

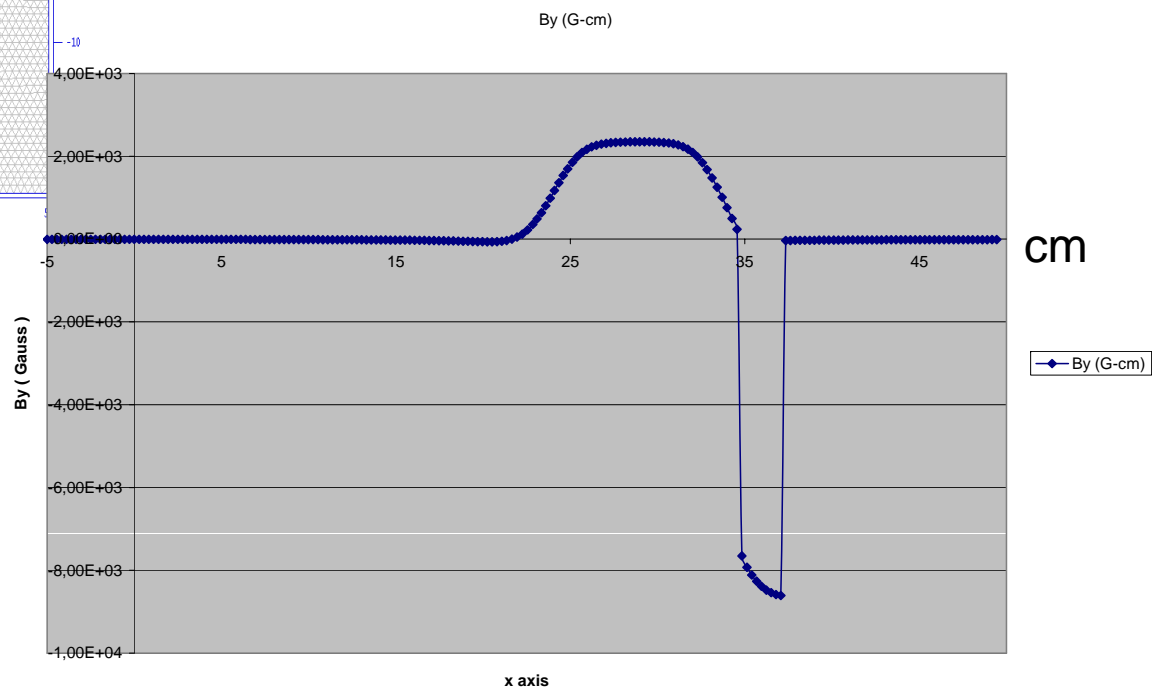
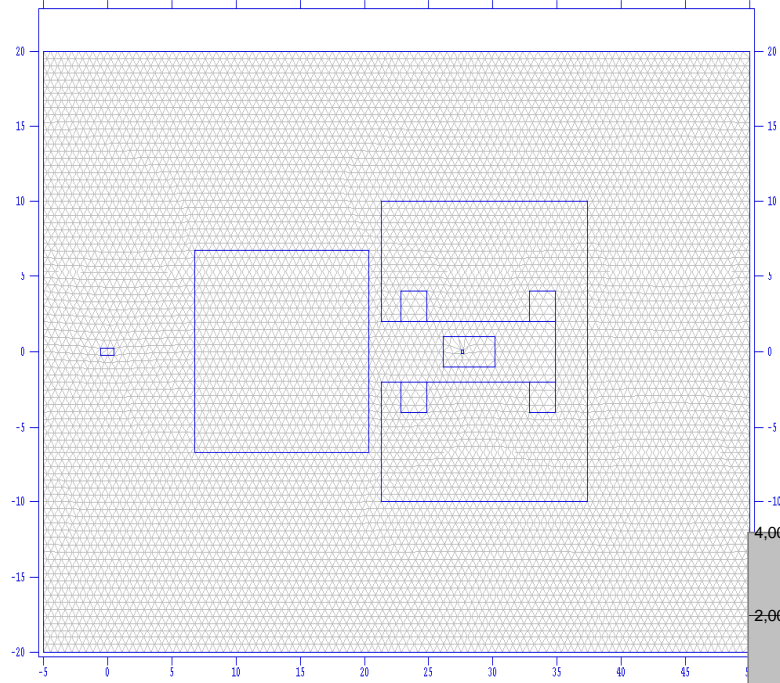
BHEX1 bending magnet  
computation in the minimal ILC  
2mrad alternative extraction  
scheme

