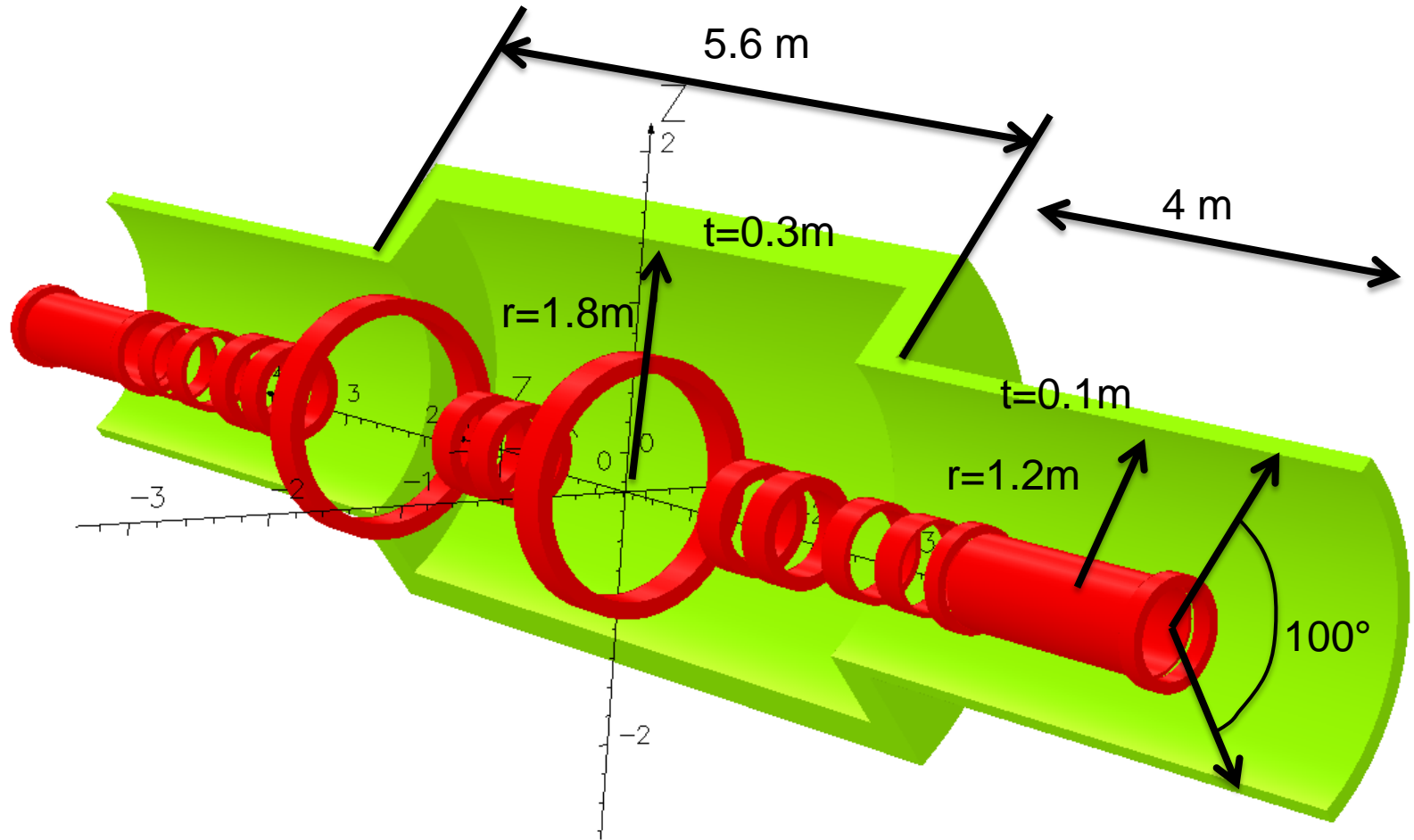


# MICE Shielding Update

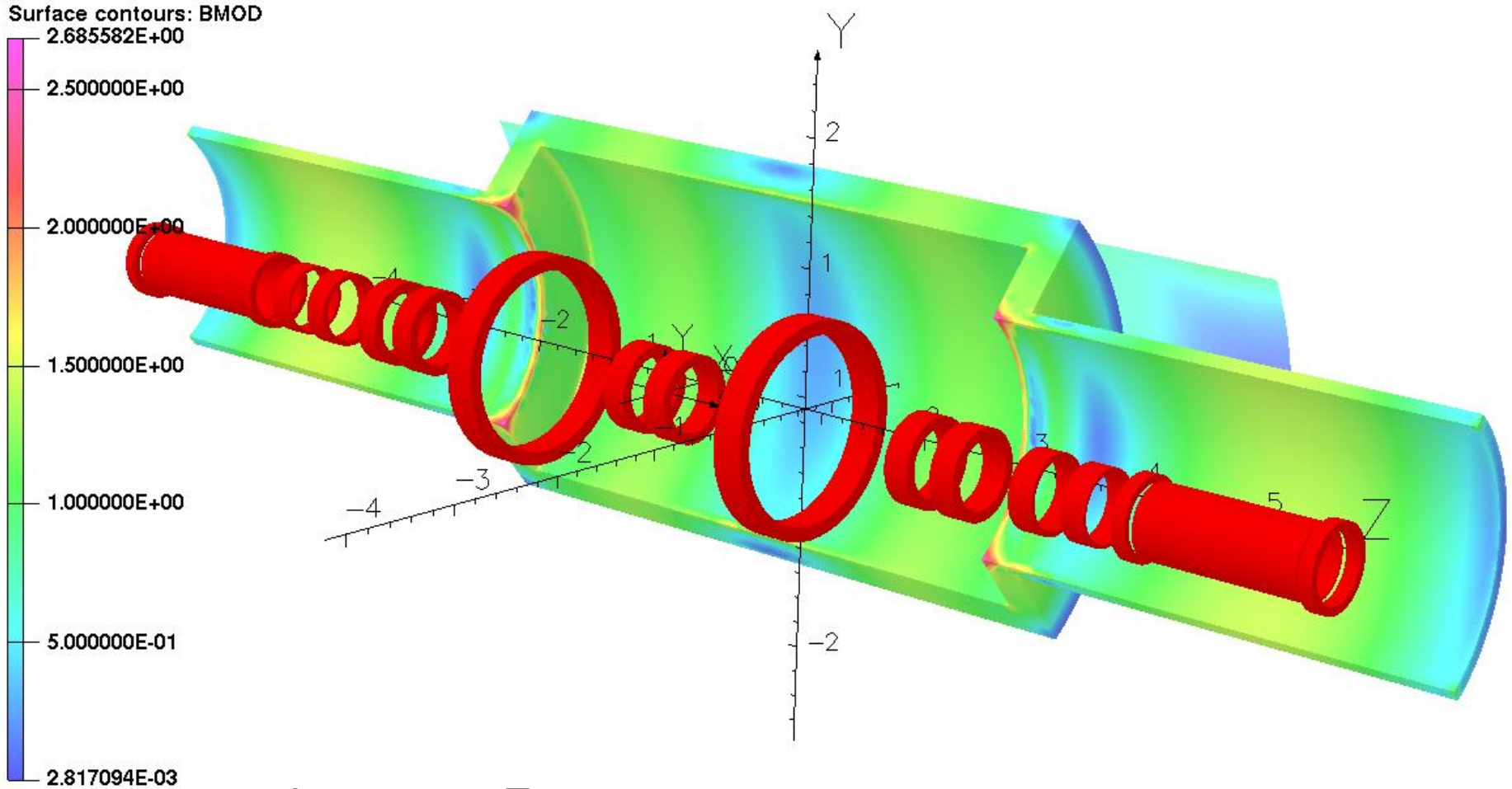
-

## Stage VI

Holger Witte  
