



# Roadlike shield with magnetic field

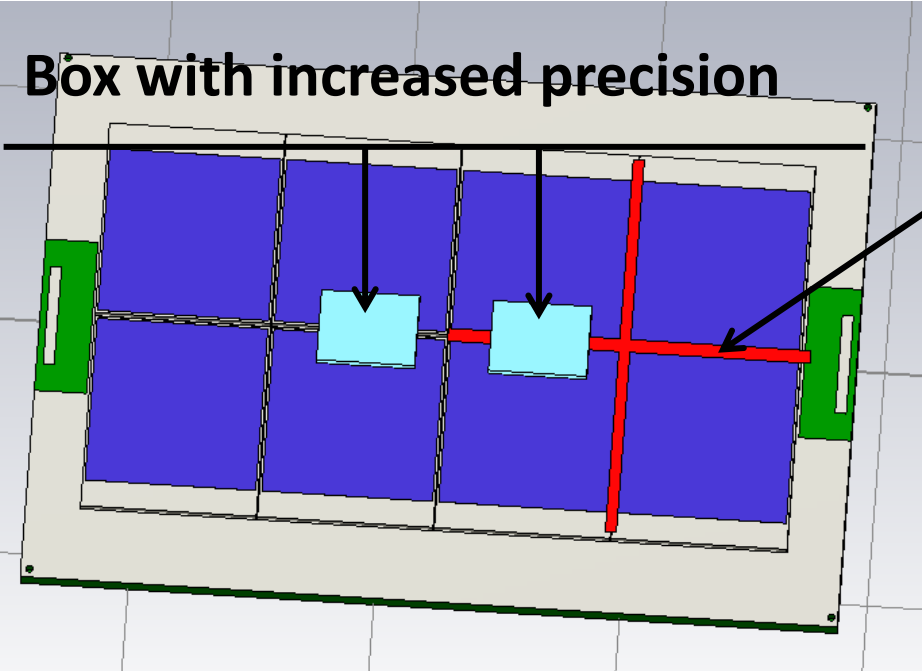
Fedorchuk Oleksiy

Oleg Bezshyyko

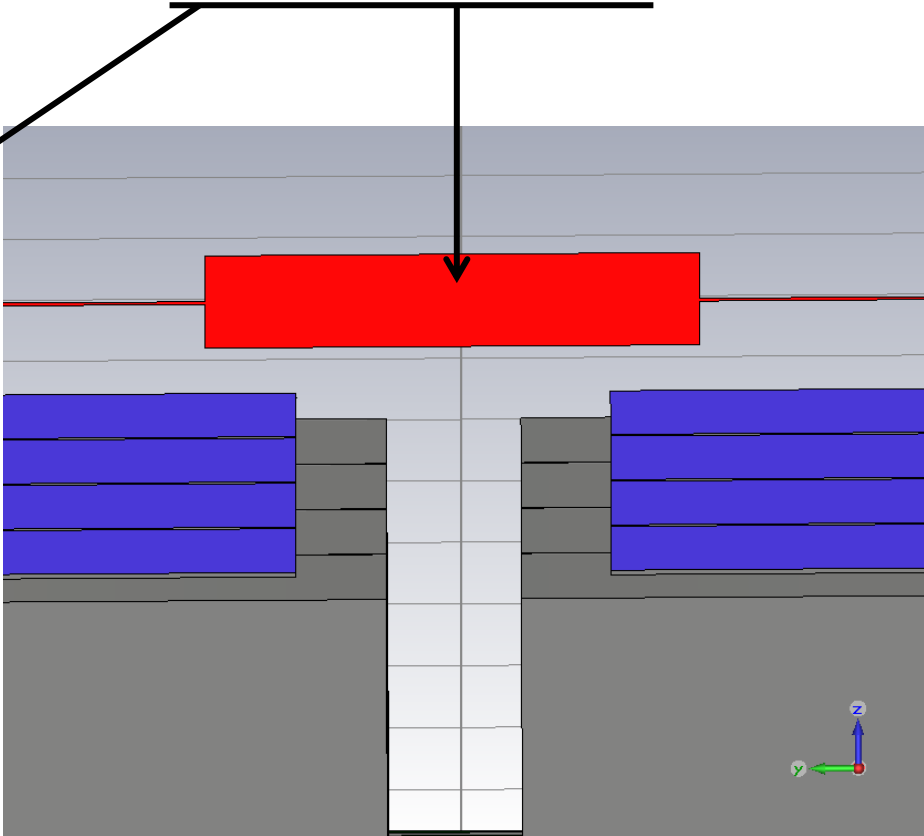
Taras Shevchenko National University of Kyiv