# BHEX1

- Good field region : 40 mm
- Vertical Gap : 20 mm
- Field 0.21T
- The incoming beam is at 276.4 mm

# First Poisson Model and Results

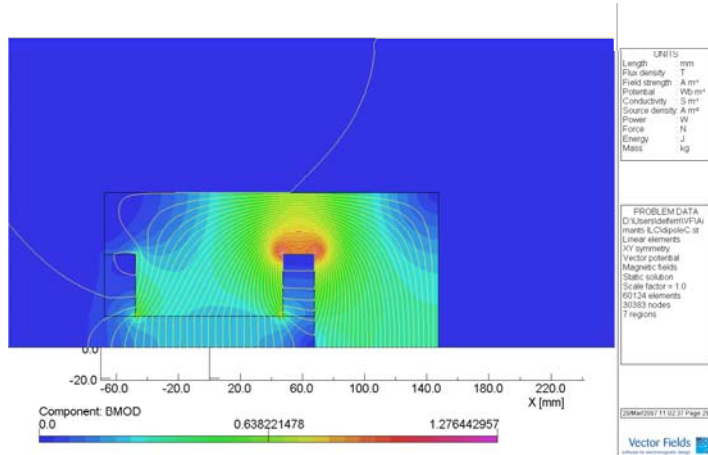
Test Poisson aimantc problem



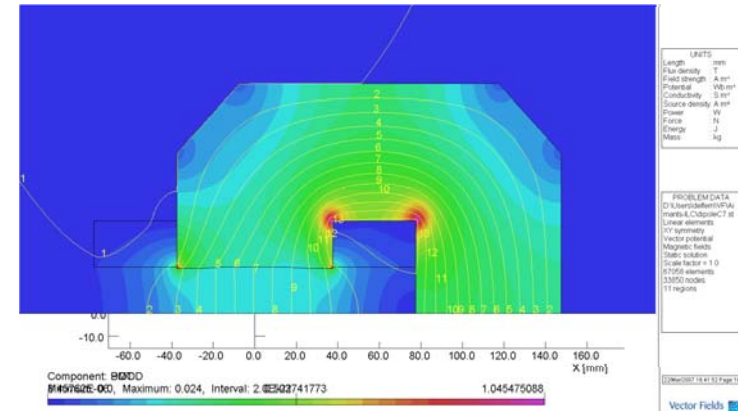
# New optimised design with Olivier Delferriere at Saclay

- We have now three different options made with OPERA 2D with bigger coils which is better if we want to have reasonable value in terms of  $A/mm^2$ .
- Shims were added to have better homogeneity curve