Brookhaven National Laboratory  
Advanced Accelerator Group



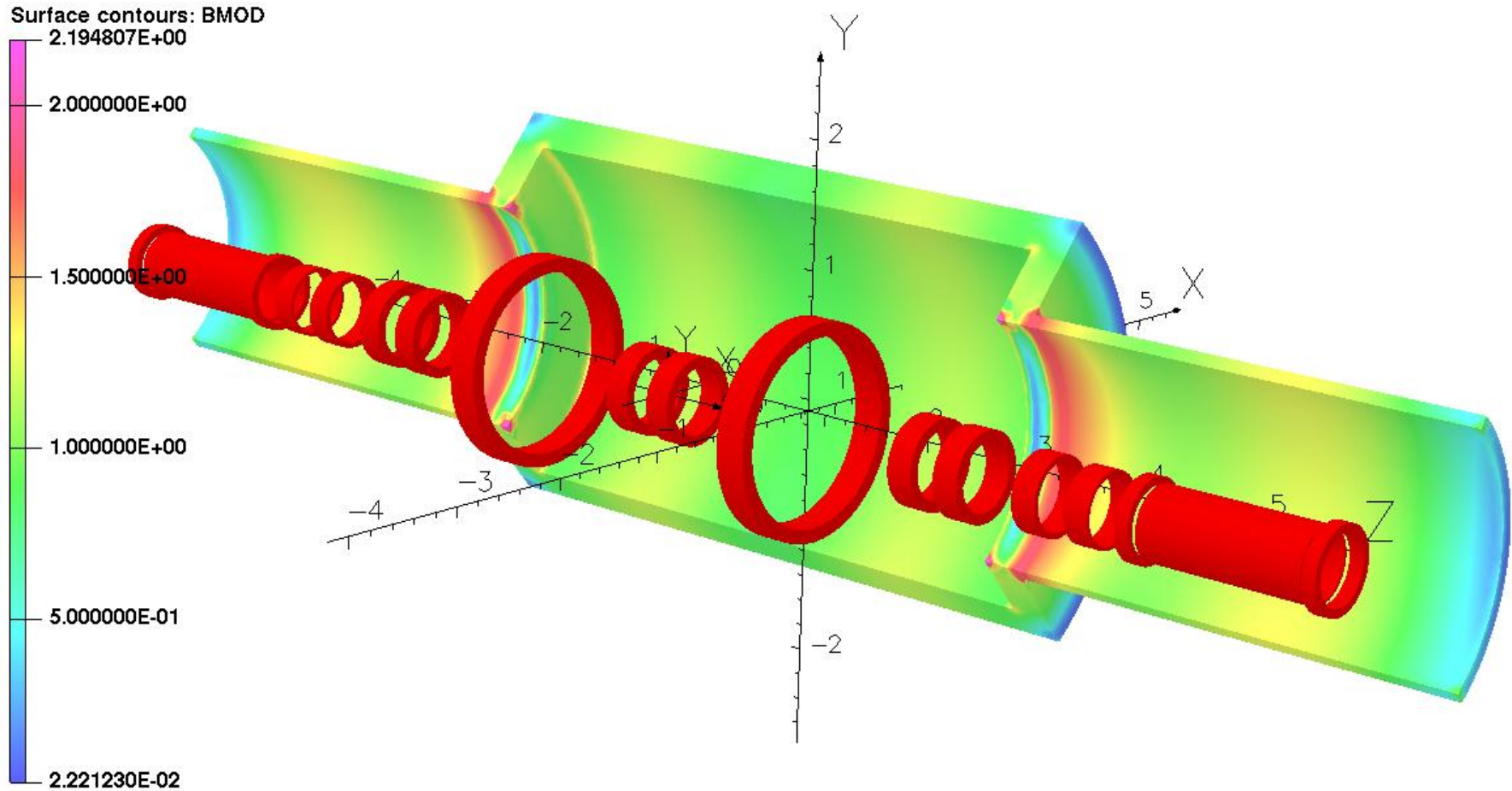
# Magnetization Flip 200 