

MICE Partial Return Yoke Updates

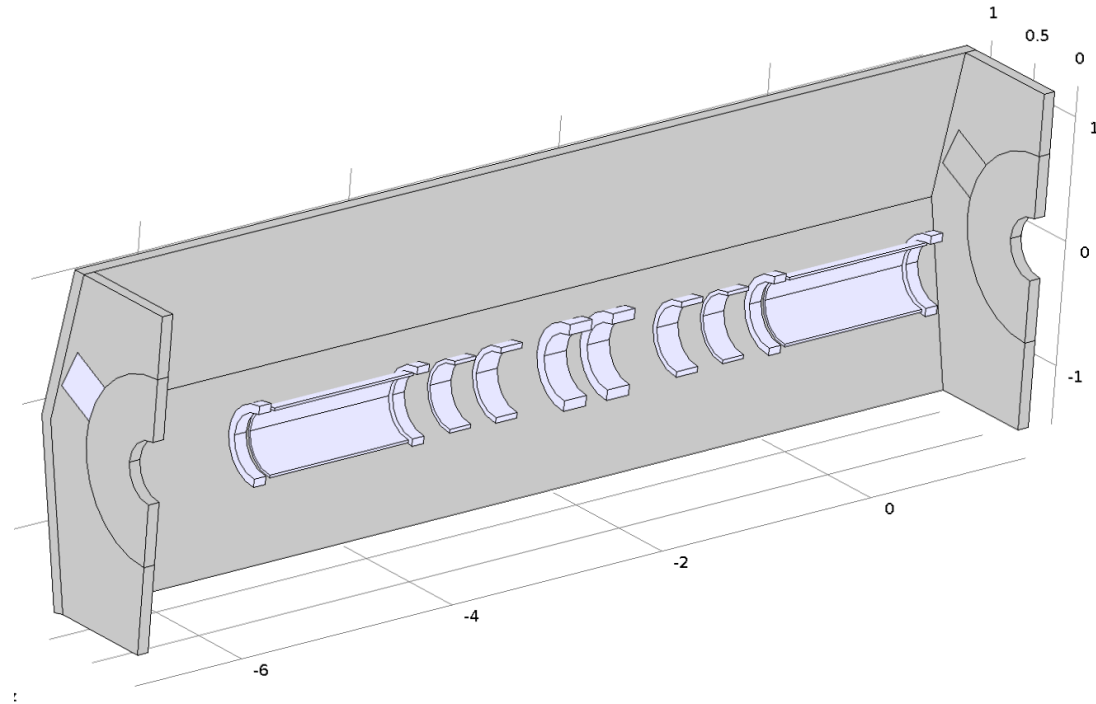
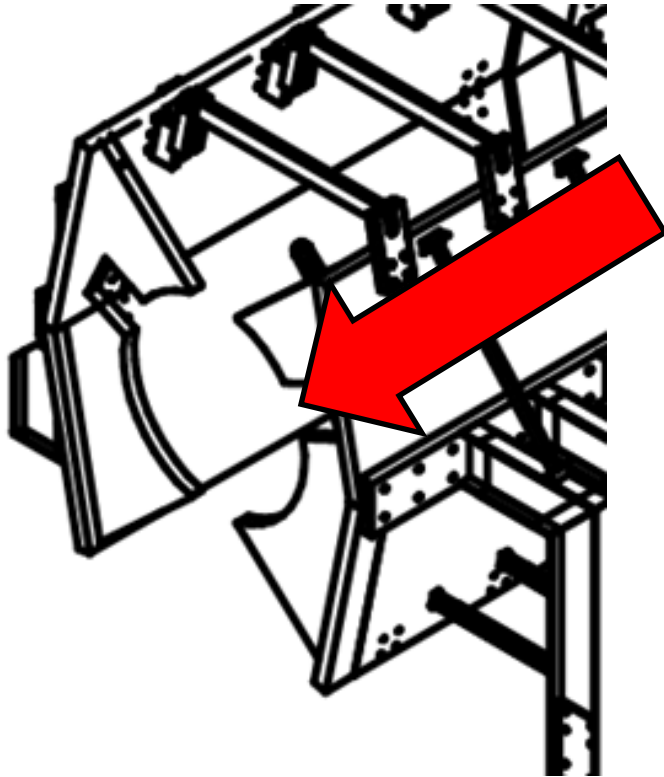
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Brookhaven National Laboratory
Advanced Accelerator Group

