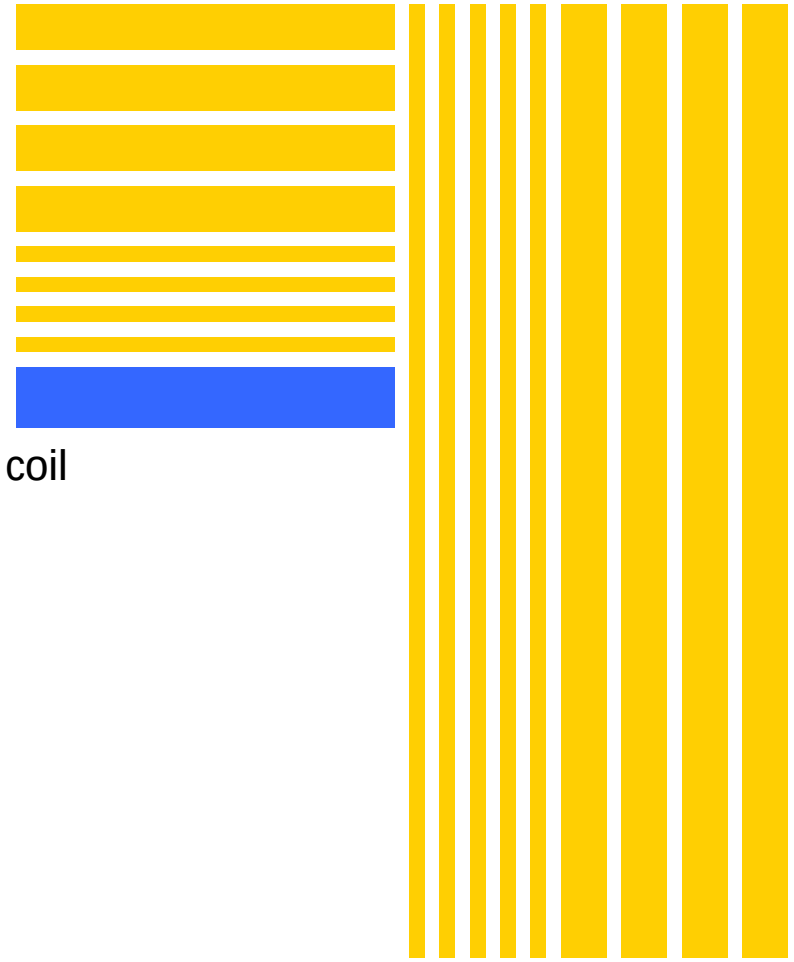
End-cap Design Proposal

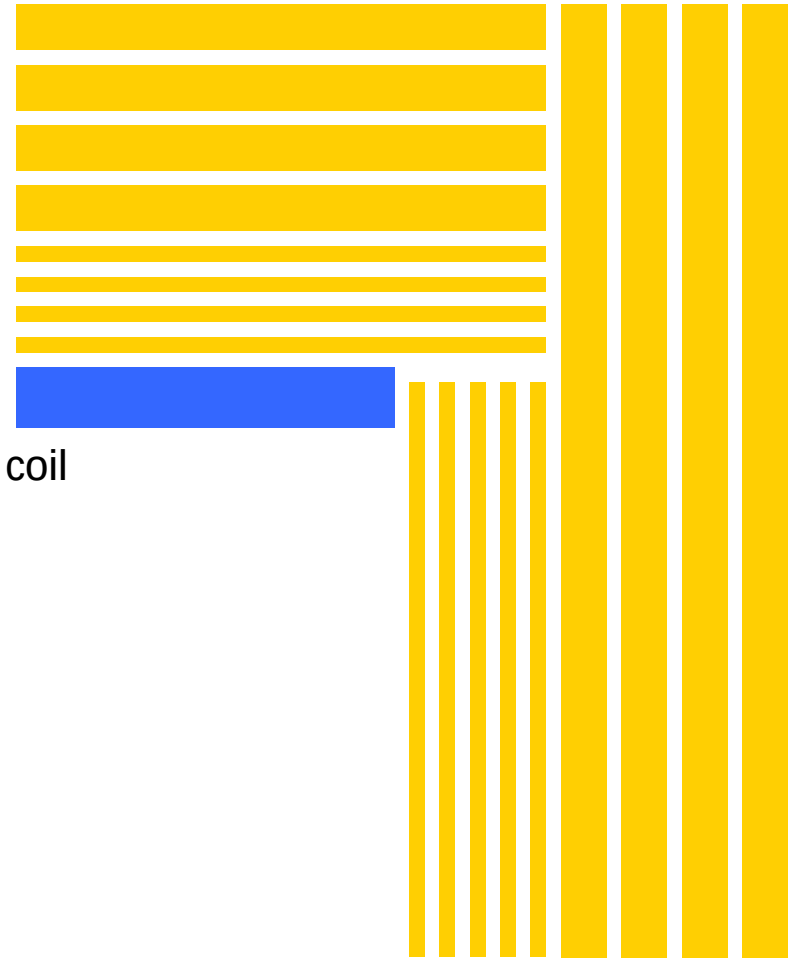


Fine (100mm) segmentation in barrel end-cap overlap region not realy needed.

Problems:

- Mechanical strength of thin plates
- Installation and access of end-cap detectors in case of radial rips. In particular for bottom detectors

