3-d Analysis of Q1BpF with Q1eF for 4K Operation

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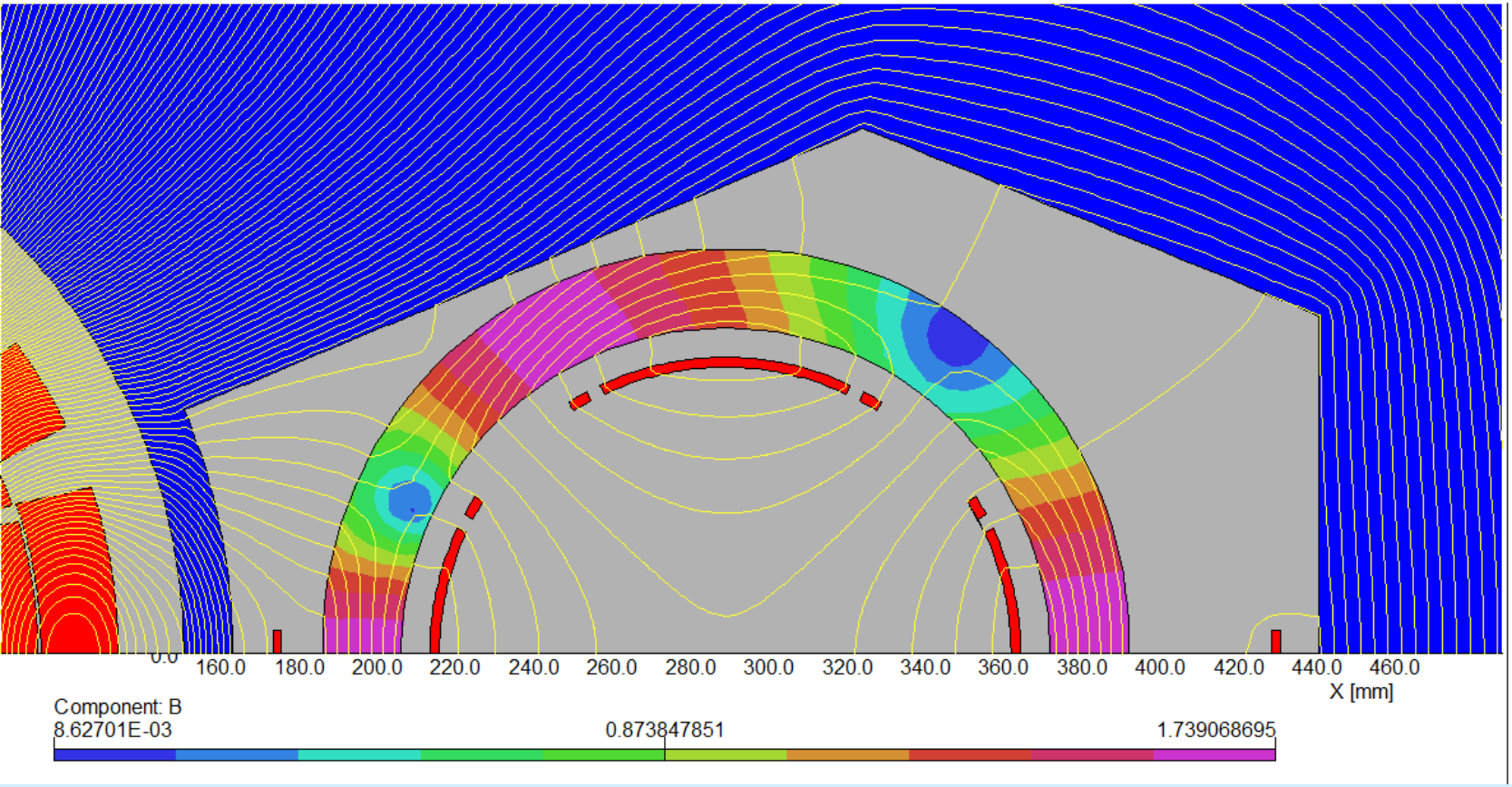
Overview