- Penetrations
 - Clamps for Virostek Shield
 - Interference

- Variation of AISI 1010 steel

Penetrations Virostek Shield

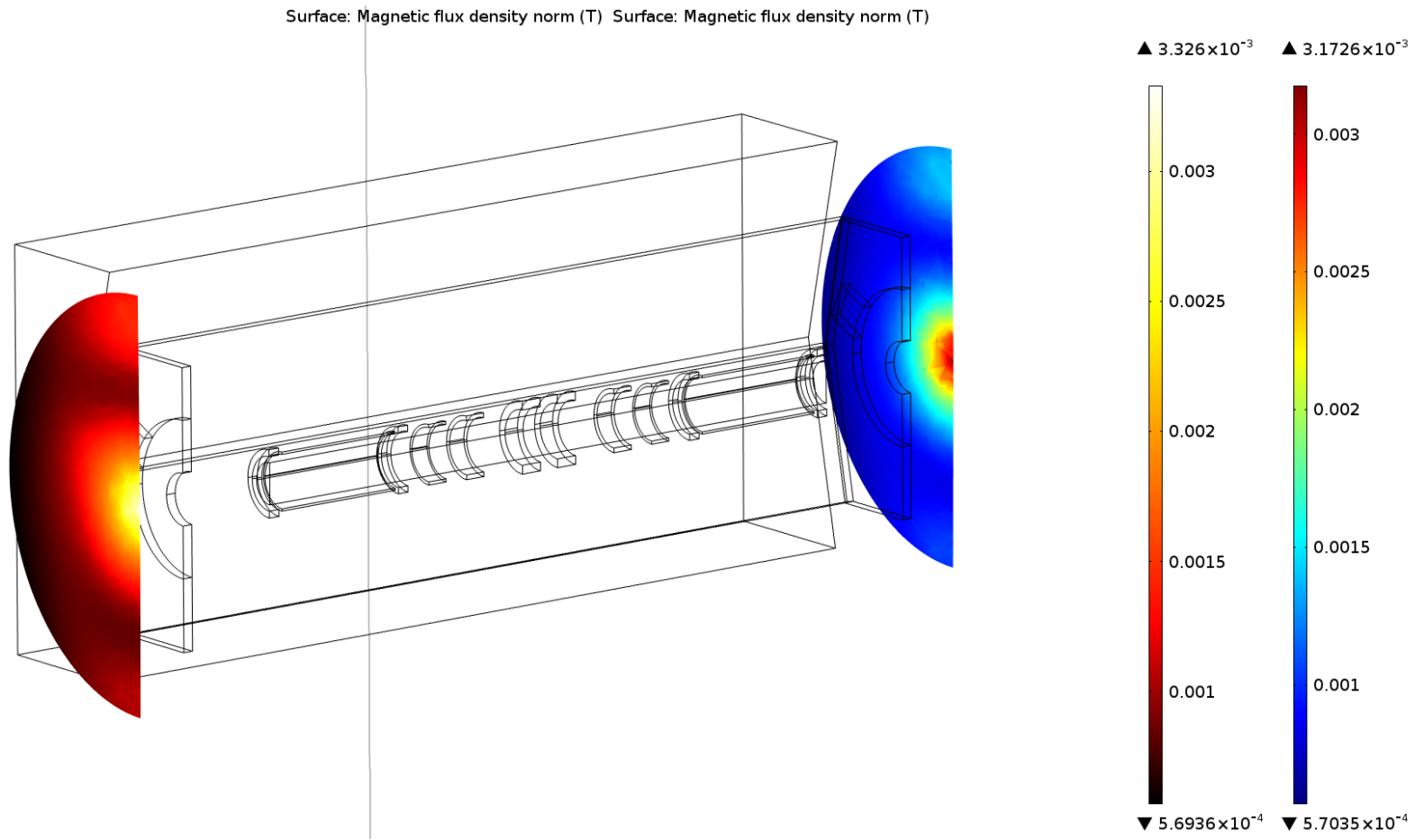
Openings for clamps which hold Virostek disc in place