MeV



Average: 1.3T



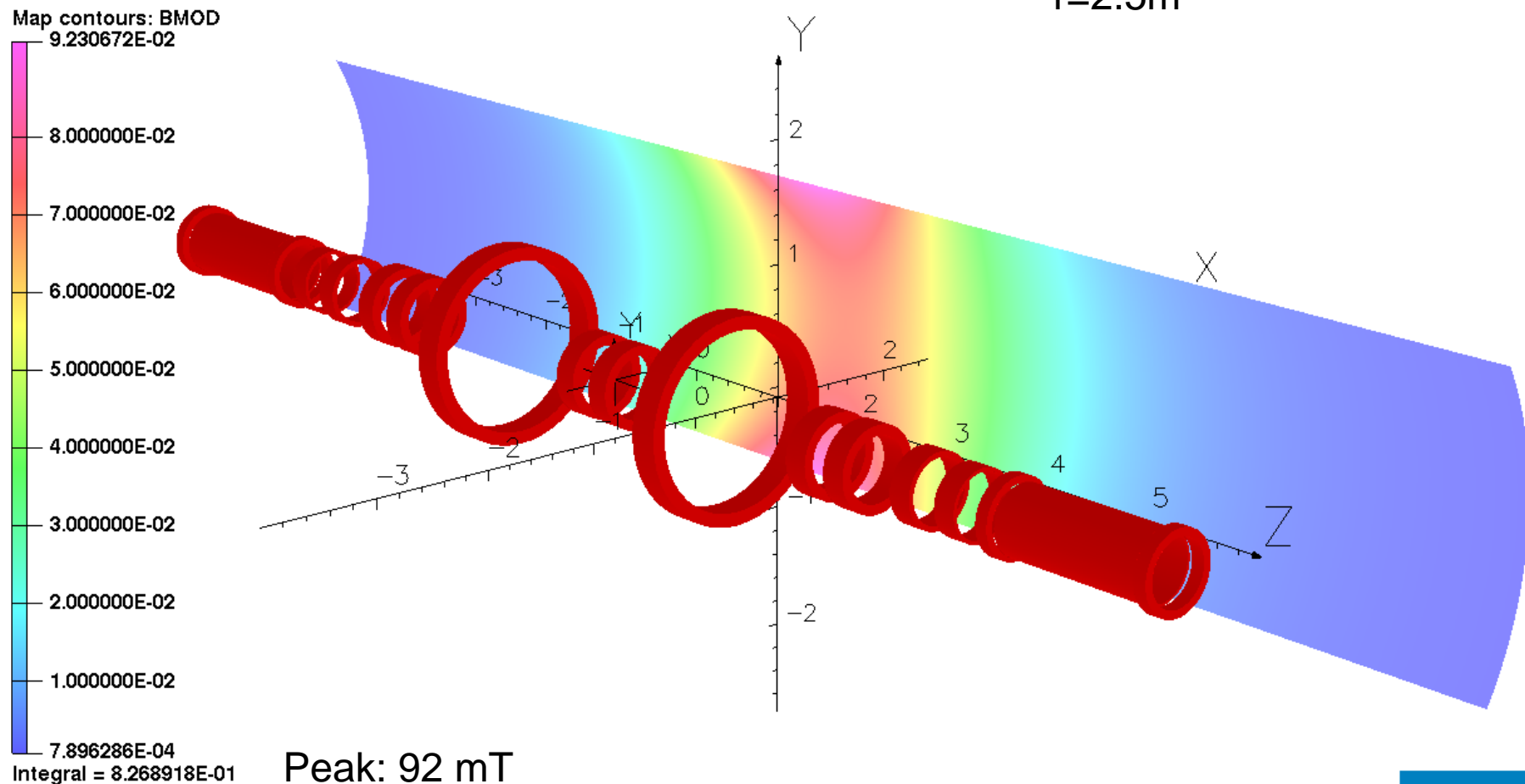
# Magnetization Solenoid 200 MeV



Open

# No Shield