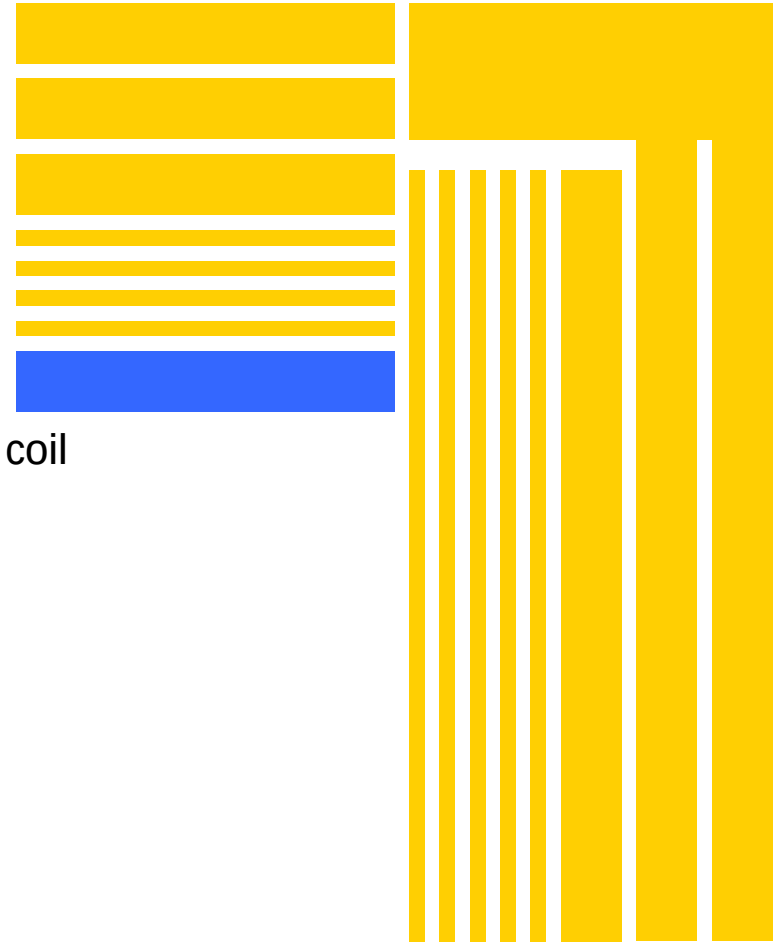
End-cap Design Proposal



Slightly longer barrel

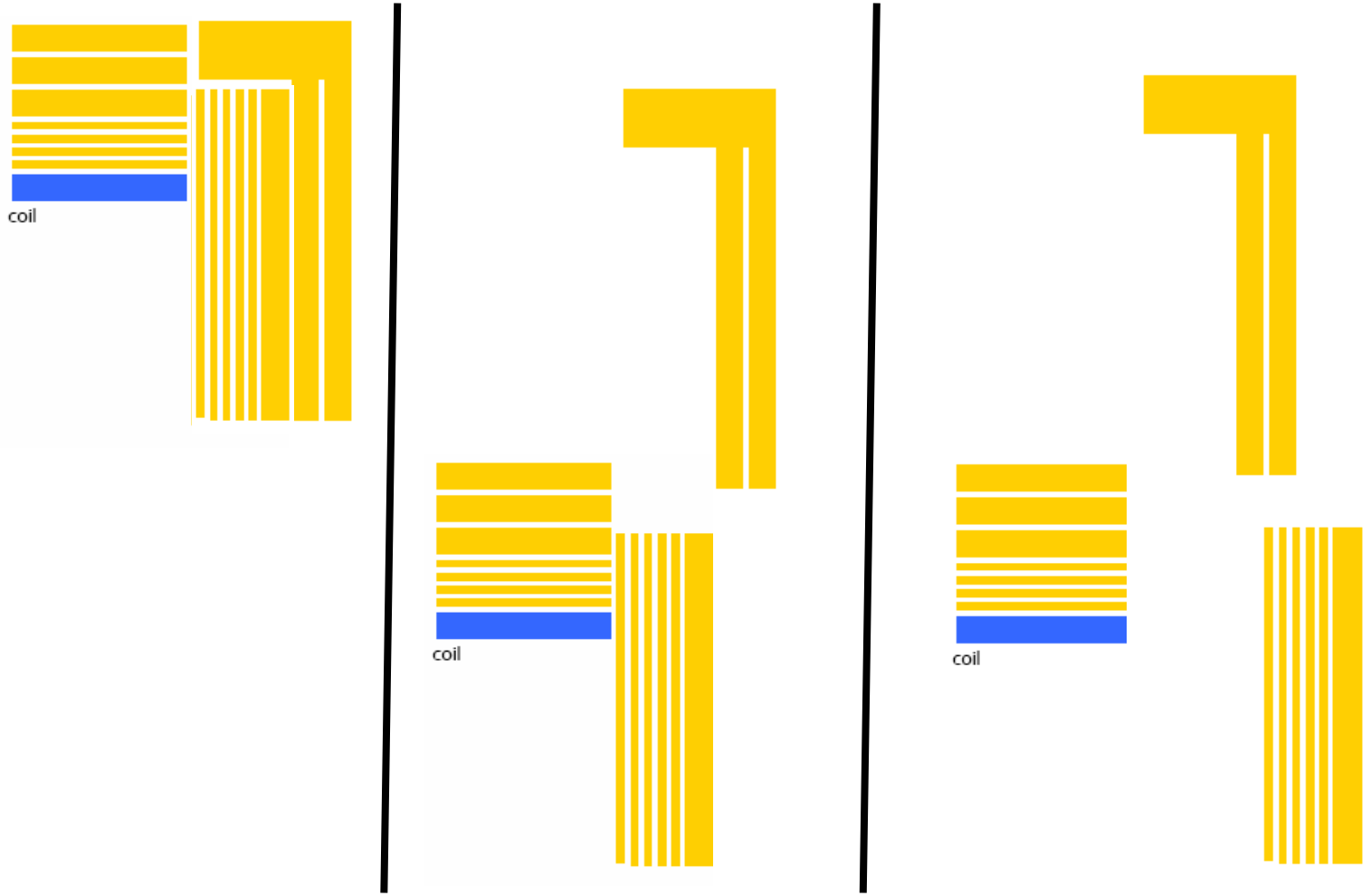
- Better mechanical design of end-cap
- Better installation and access of end-cap detectors in case of radial rips
- More difficult access when end-cap open. To be looked into.