# Geometry

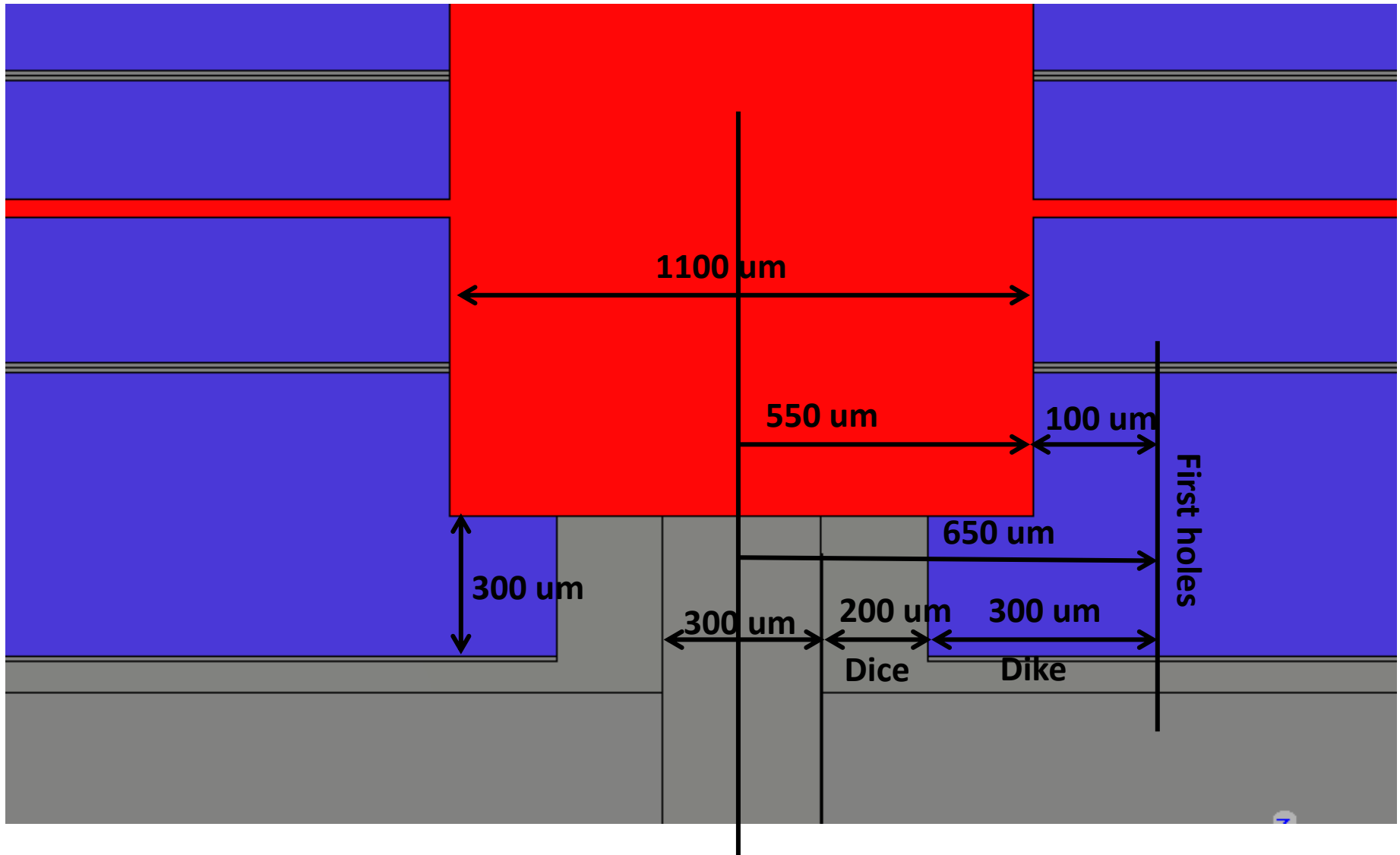
Box with increased precision



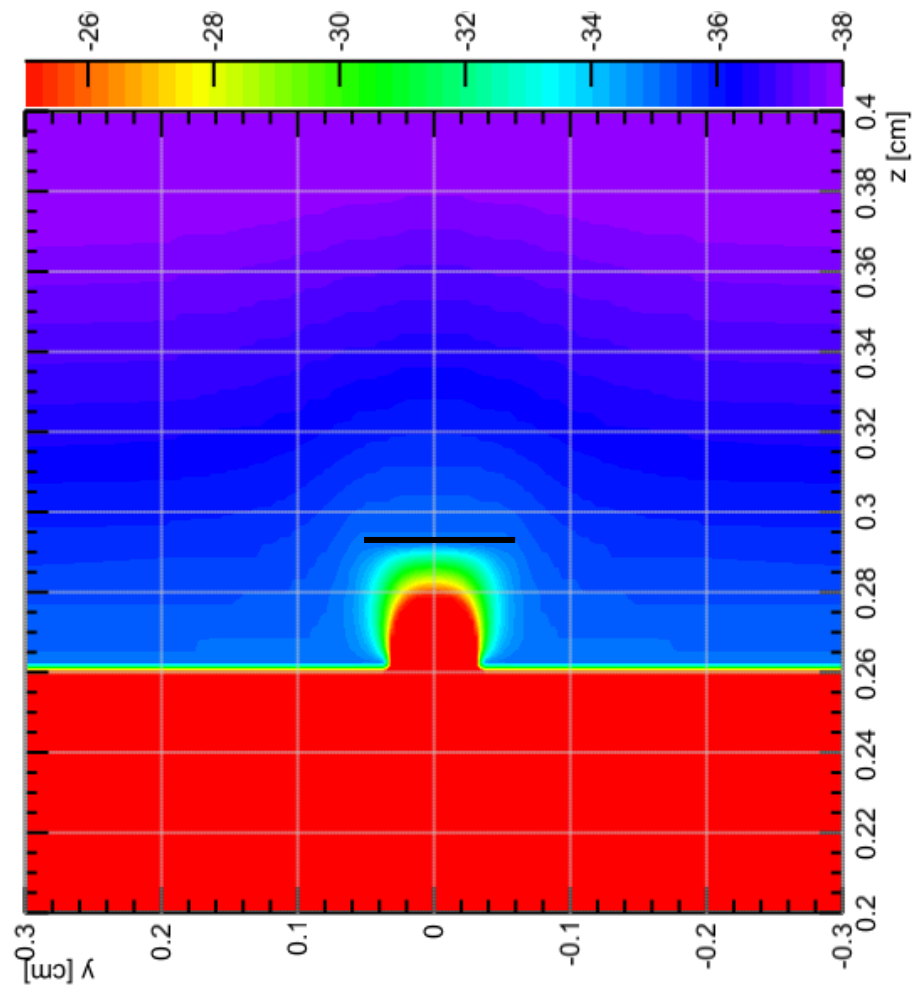
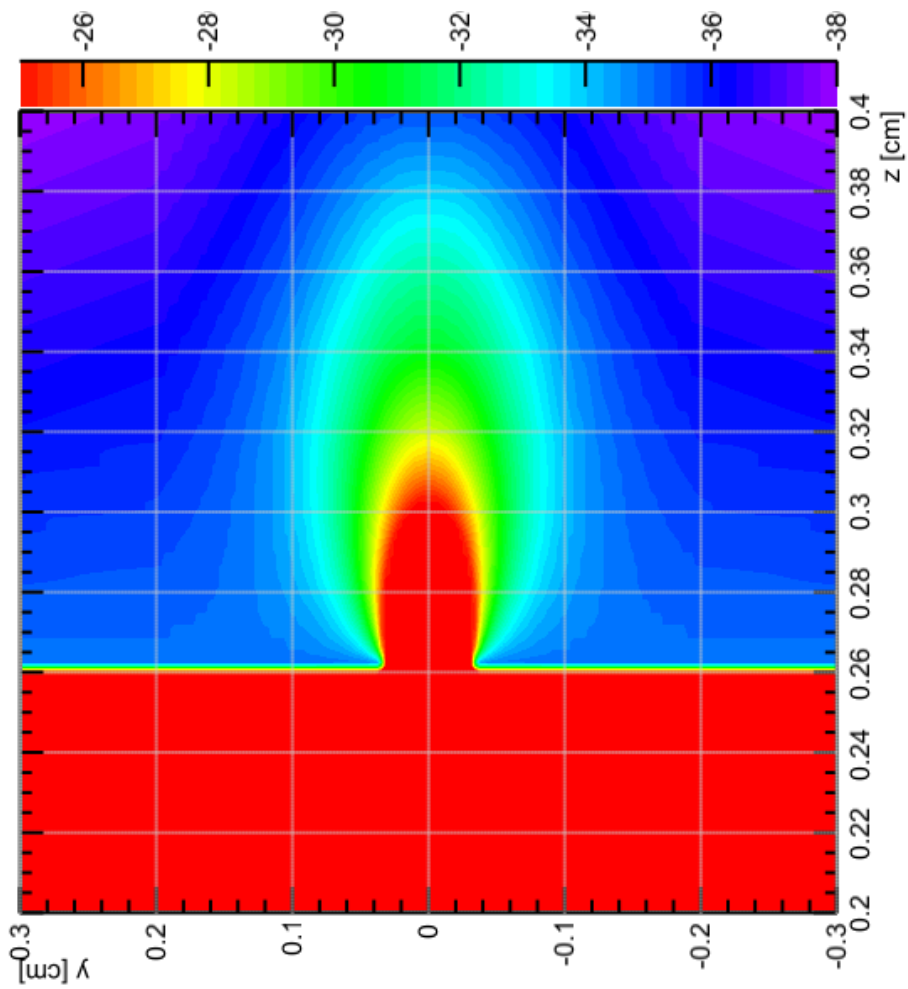
Roadlike shield



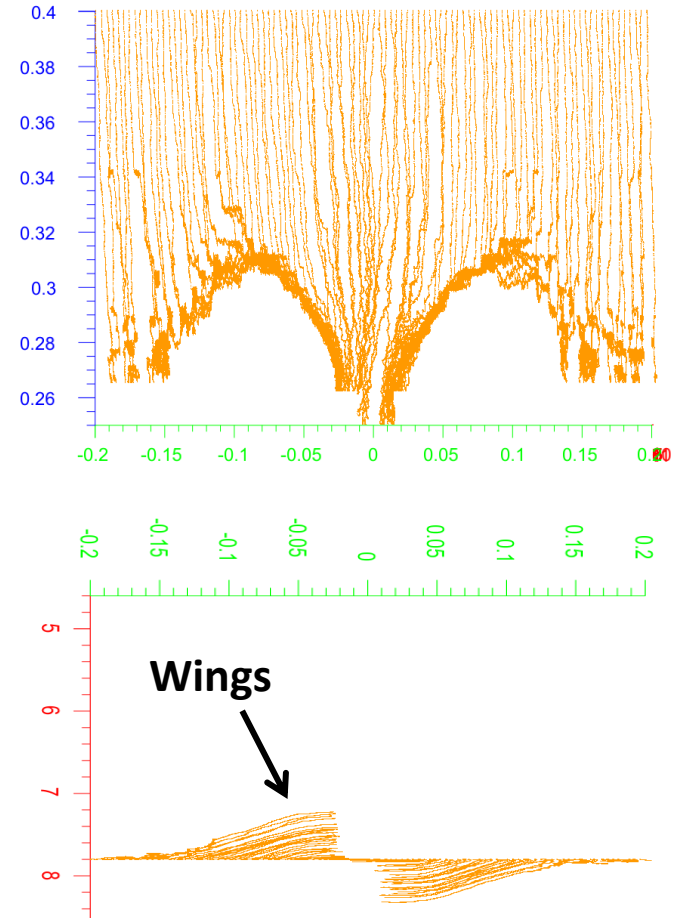
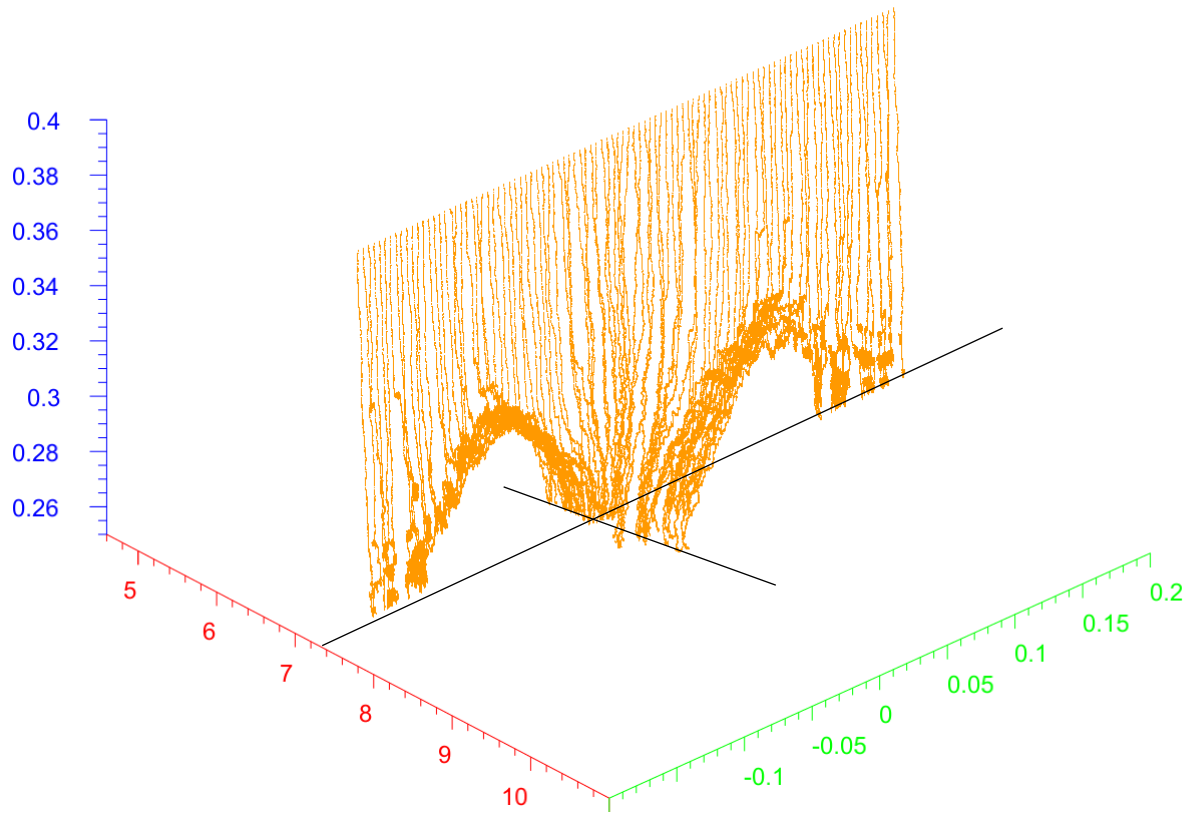
# Relative position