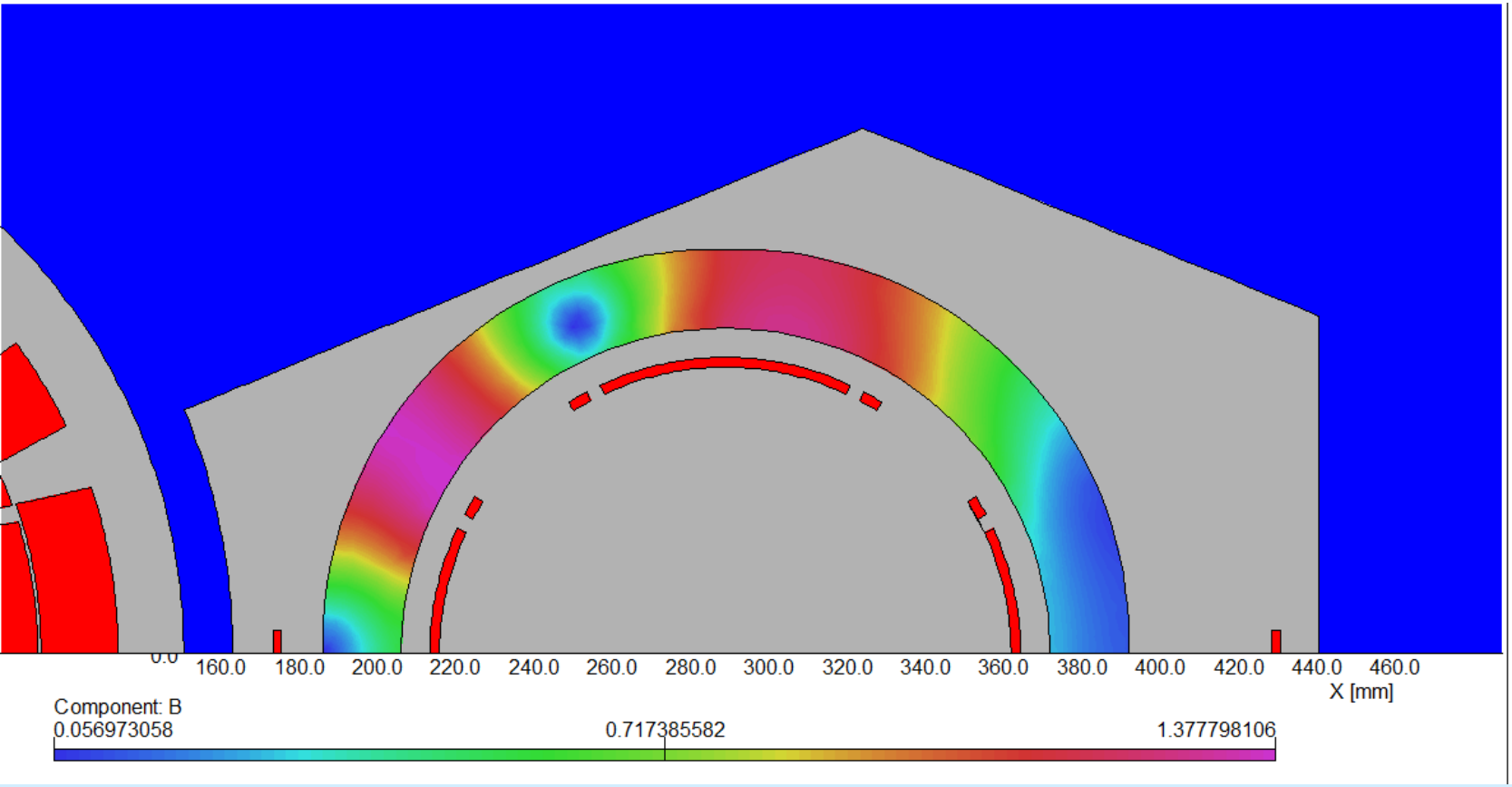
- **Work in progress for 3-d calculations of Q1Bpf with Q1eF to make sure that we have an acceptable 3-d solution for the interference between Q1BpF and Q1eF**
- **Earlier examination was for 2-d case only (cutout in the iron and additional tiny coils)**
- **Work in progress…**