End-cap Design Proposal

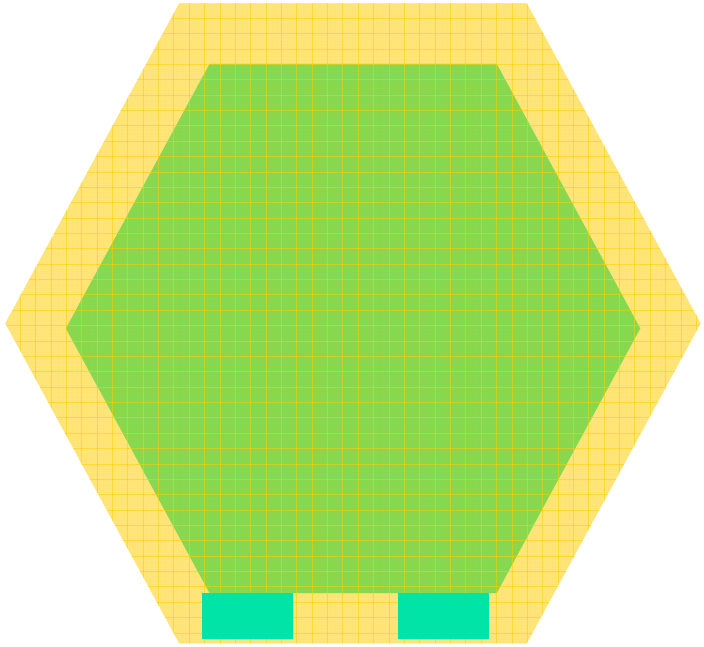


- 5 x 10cm
- 3 x 60cm
- 2.3m total iron thickness

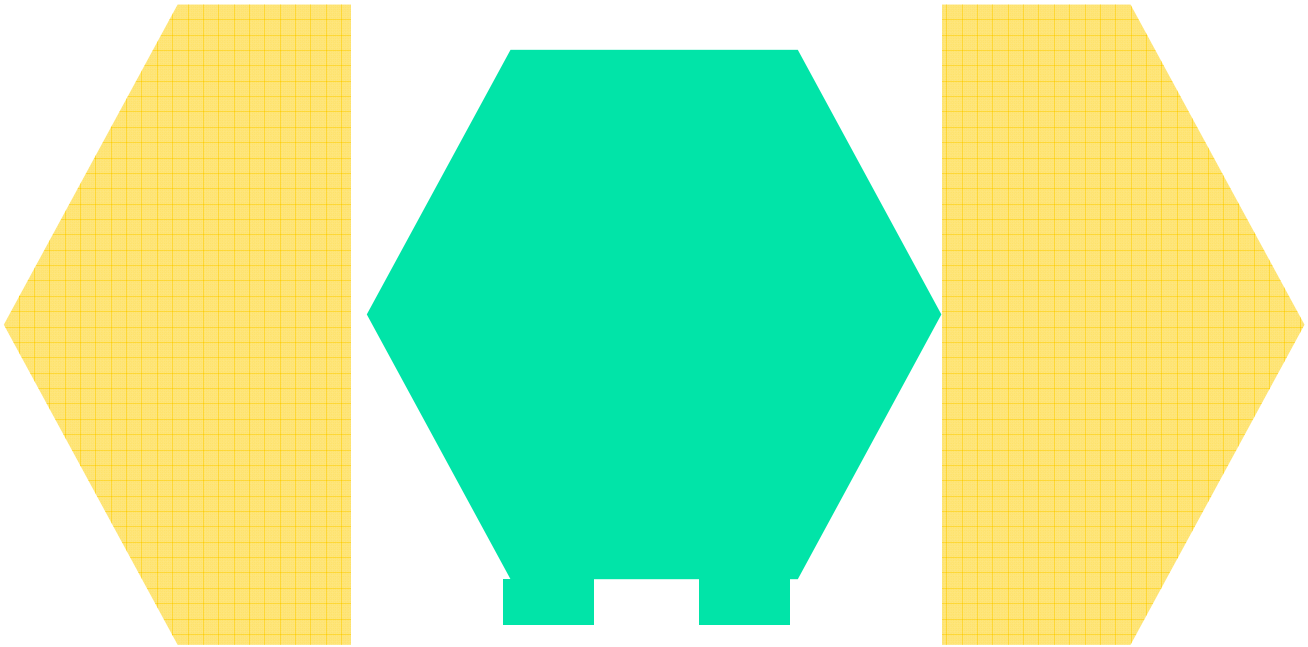
End-cap Design Proposal



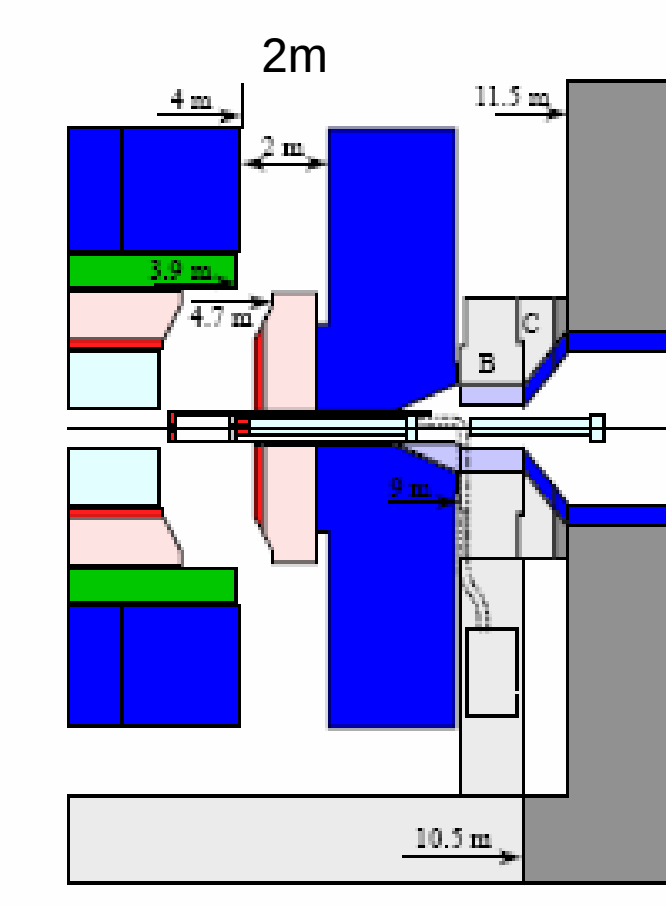
End-cap Design Proposal

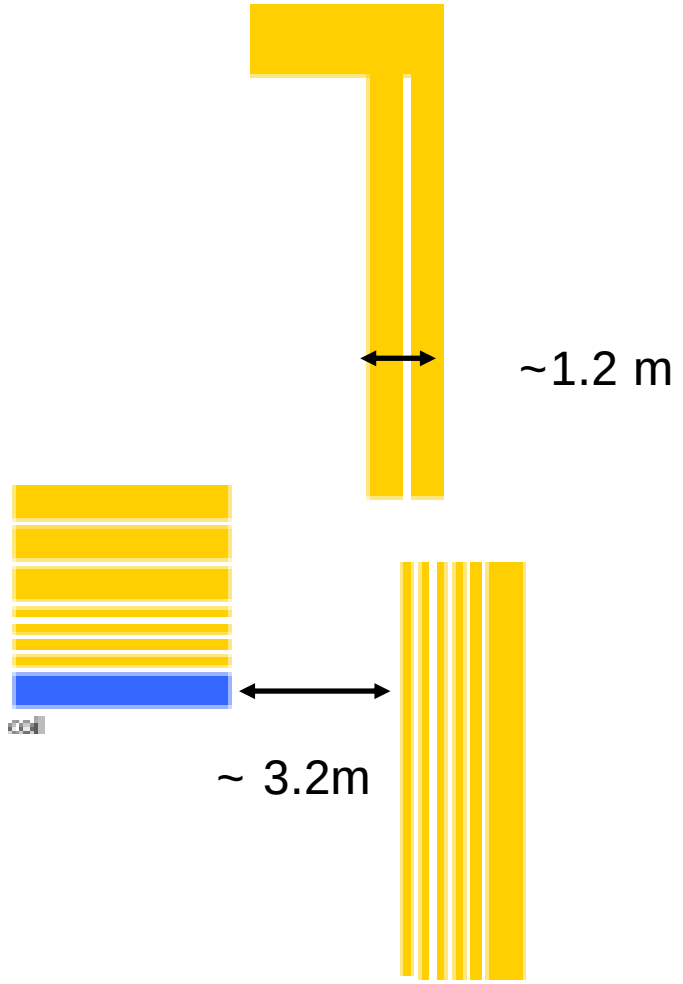


