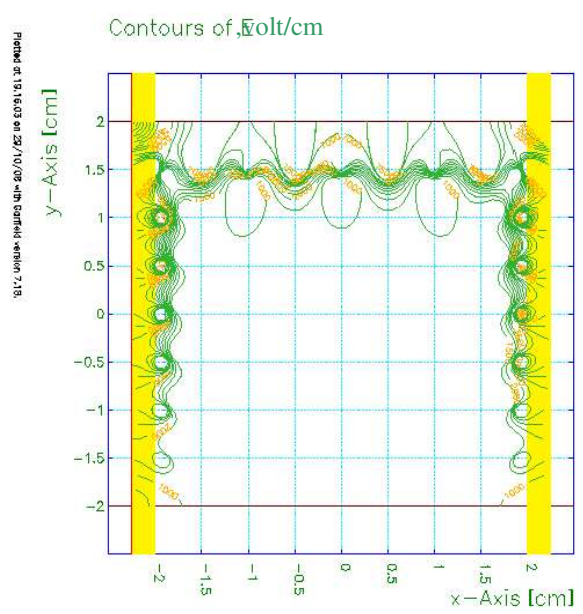
$U_{f1} = U_{f2} = U_{f3} = U_{f4} = U_{f5} = 4000$  V

diameter = 0.0100 cm





**Contours distribution potential**

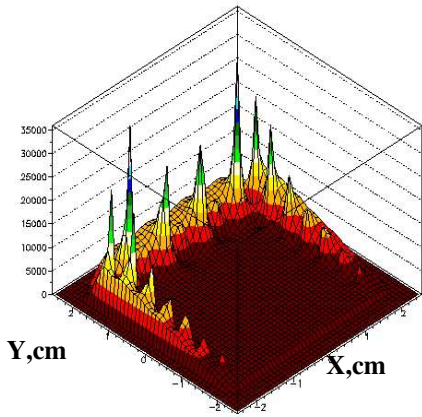


**Contours distribution E field**

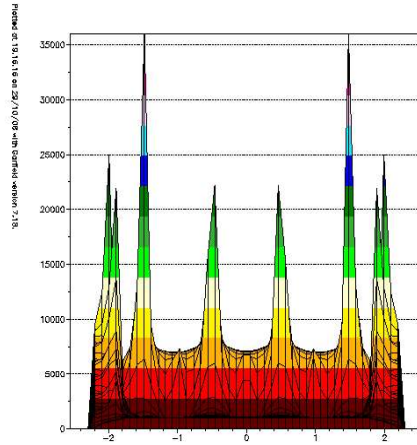
Printed at 19/10/19 at 22/10/08 with cartfid version 7.18.

Printed at 19/10/19 at 22/10/08 with cartfid version 7.18.

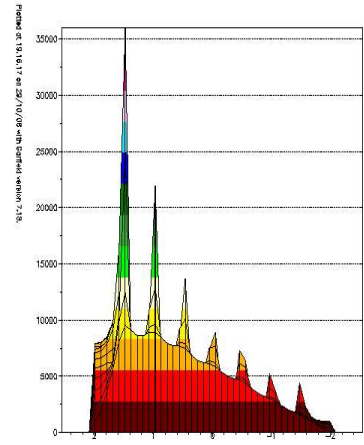




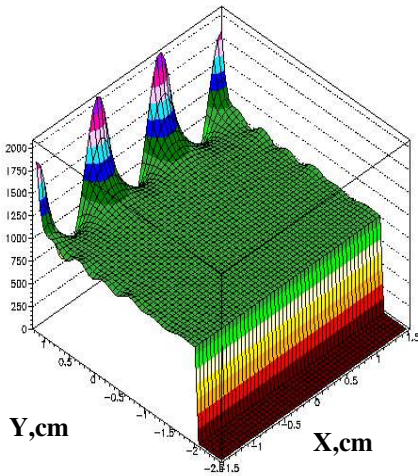
**2D distribution E field  
by the all area on X and Y axis**