Q1BpF and Q1eF with opposite (bad) polarity and additional control coils



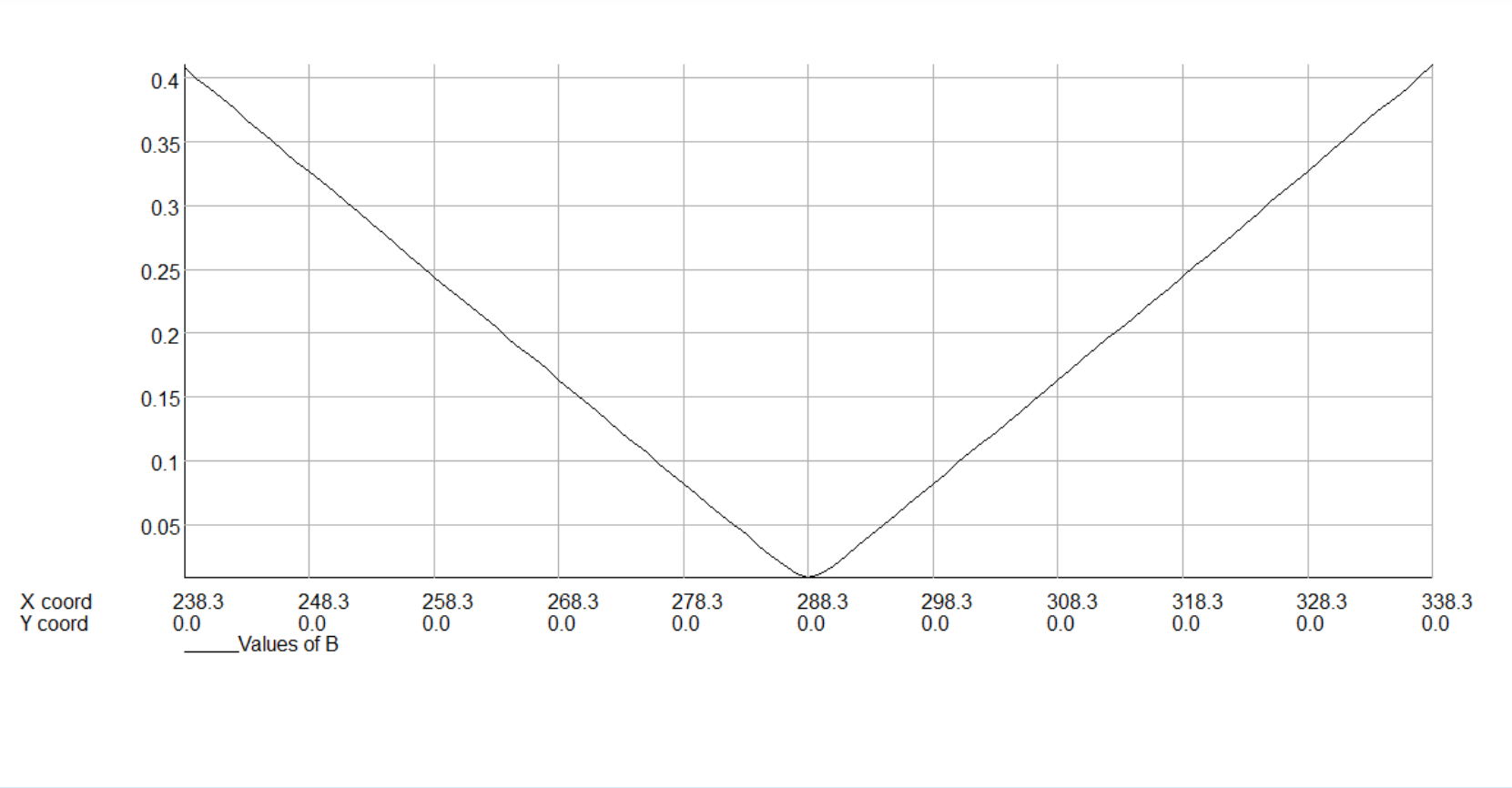
Additional little coil reduced the iron saturation (1.7 T rather than over 2 T)