# Fields



# No roads. 4 T

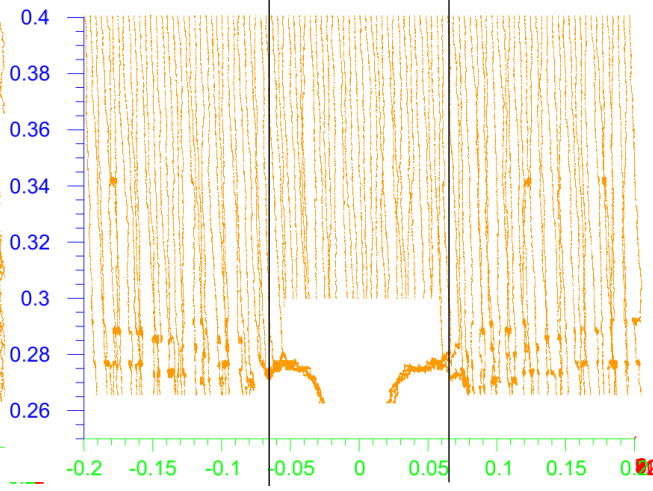
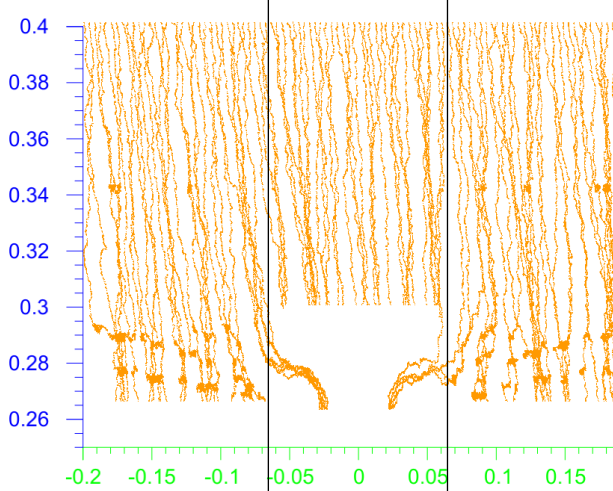
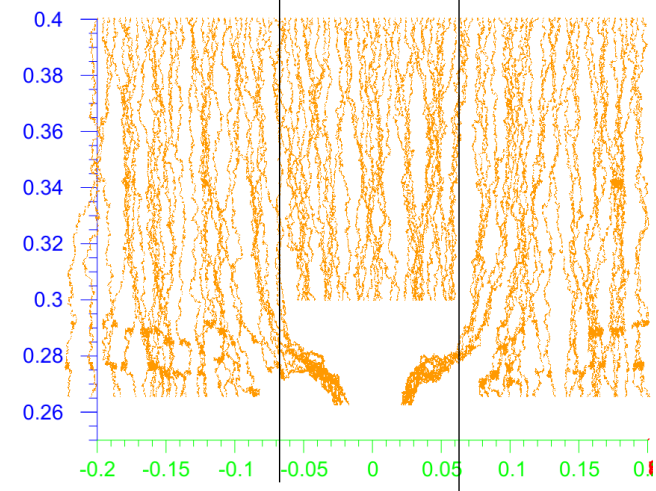
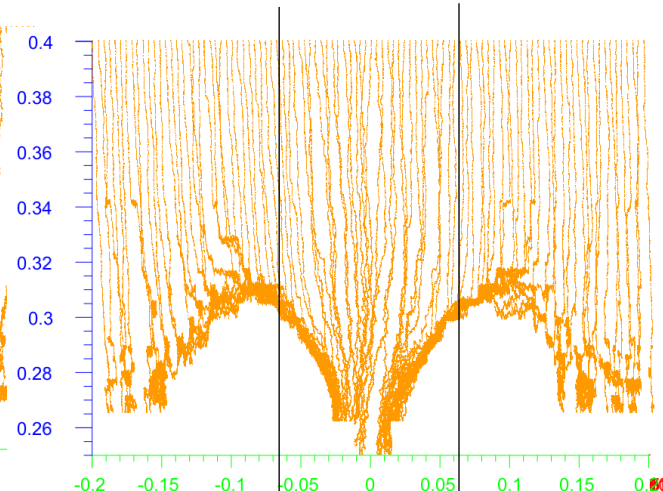
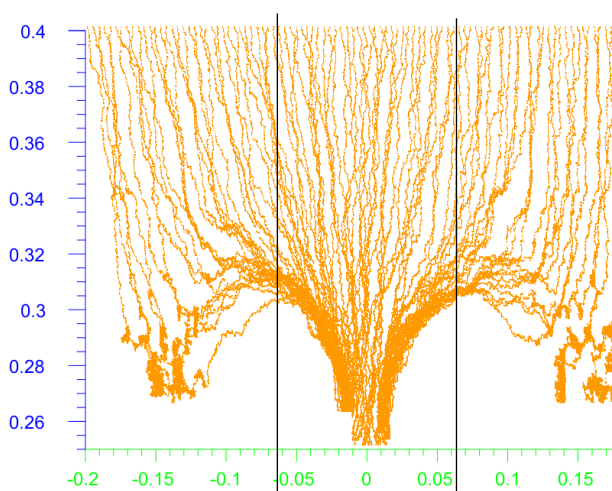
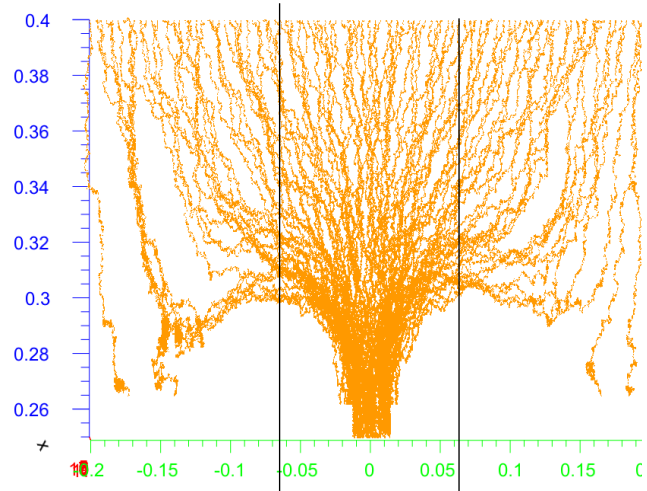