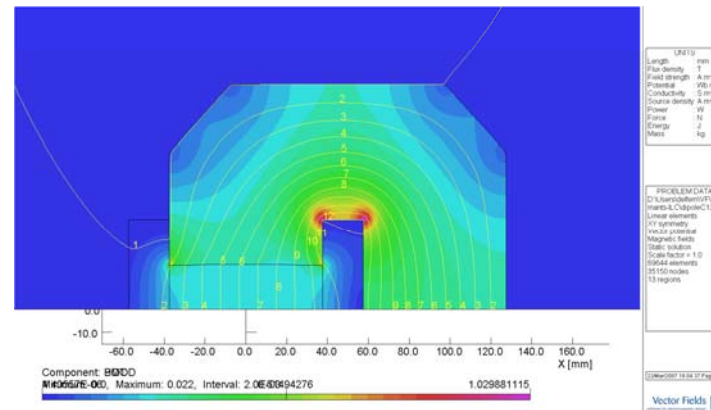
# The three magnets



V1



V2

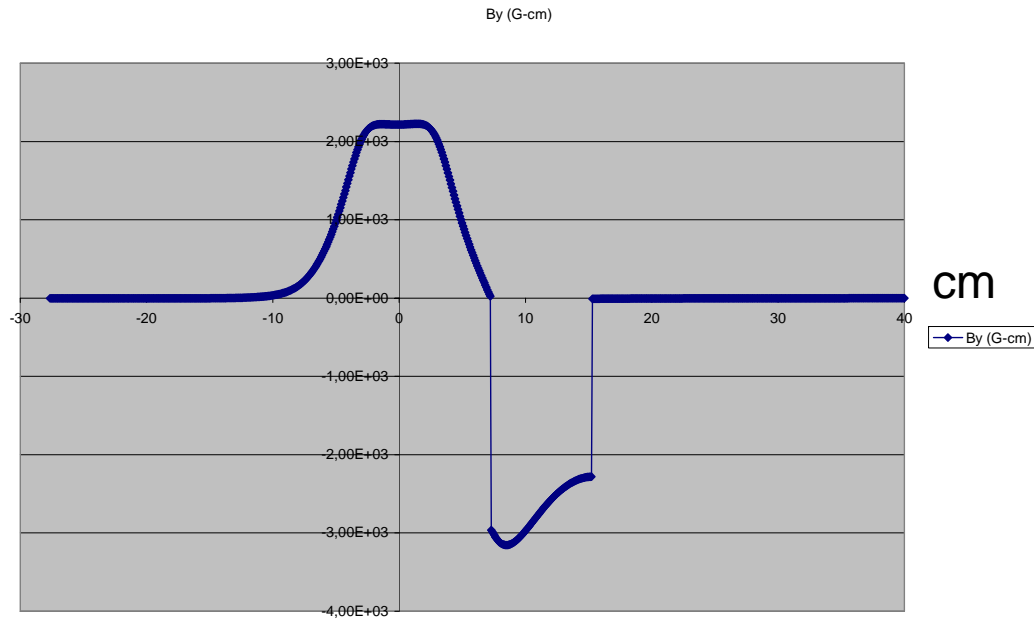


V3

- The best option seems to be the second one but it has not the right dimensions because the coil is too close to the beamsthalung
- So a Poisson model was created with a reduced size on the x axis and shims.



# Results



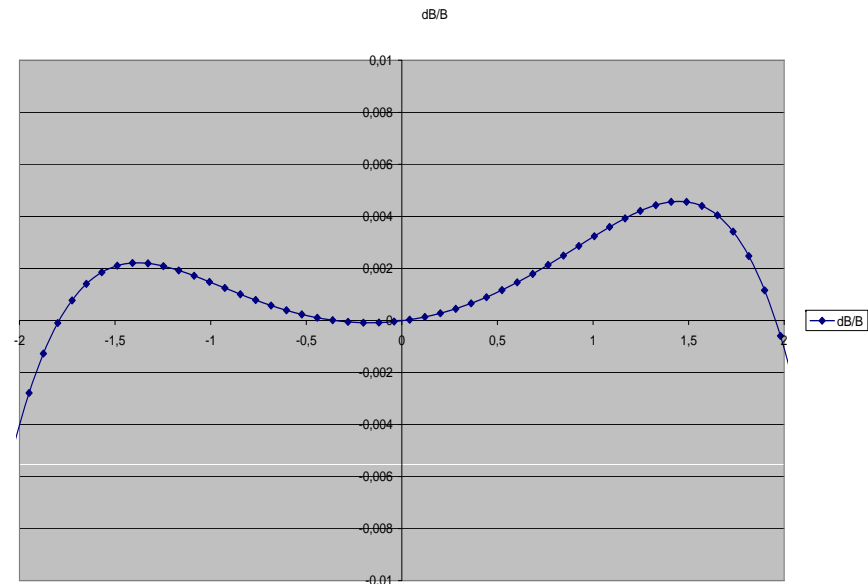
Homogeneity curve from  
-20mm to 20mm.

We have a value of  $4 \cdot 10^{-3}$

By curve with cm on x axis and  
Gauss on the y axis.

Max  $B_y = 0.222T$

The center of the magnet is at the  
origin



# Summary

In that case, the magnet seems to be feasible

Value of homogeneity curve needs to be checked with DIMAD

So the next step is to learn how to use DIMAD.