Courtesy of J. Tarrant

Implemented on one side only for comparison

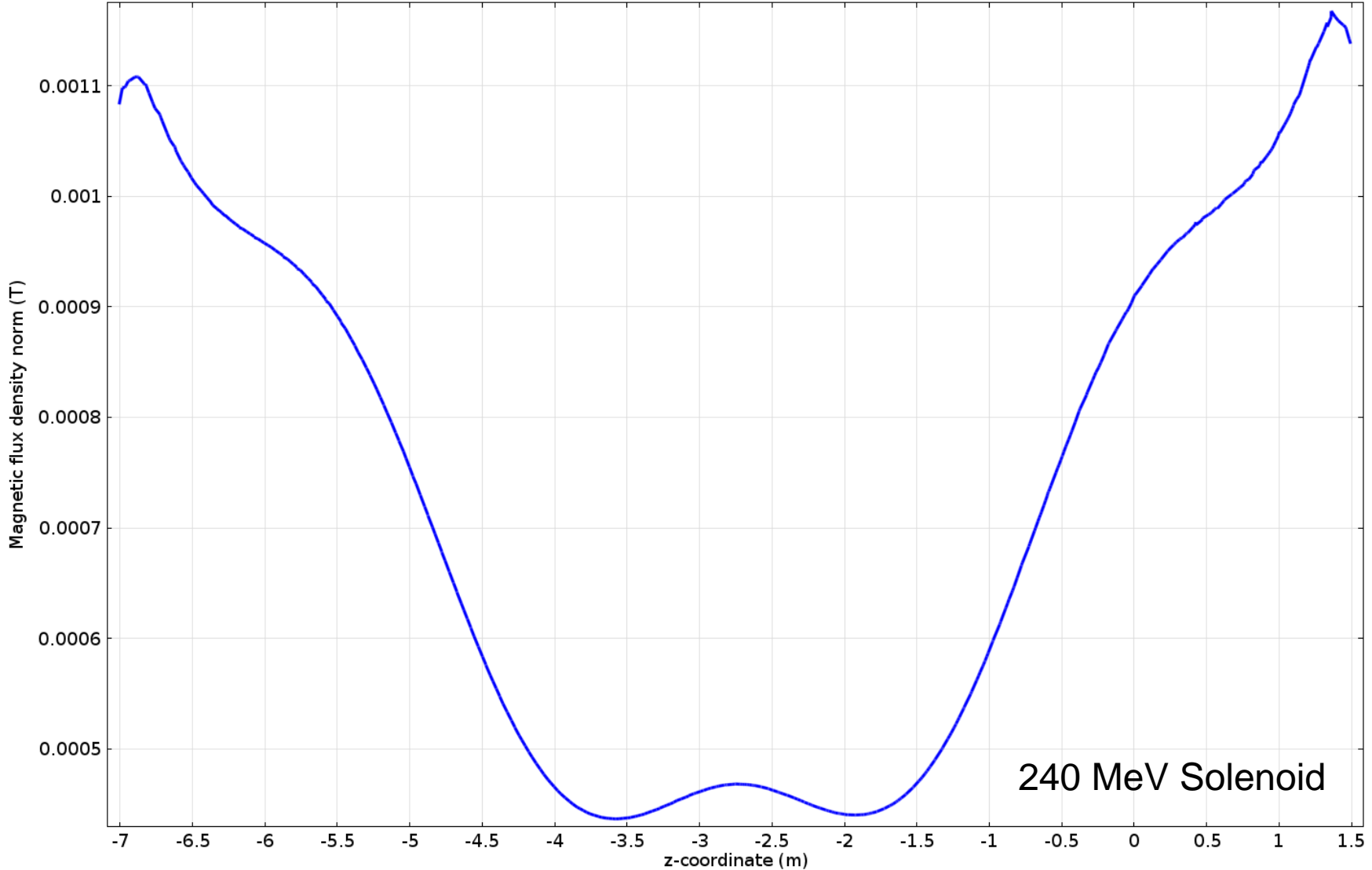
Field 240 MeV Solenoid



Field at Radius 1.5 m

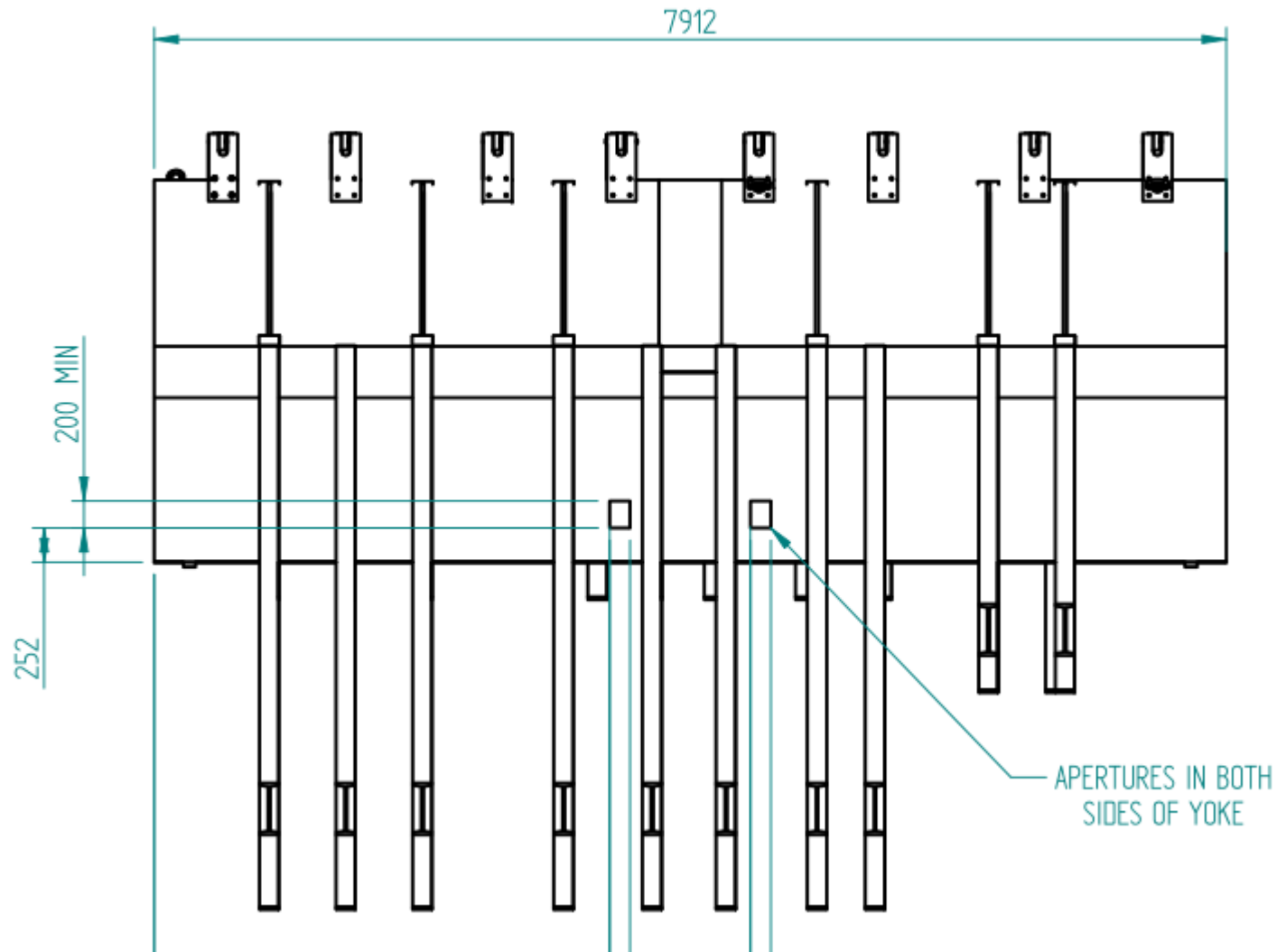


Line Graph: Magnetic flux density norm (T)