# Trajectory in fields [cm]

0T

1T

4T

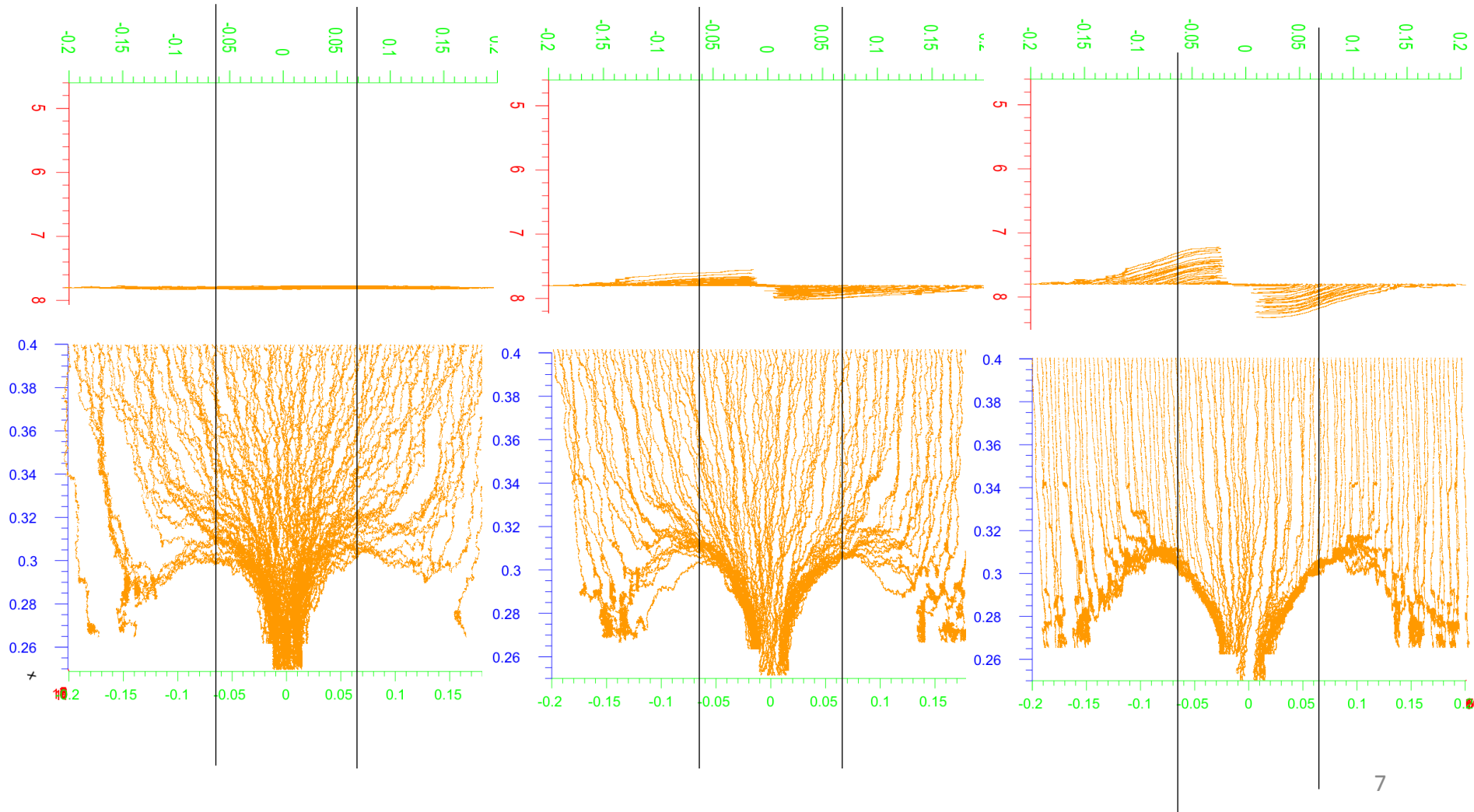


# Trajectory in fields. No roads [cm]

0TI

1TL

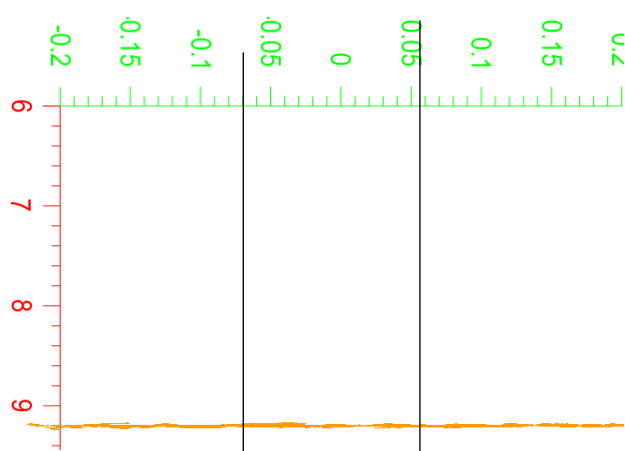
4TI



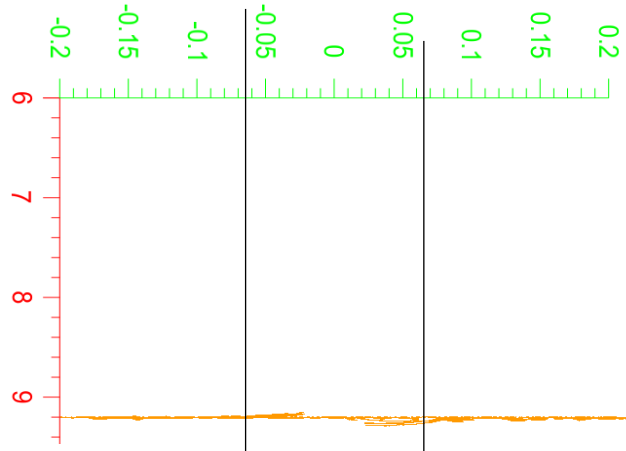


# Trajectory in fields. With roads [cm]

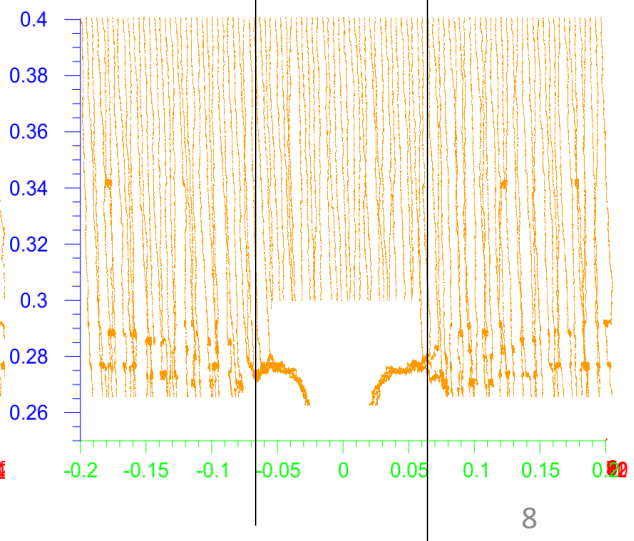
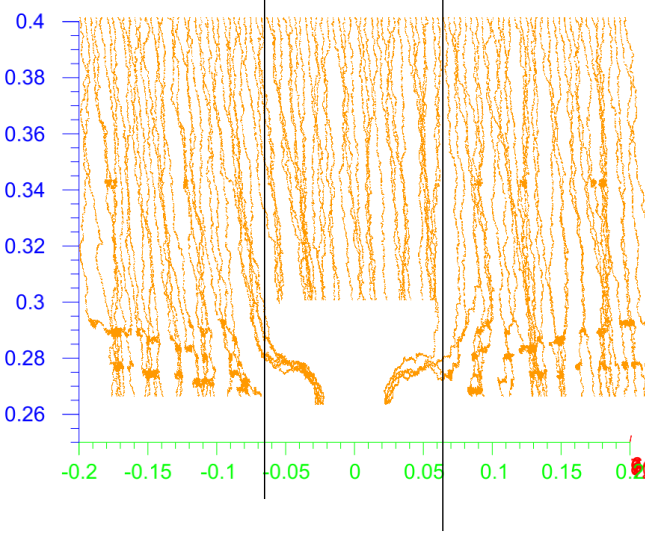
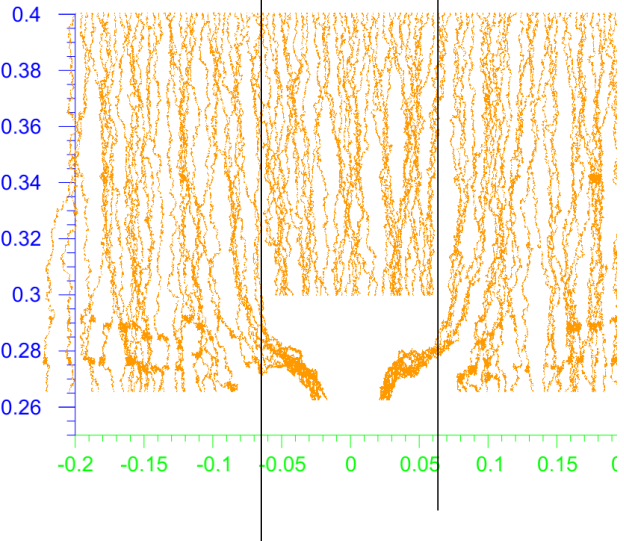
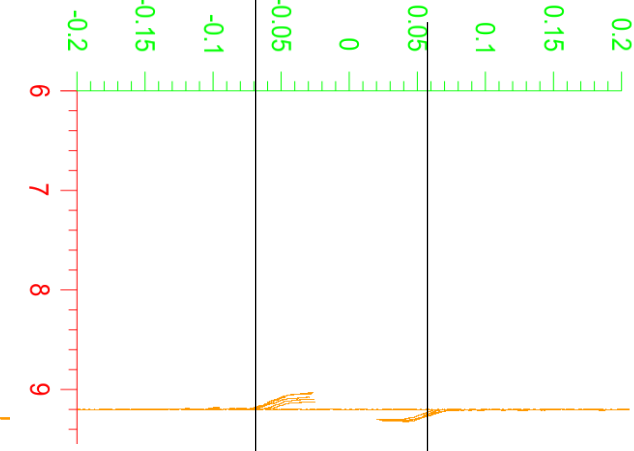
**0TI**



