

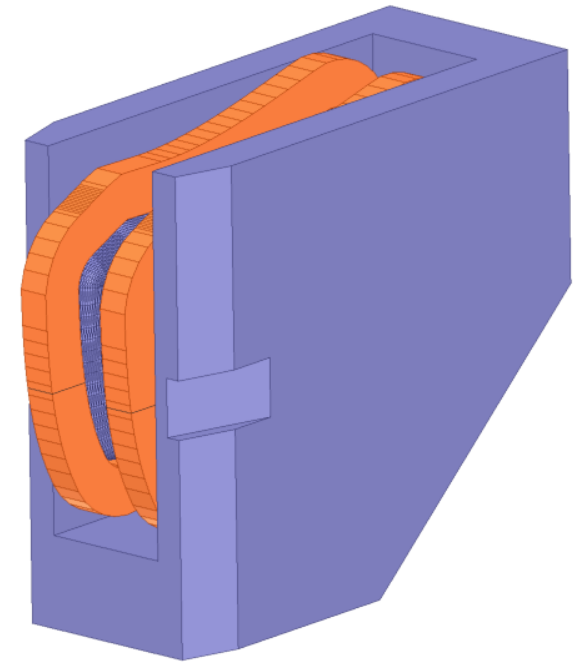
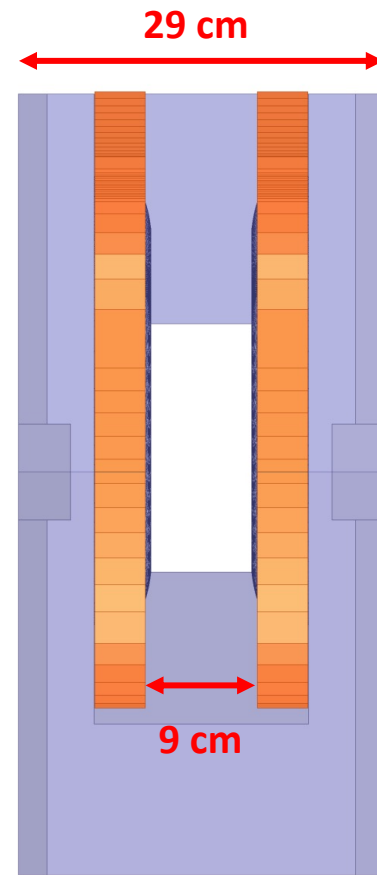
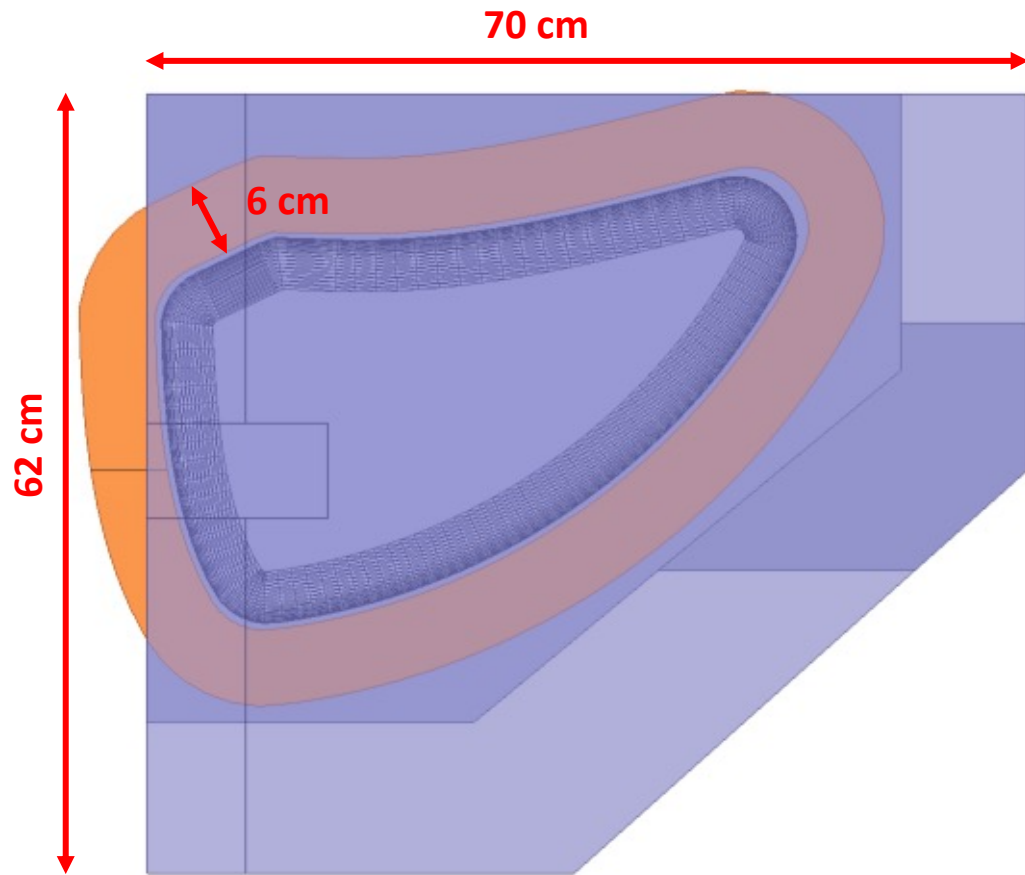
B-field map for the spectrometer dipole magnet