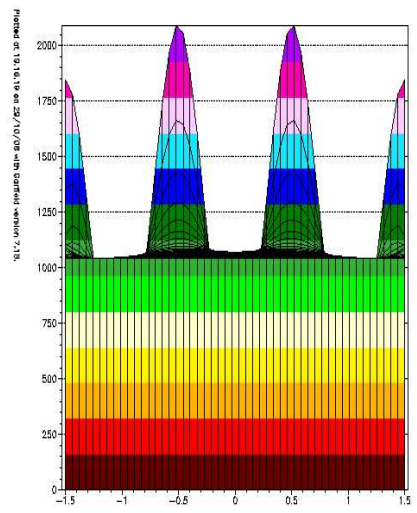
**Projection on X axis**



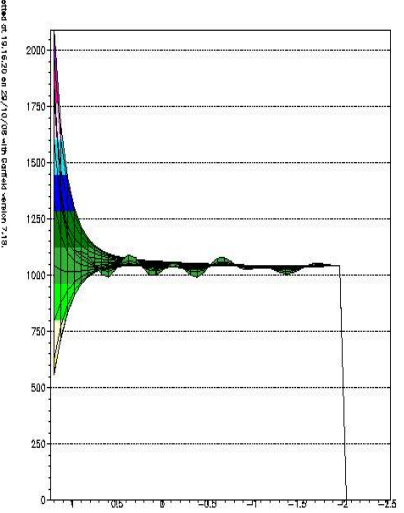
**Projection on Y axis**



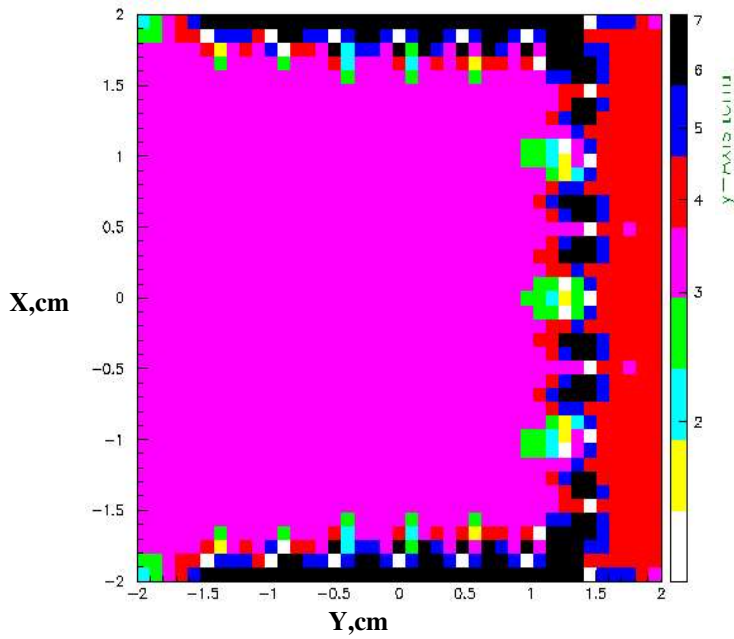
**2D distribution E field  
in area X(-1.5:1.5), Y(-2.5:1.1)**



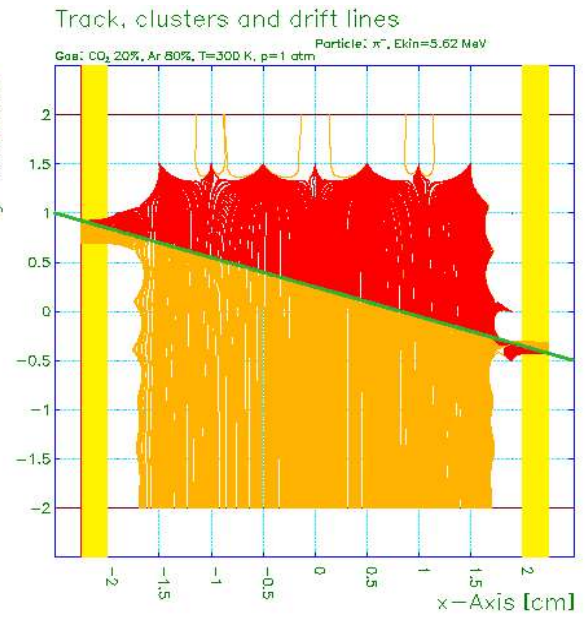
**Projection on X axis**



**Projection on Y axis**



**2D distribution electrons drift velocity  
in area X(-2.0:2.0), Y(-2.0:2.0)**



**Track, Clusters(green), Electrons drift lines  
(red), Ions drift lines (brown)**