**1TL**



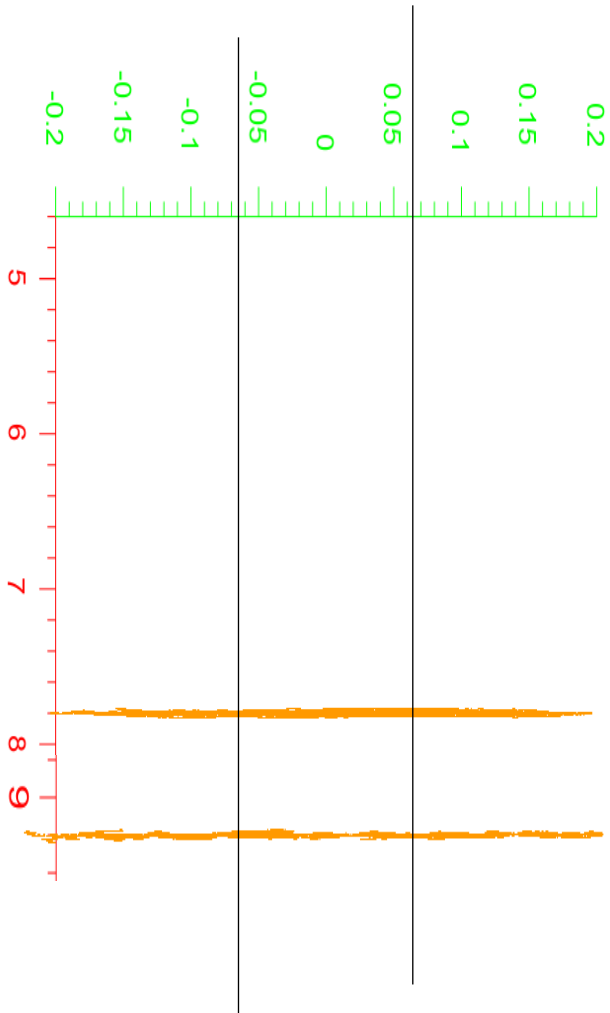
**4TI**



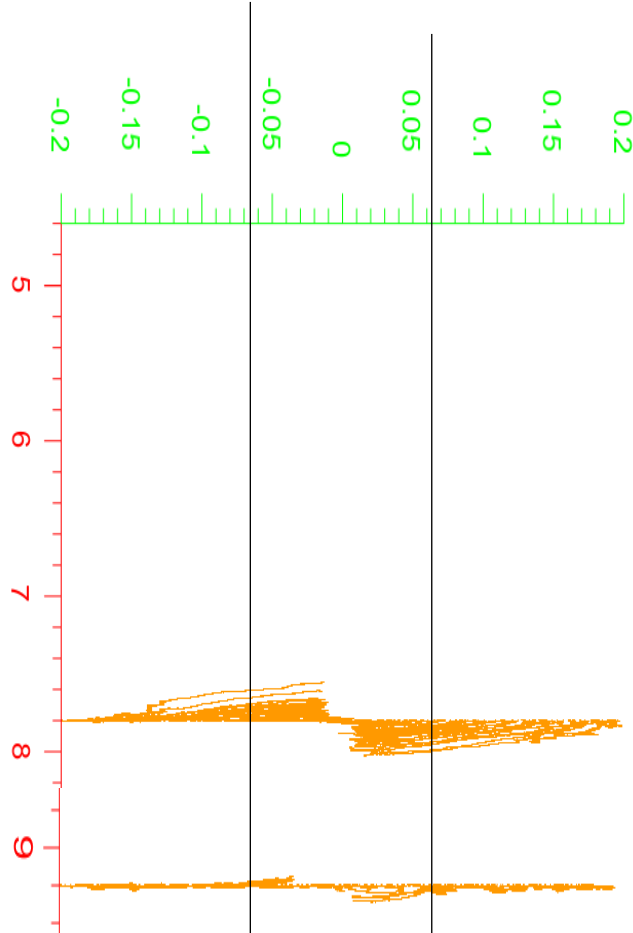


# Trajectory in fields. Top view [cm]

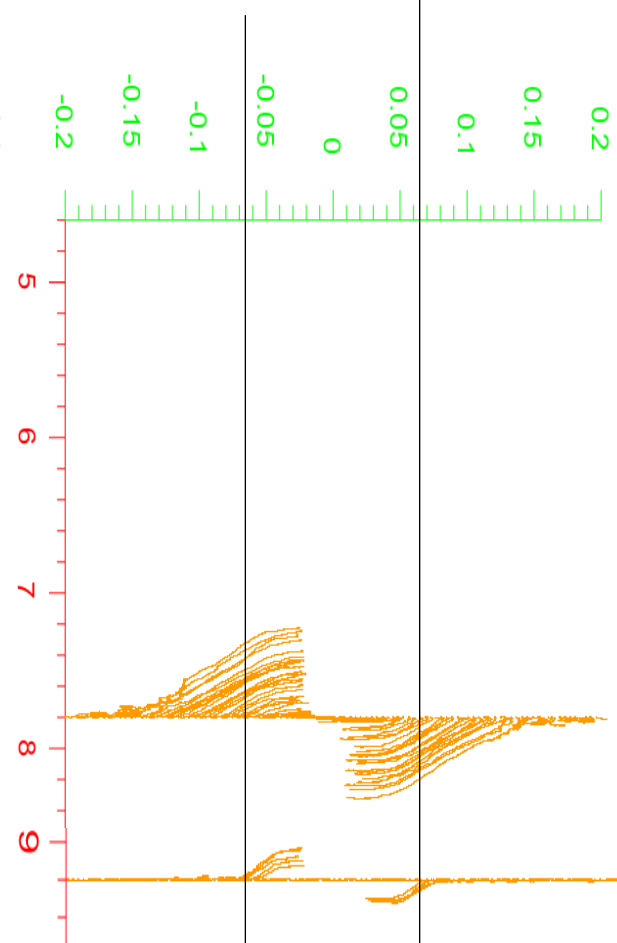
**0TI**

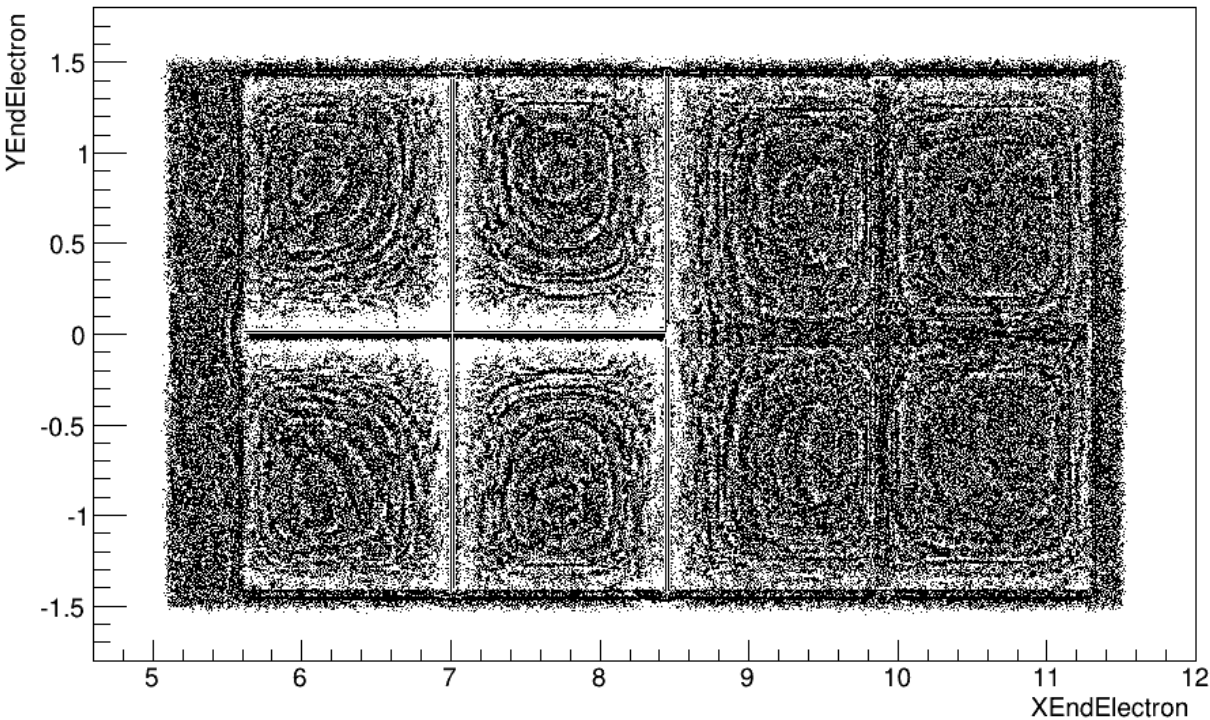


**1TL**

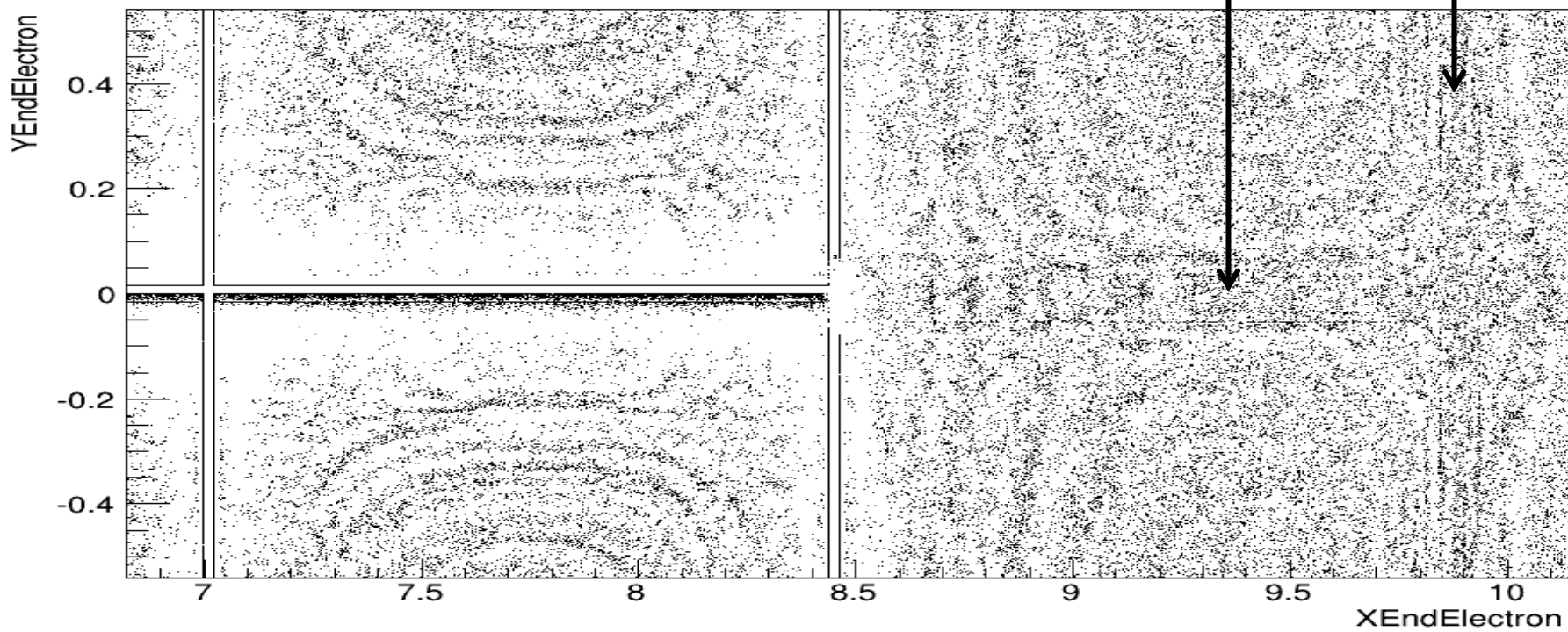


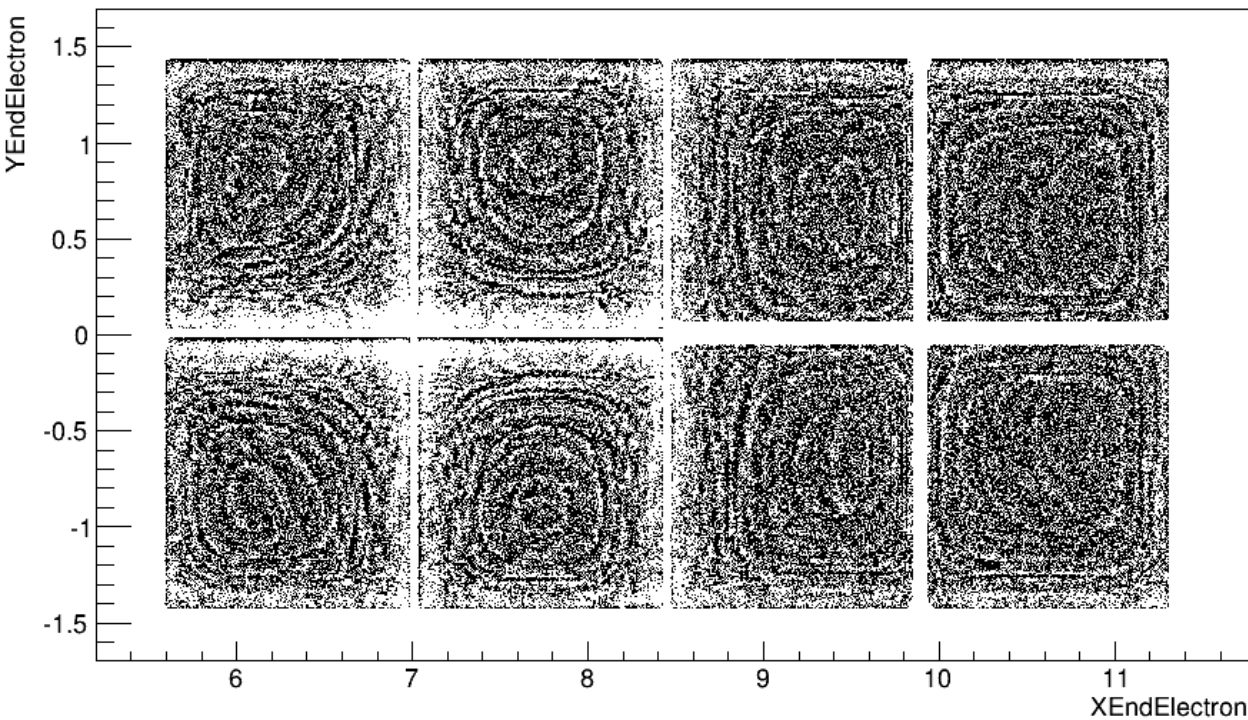