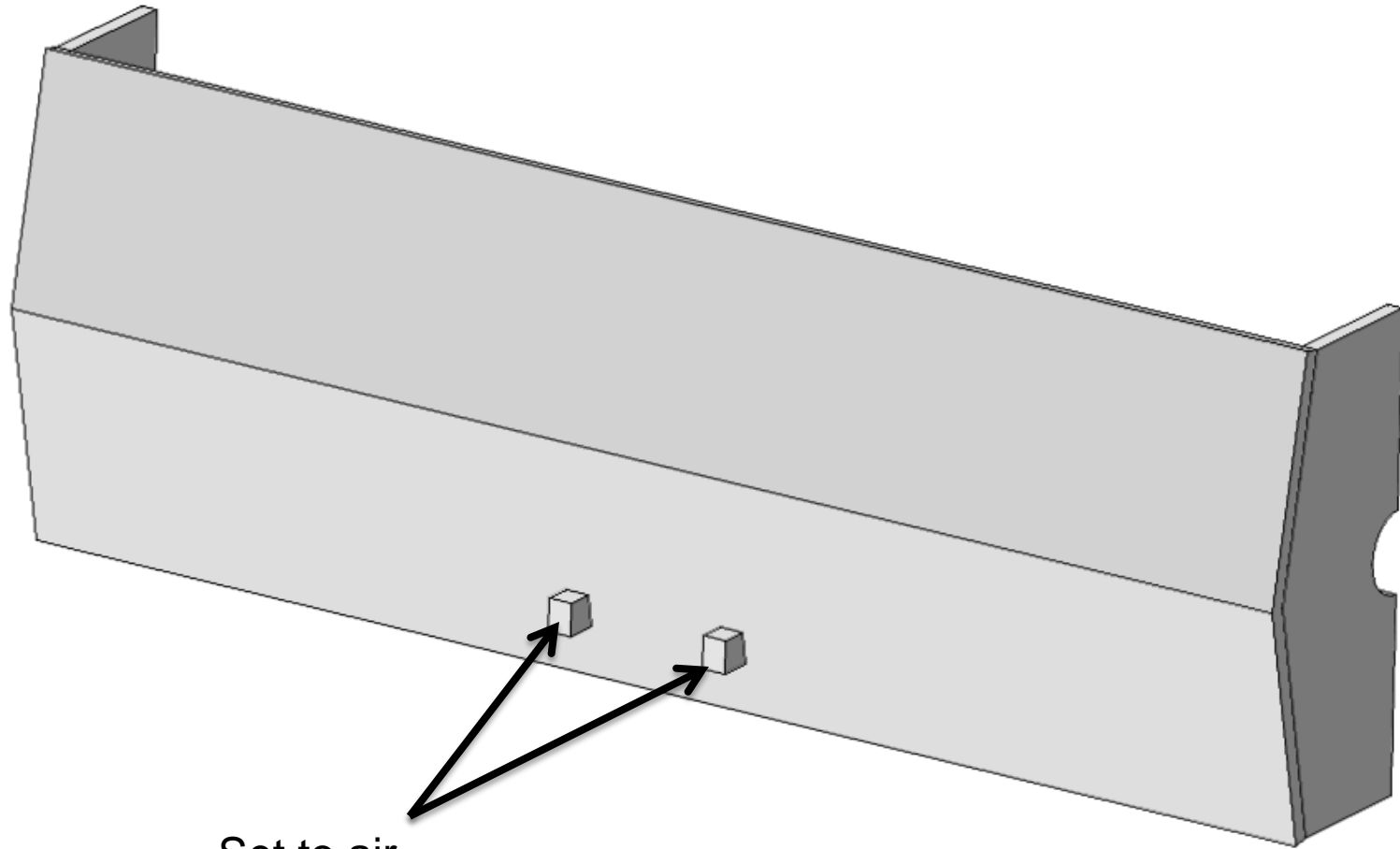


240 MeV Solenoid

Interference (J. Tarrant, 7/10/13)