Q1BpF (Q1eF with good polarity AND stronger control coils)



Looks good as the iron providing the shielding is less saturated (1.3 T)

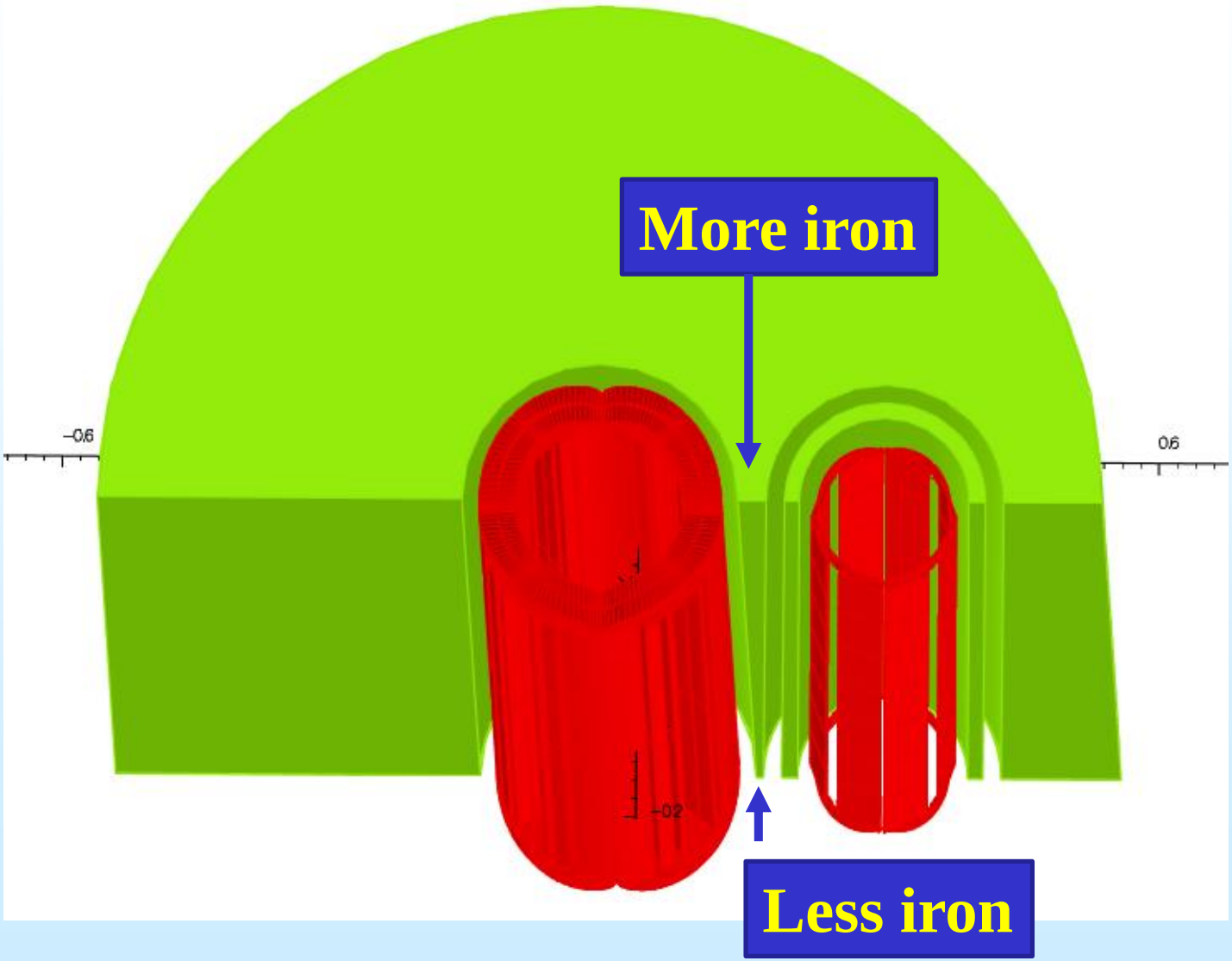
Q1BpF (Q1eF with good polarity AND stronger control coils)