**4TI**



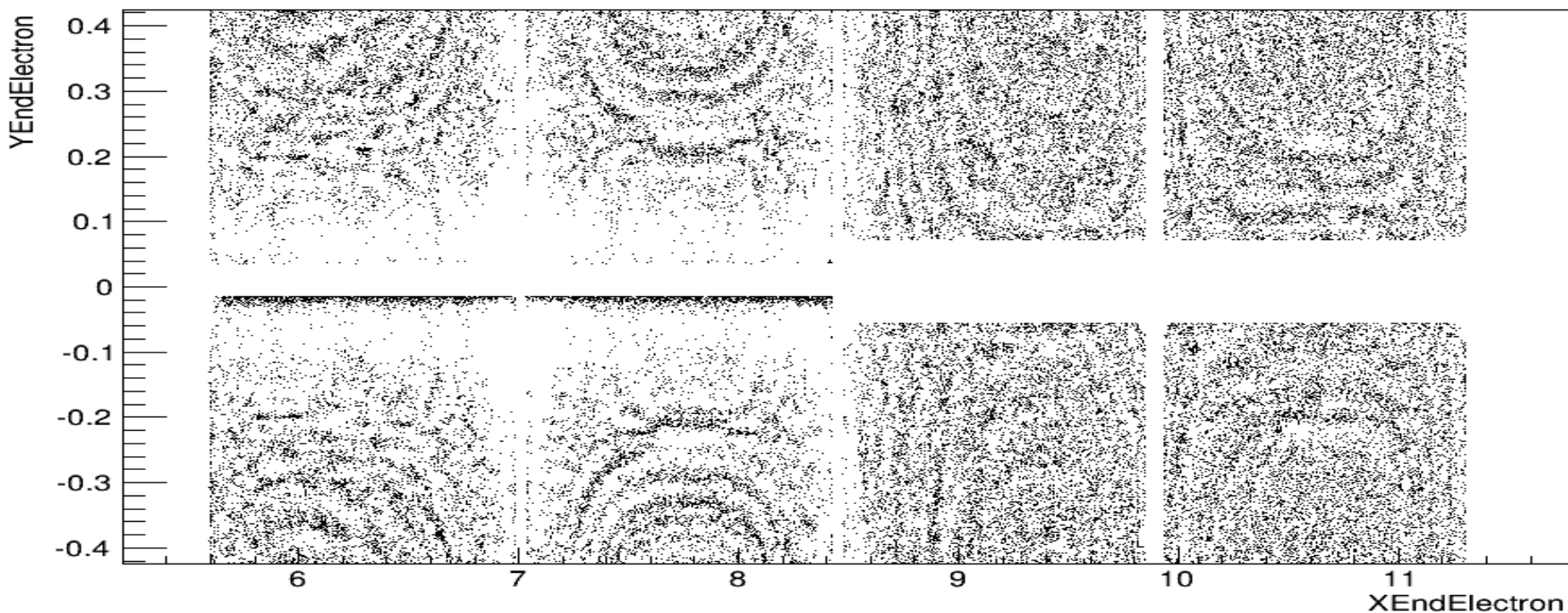


**Filling of the sensitive area**

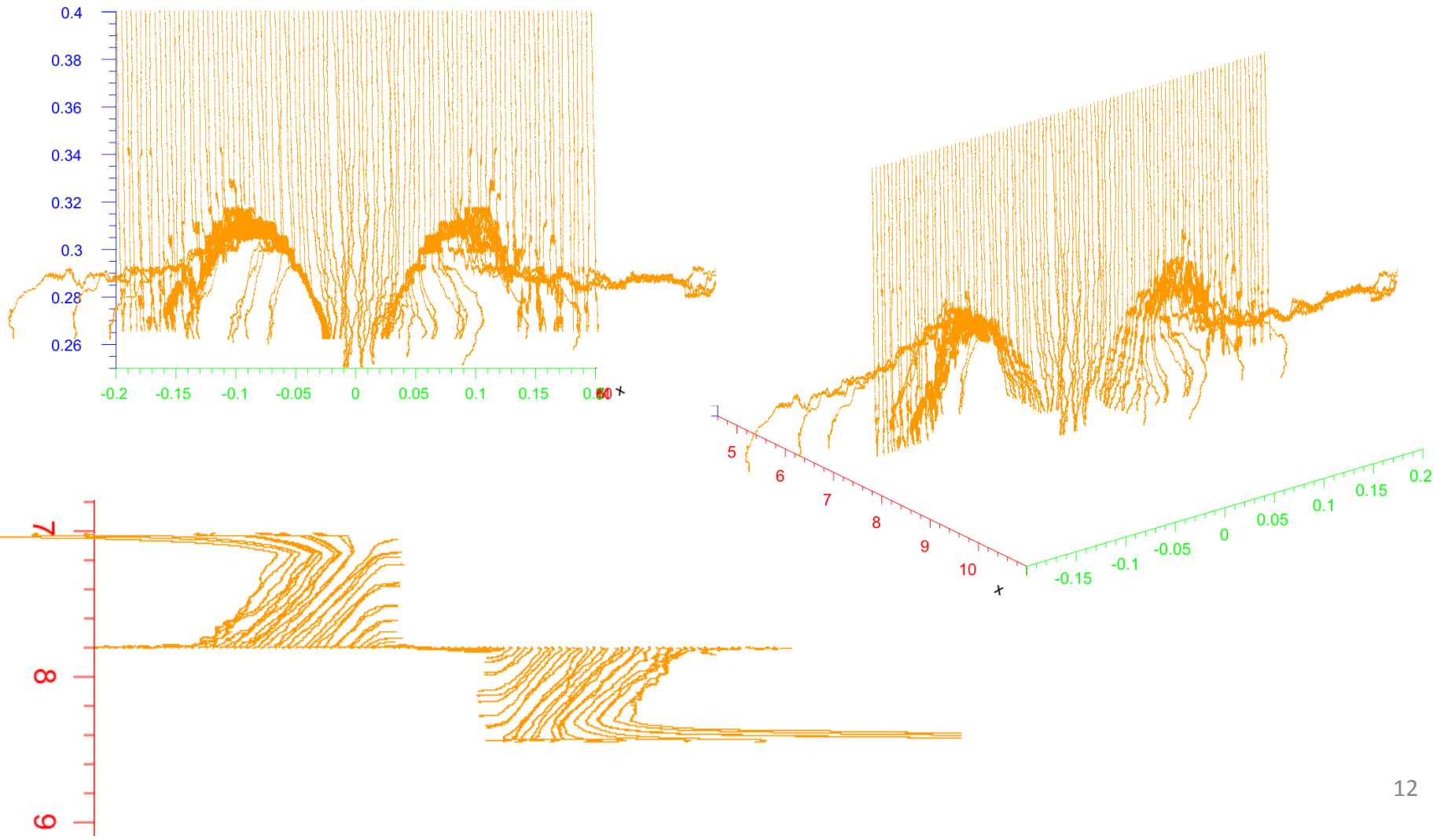




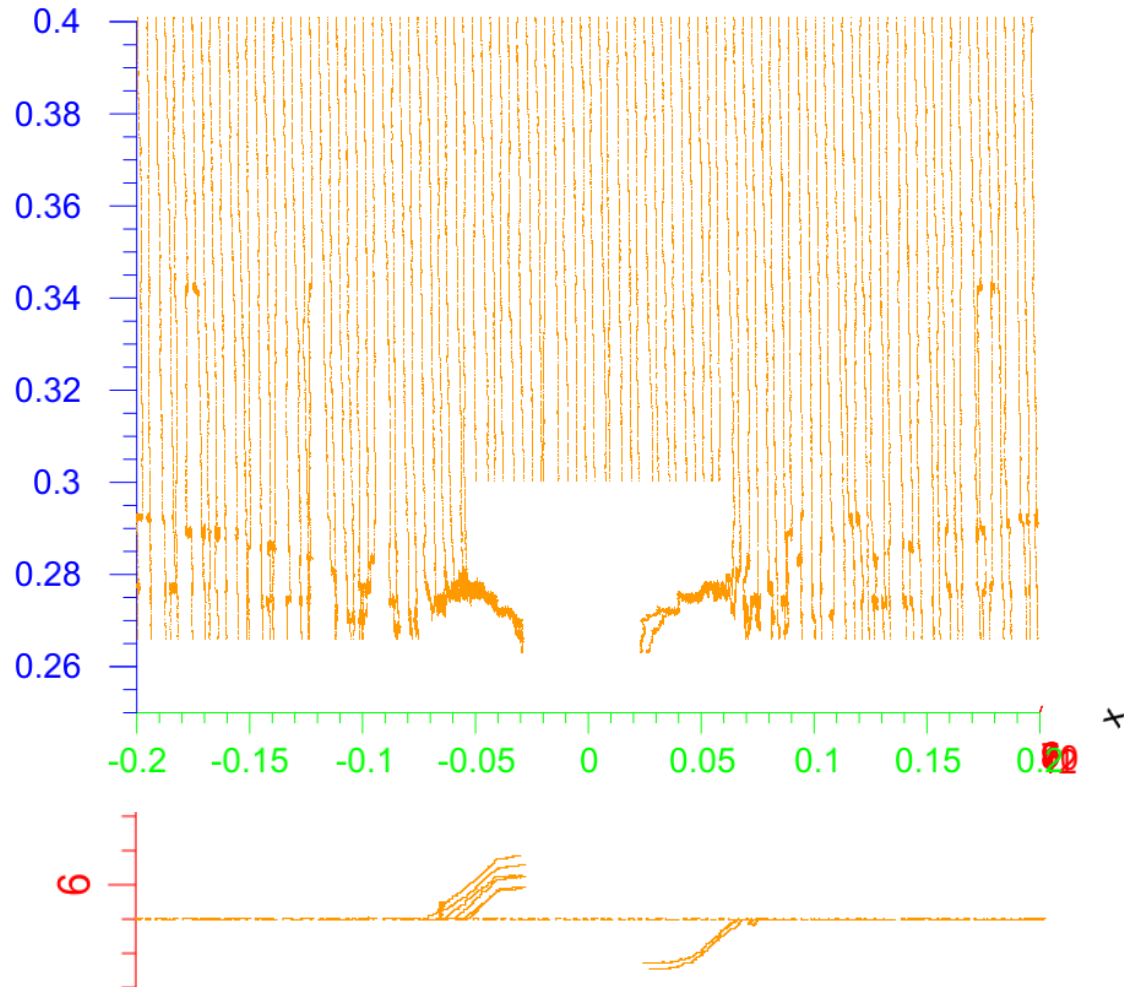
**Filling of the  
sensitive area**



# Study case showing how the field lines behave at the very large (unrealistic) magnetic field 10 T



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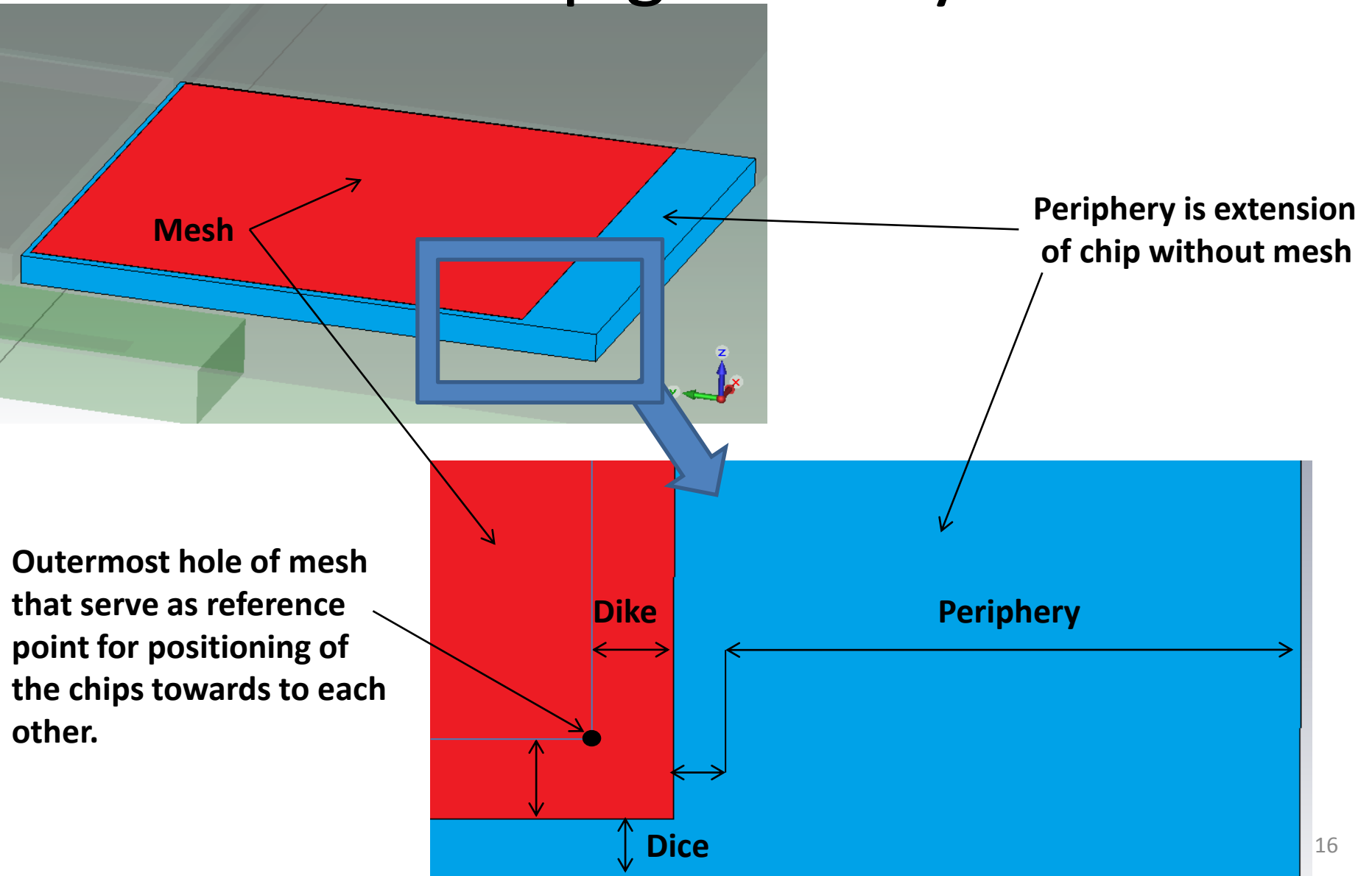
# Summary

- Octoboard in the magnetic field was tested
- Found “wings”.
- Roadlike shield was tested.
- Parameters need to be optimized:
  - Height of roadlike shield strips above the chips
  - Sizes of the strips
  - Strips potential
  - Dielectric layer between the chips and shield strips
  - And others ...