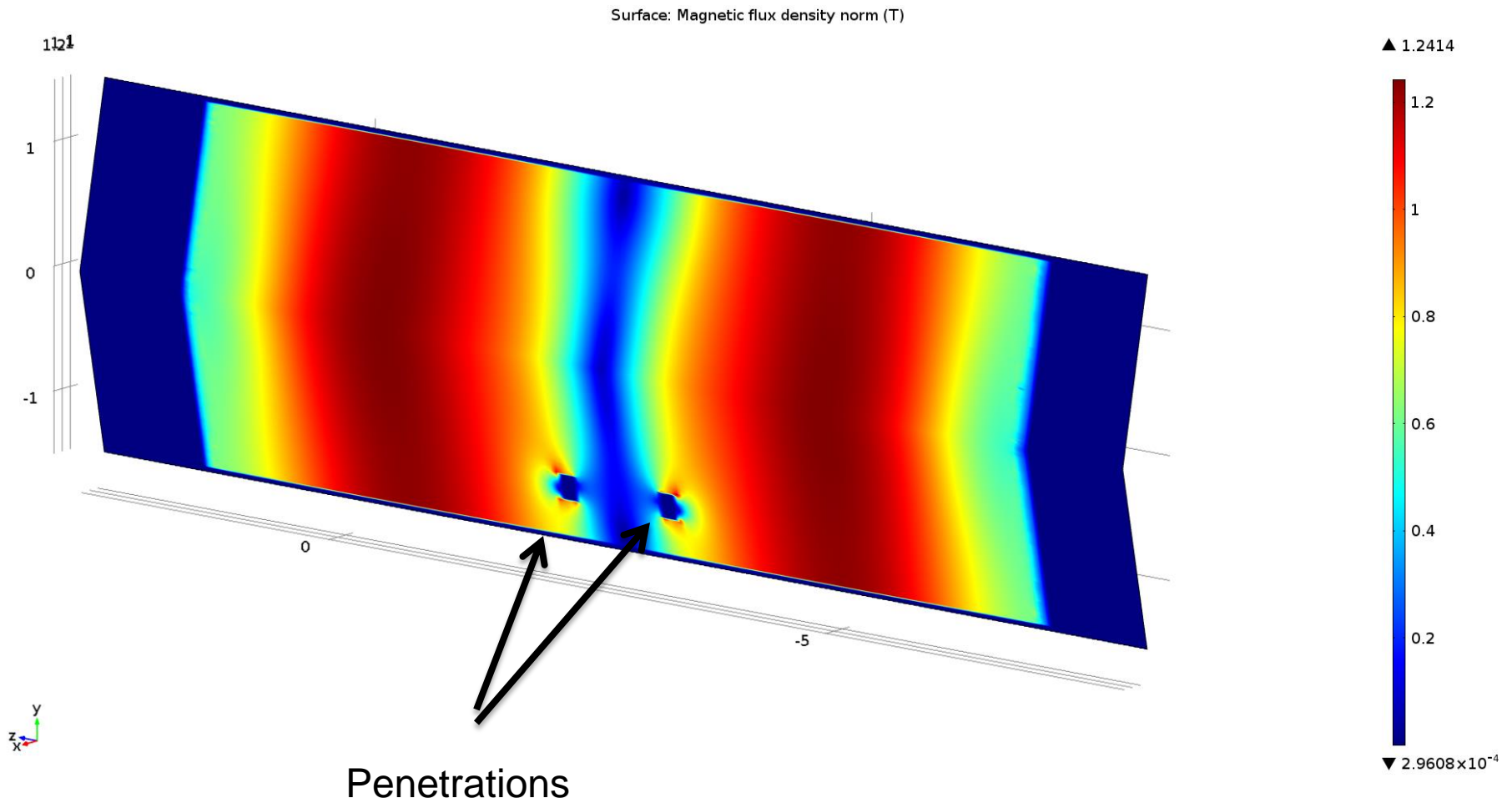
Model Overview



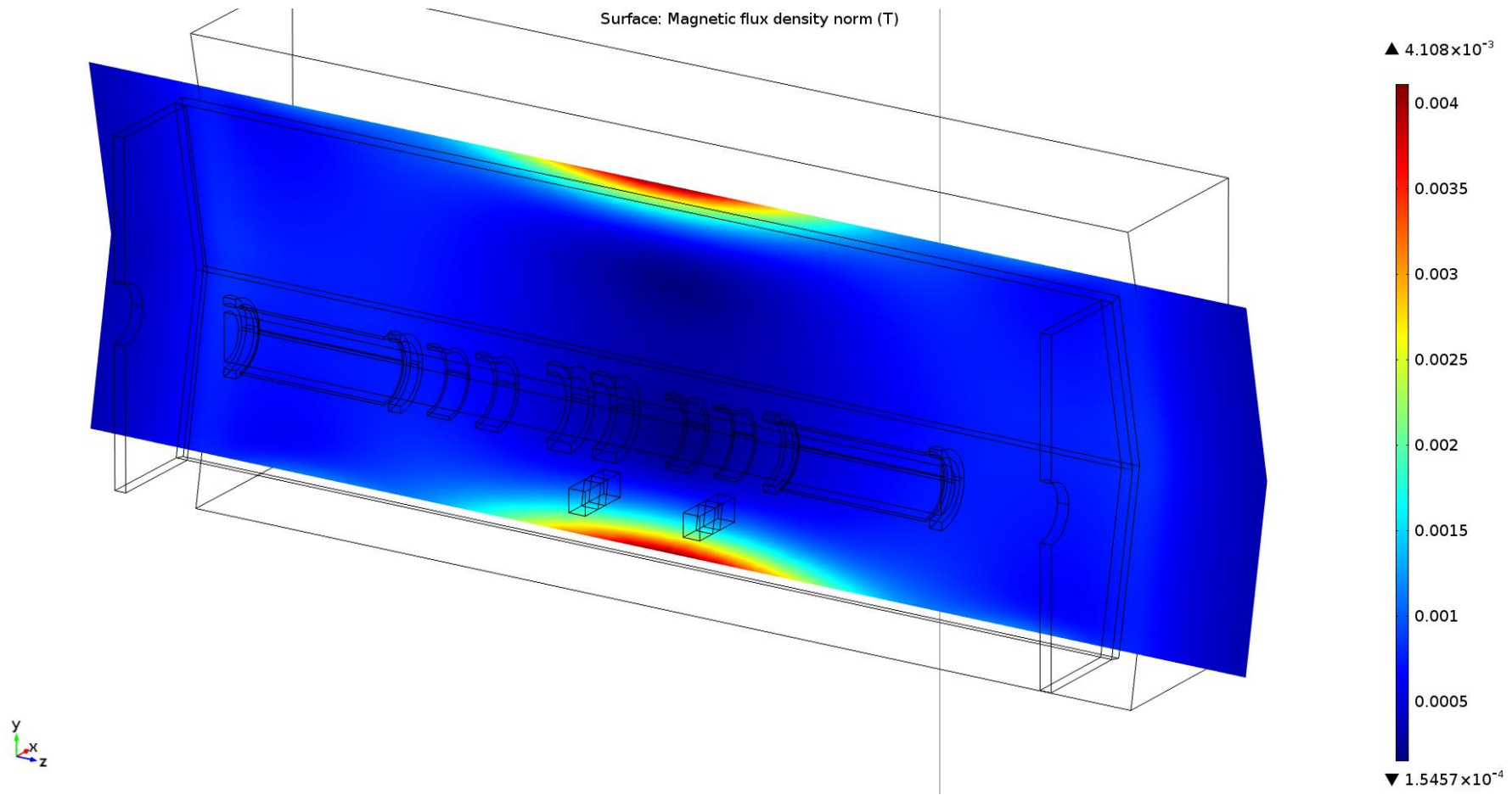