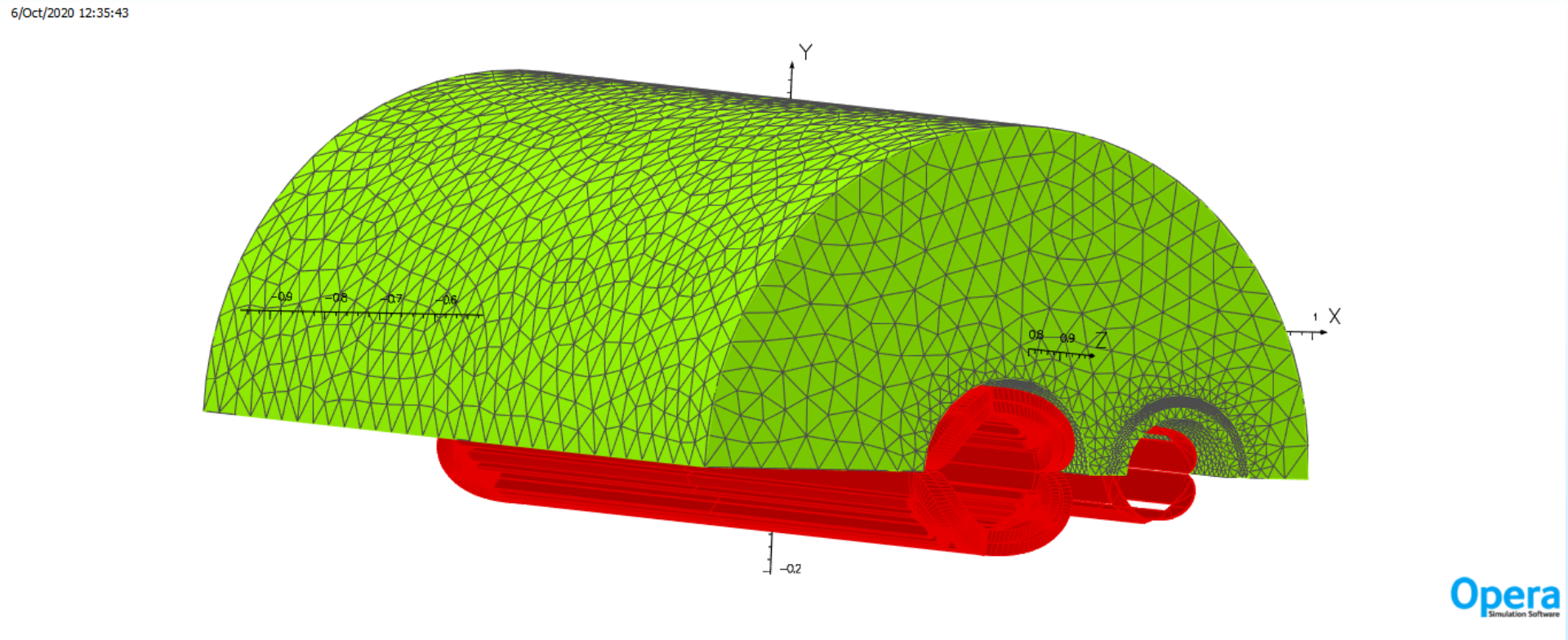
Field (gradient) on vertical axis looks good as well around the center of Q1eF (x=288.3)

3-d Initial Modelling (1)

First run without additional coils (cutout for reducing cross-talk & also additional coils, as needed)



3-d Initial Modelling (2)



Computer run in progress. For completeness sake, it will be better to use real Q1eF coils, when available (only representative coils used here)