End-cap Design Proposal



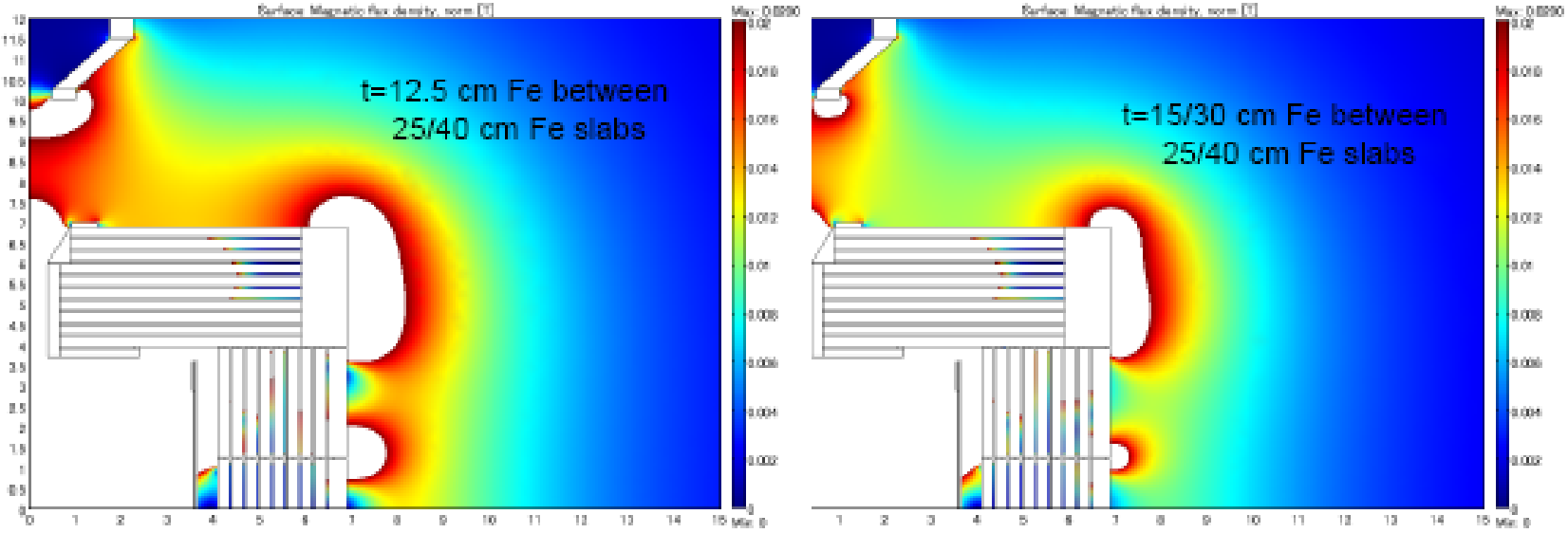
End-cap Opening





End Cap Design

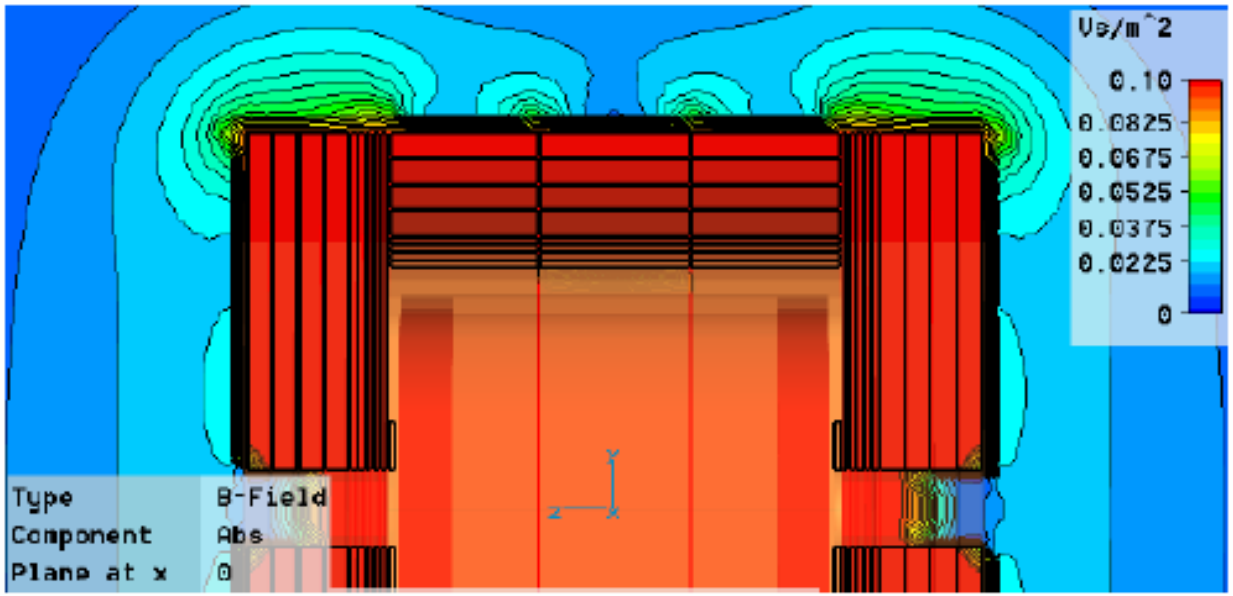
B = 3.5 T Gap partially filled with Fe Y.Sugimoto



In order to achieve the required stray field of <200 G at 0.5m (thickness 2.5m)

- Much more iron is needed or
- Gaps between rings should be partially (>50%) filled with iron, however need space for cables, cooling,... (2 D calculation)

3 D calculations B = 4 T A.Petrov, B.Krause



iron thickness 2.16m

Iron thickness of 2.3m

Compromise on B = 3.5T

-> stray field should be fine