Set to air



Magnetization



Field



AISI 1010 Steel

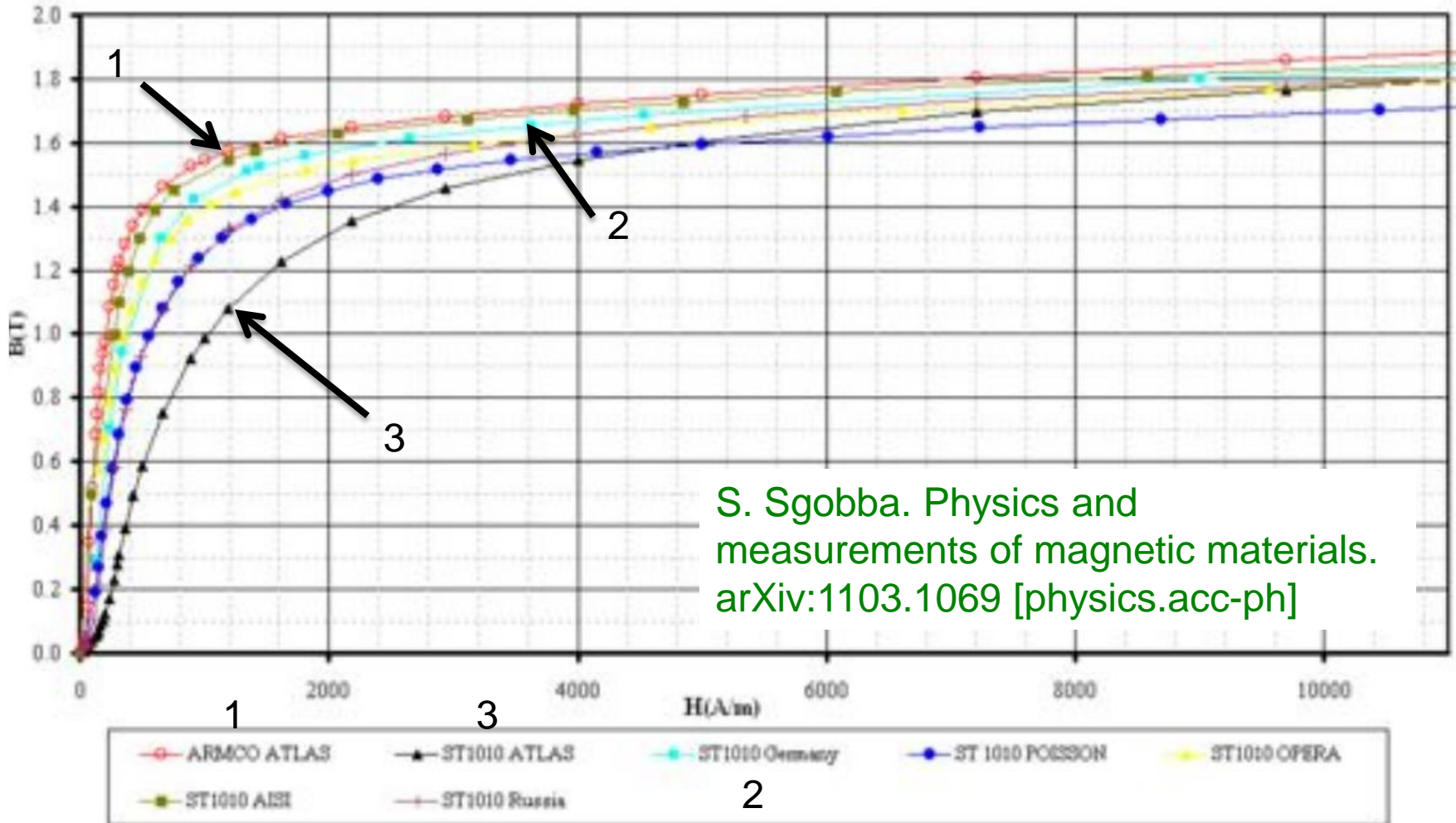