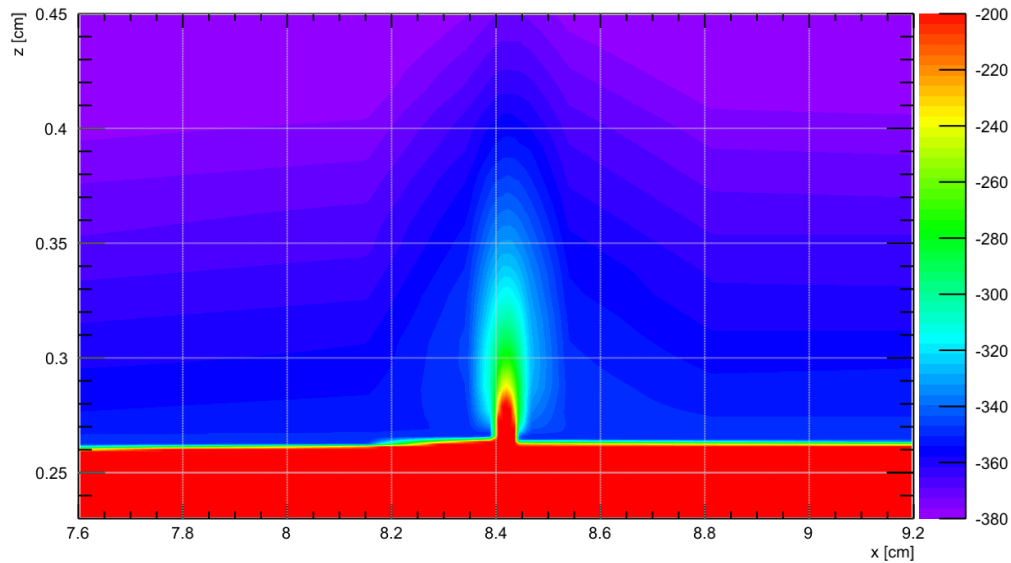
- Back Up



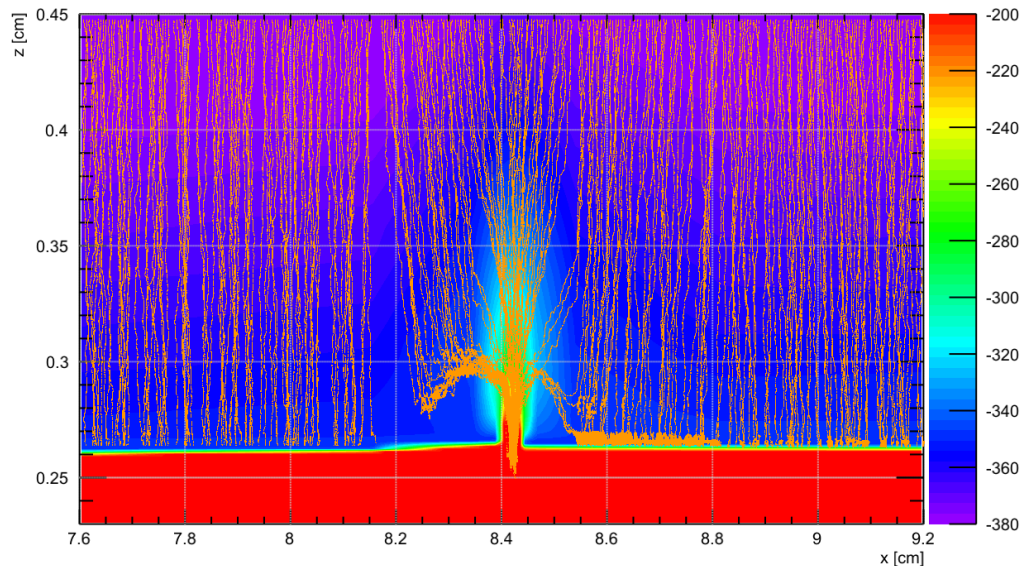
# Chip geometry



# Distortion of voltage and electron path

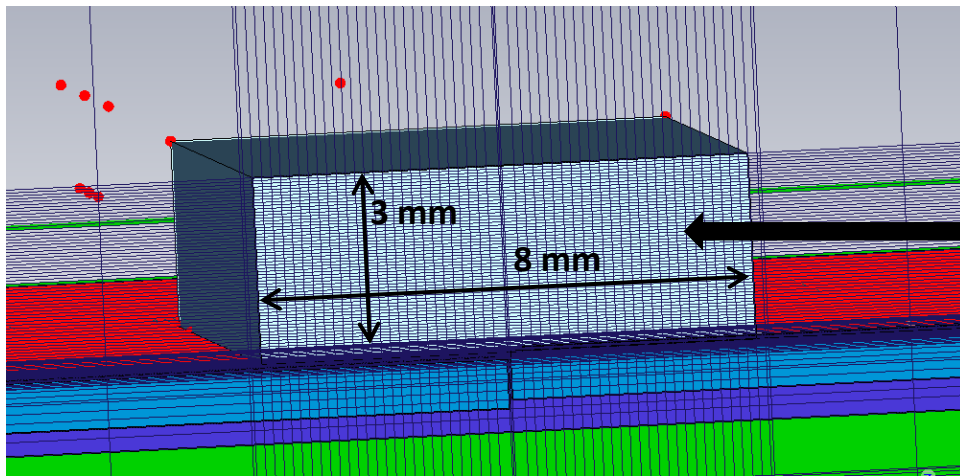
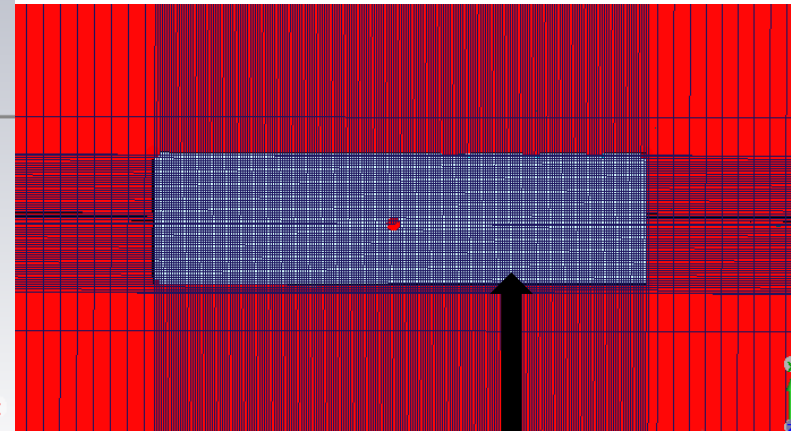
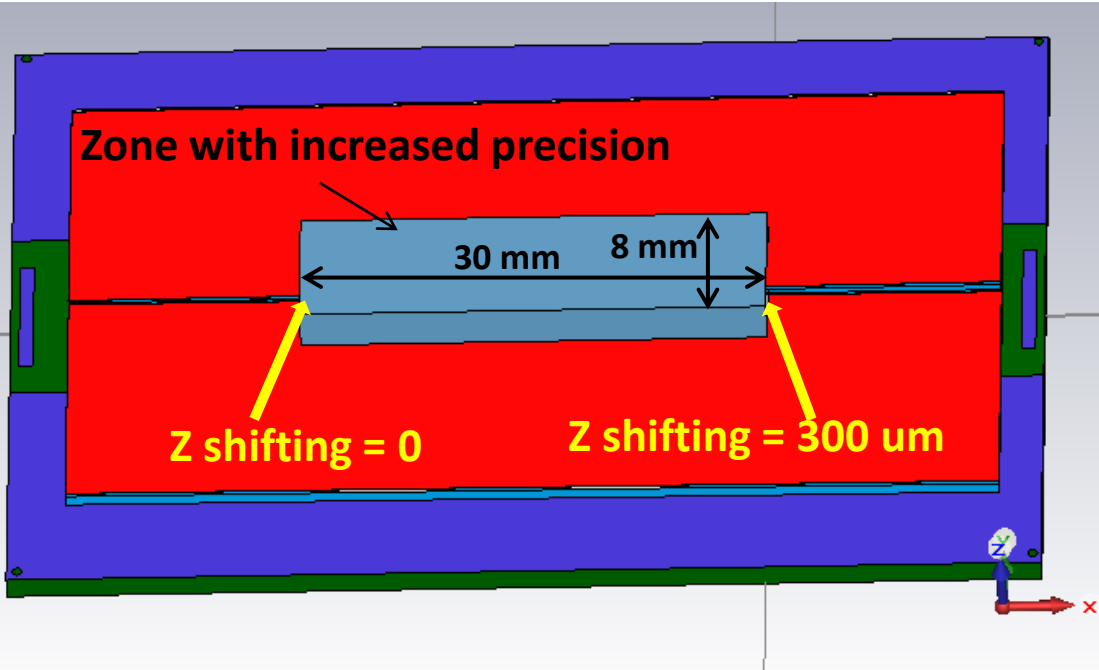


Voltage distribution  
near the gap



Gap pull the electrons  
inside

# Details of meshing



Slice of zone with increased precision

# Input geometry