DarkLight@ARIEL Collaboration Meeting

Xiaqing Li (MIT)

December 3, 2022

DarkLight spectrometer magnet

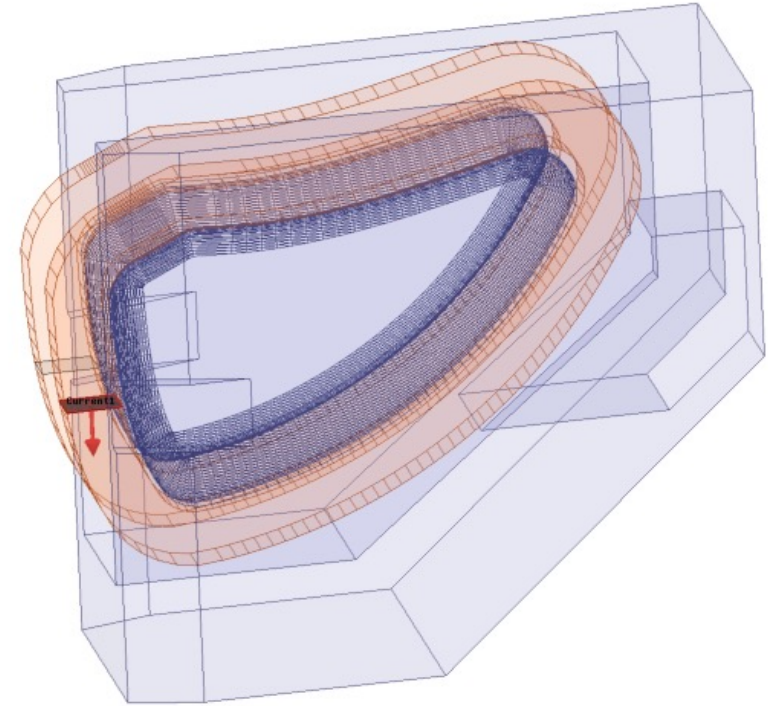


- Design by Harald
- CAD by Chris

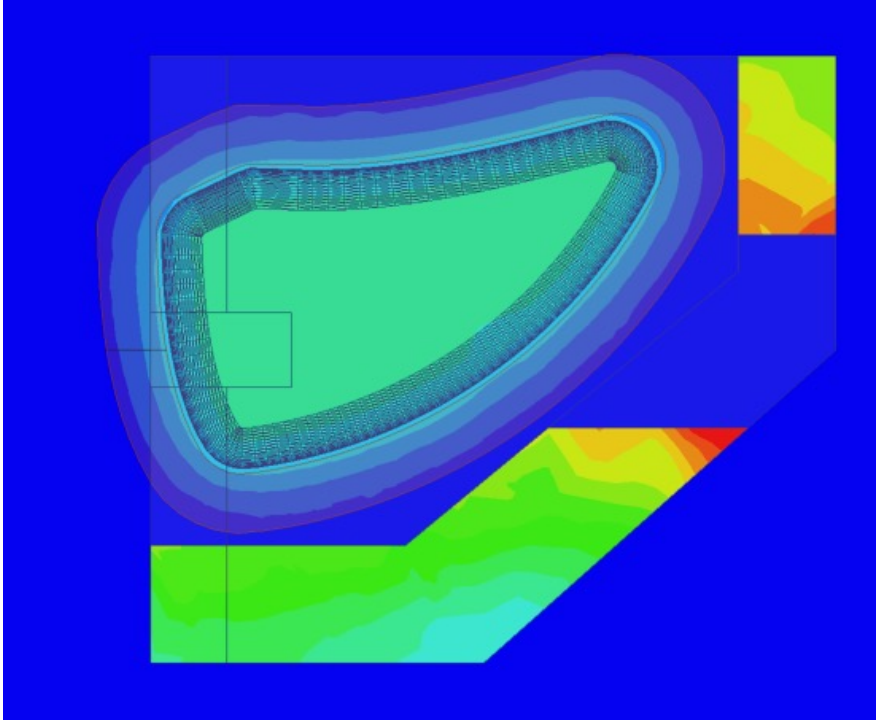
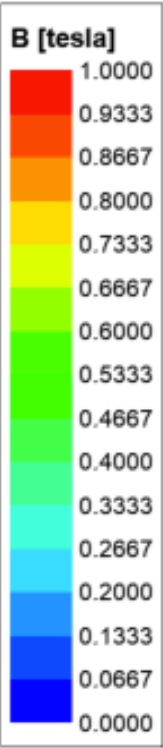
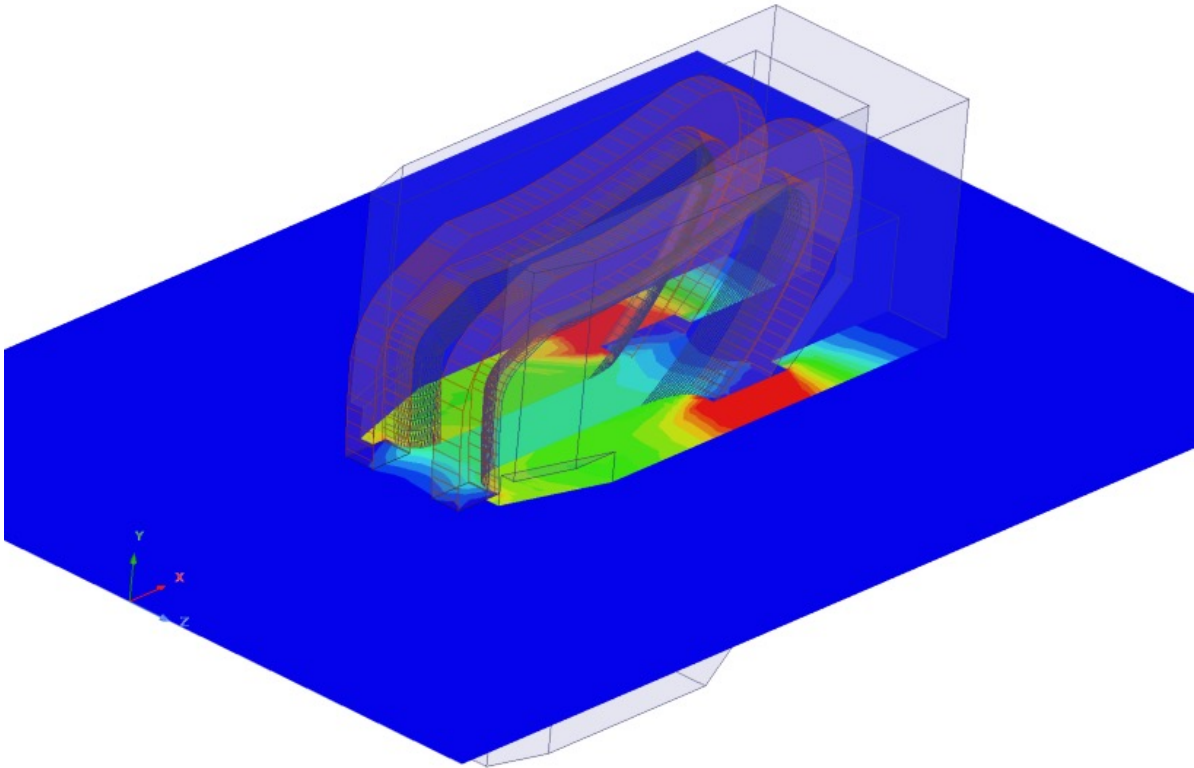
Ansys Maxwell3D setup

- $I = 192.369 \text{ A}$
- 60 turns in each coil
(Total current for each coil = 11542.14 A)
- Designed for 31 MeV of center momentum

- Solution type: magnetostatic
- Adaptive setup
 - Percent error: 1%
 - Max number of passes: 10
- Curved surface meshing: use dynamic surface resolution



Ansys Maxwell3D calculation results



Ansys Maxwell3D calculation results