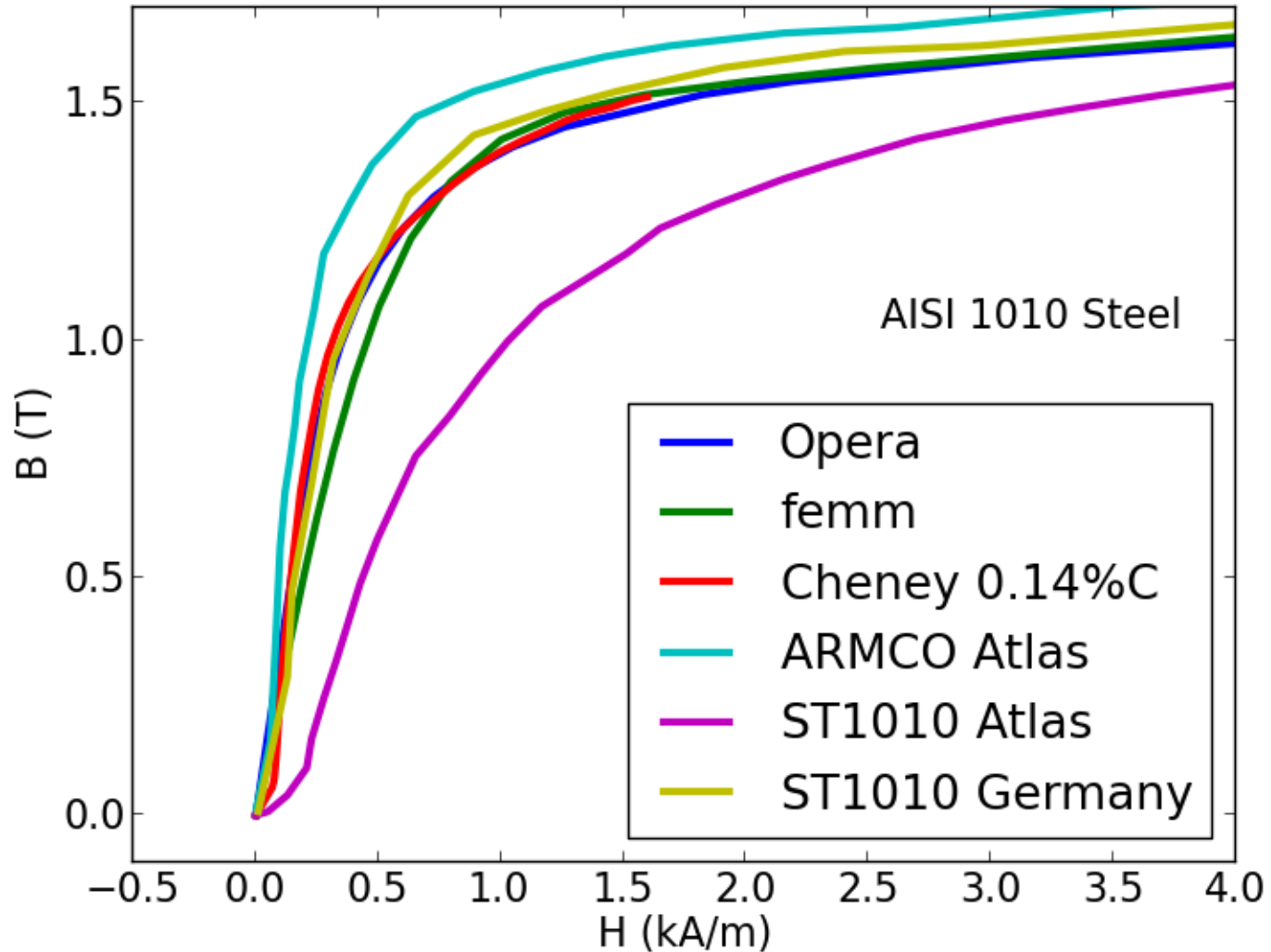
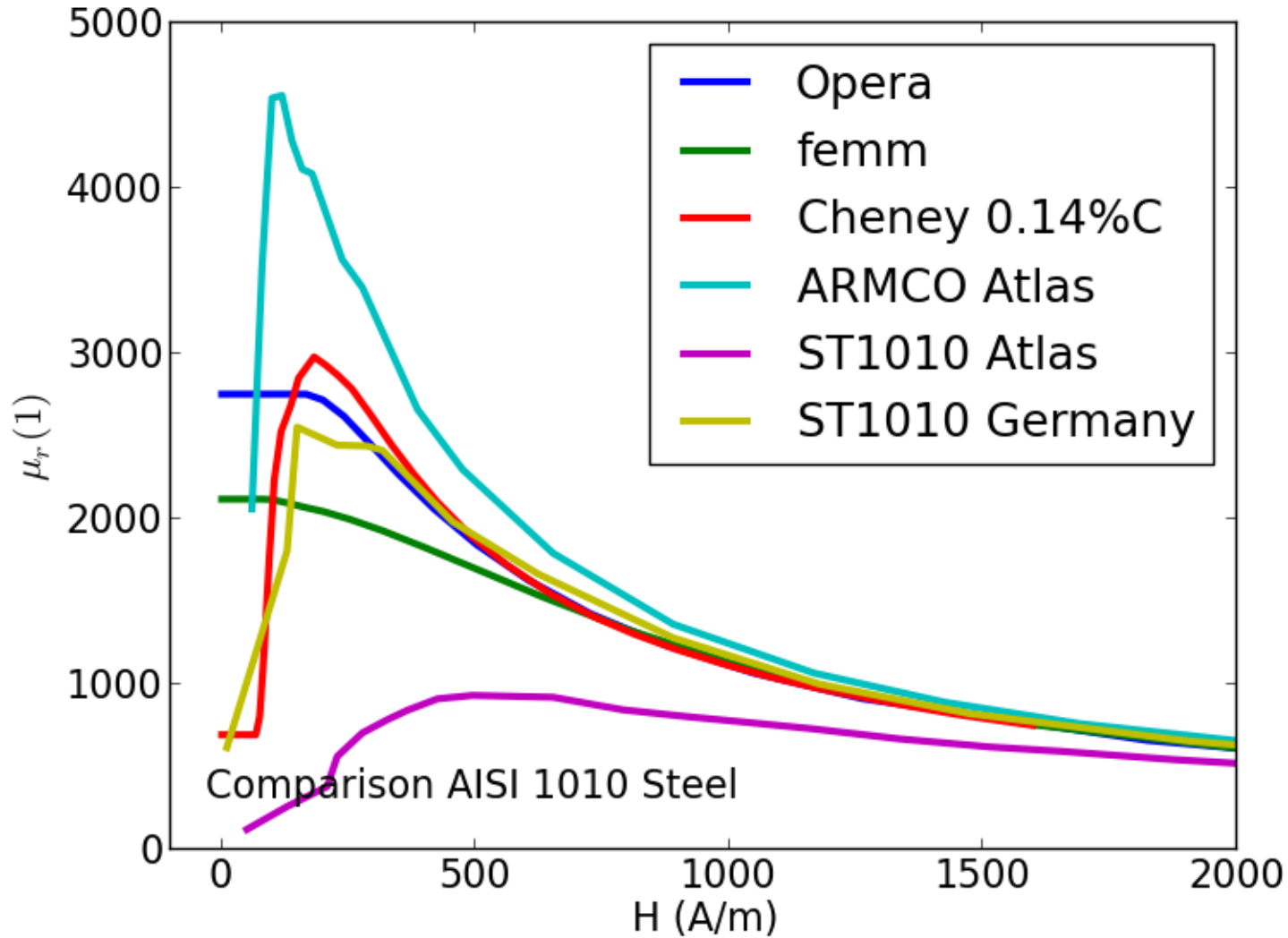


Fig. 3: Magnetization curves of different heats of 1010 constructional steels used as magnetic steel in different experiments (courtesy A. Vorozhtsov)

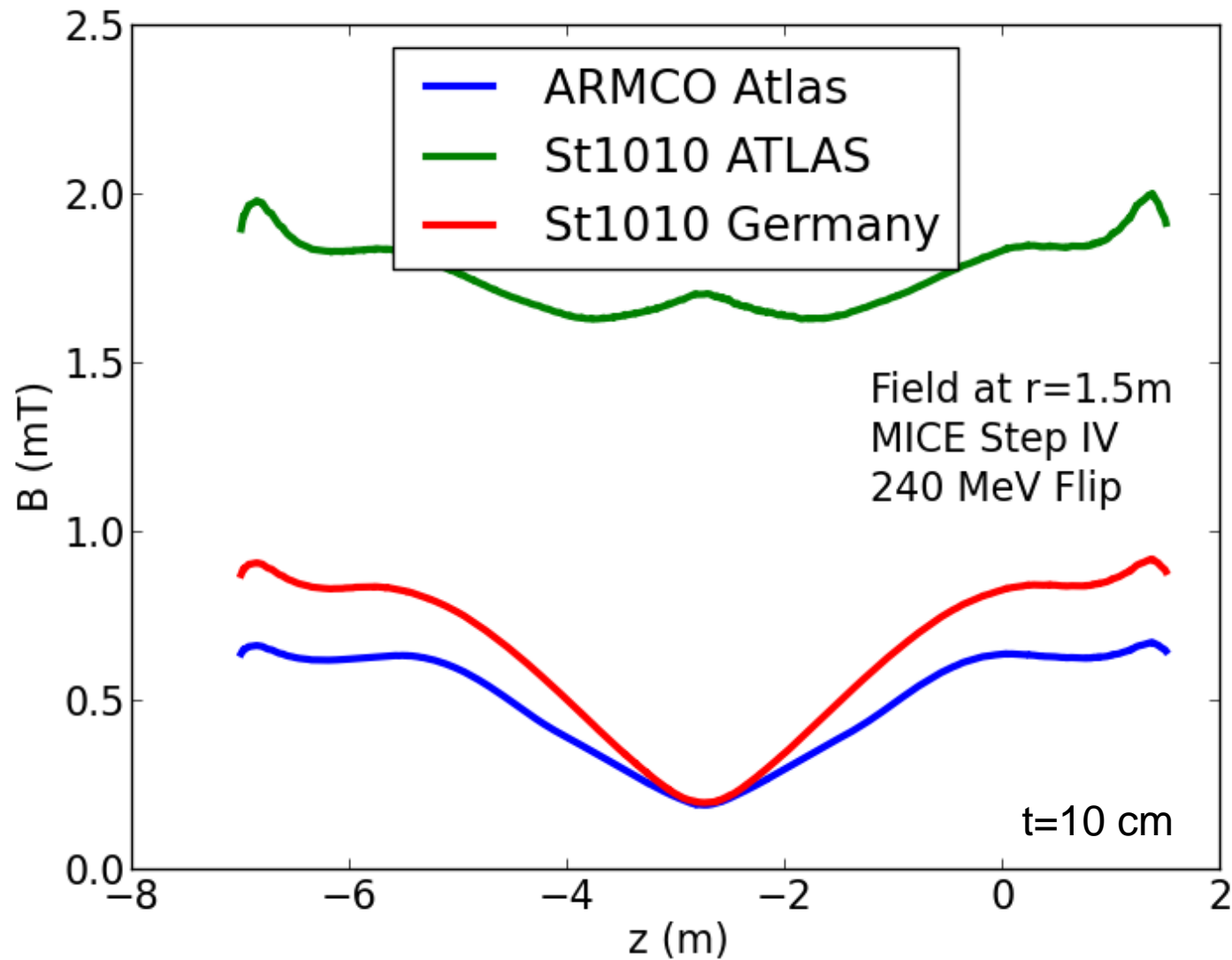
Magnetization Curves



Magnetization Curves



Field at R=1.5 m



- Penetrations
 - No issue
- AISI 1010 variation
 - Considerable
 - Worst case: stray field 2 mT for 240 MeV Flip?