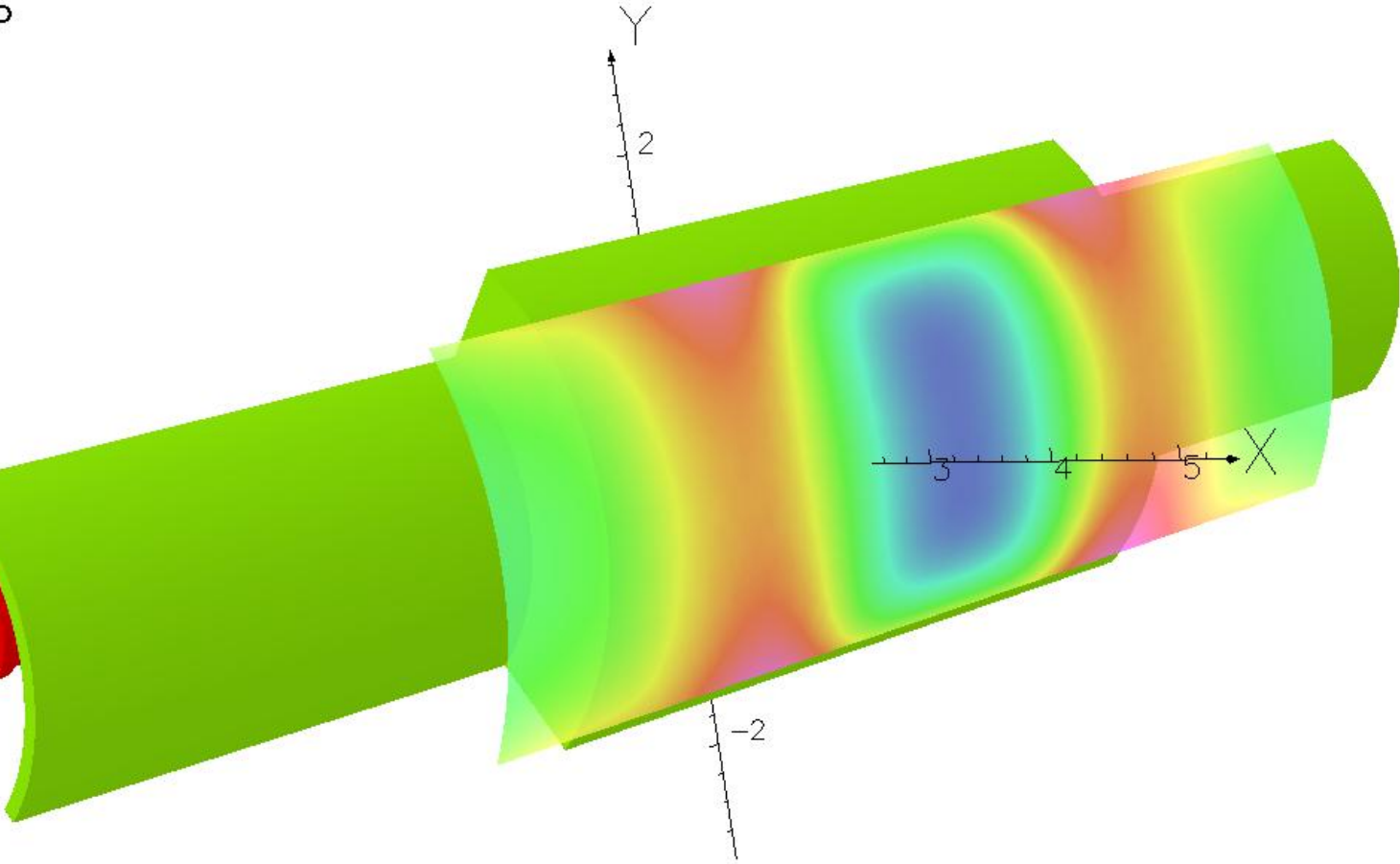
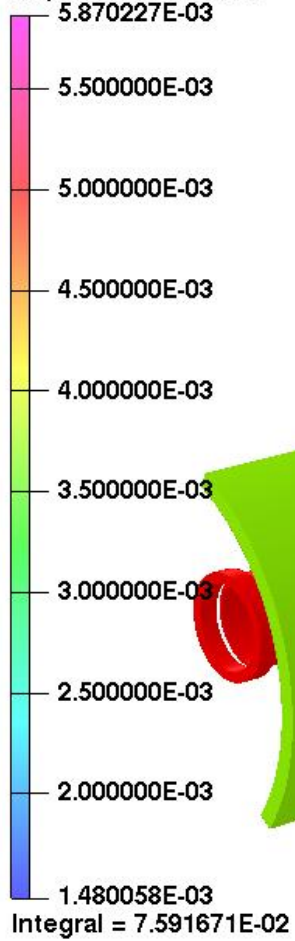
200 MeV Flip  
 $r=2.5\text{m}$



Opera

# 200 MeV Flip Mode

Map contours: BMOD



$r=2.5\text{m}$

Peak: 5.8 mT  
Average: 3 mT?

# 200 MeV Solenoid Mode

Map contours: BMOD

2.969309E-03

2.500000E-03

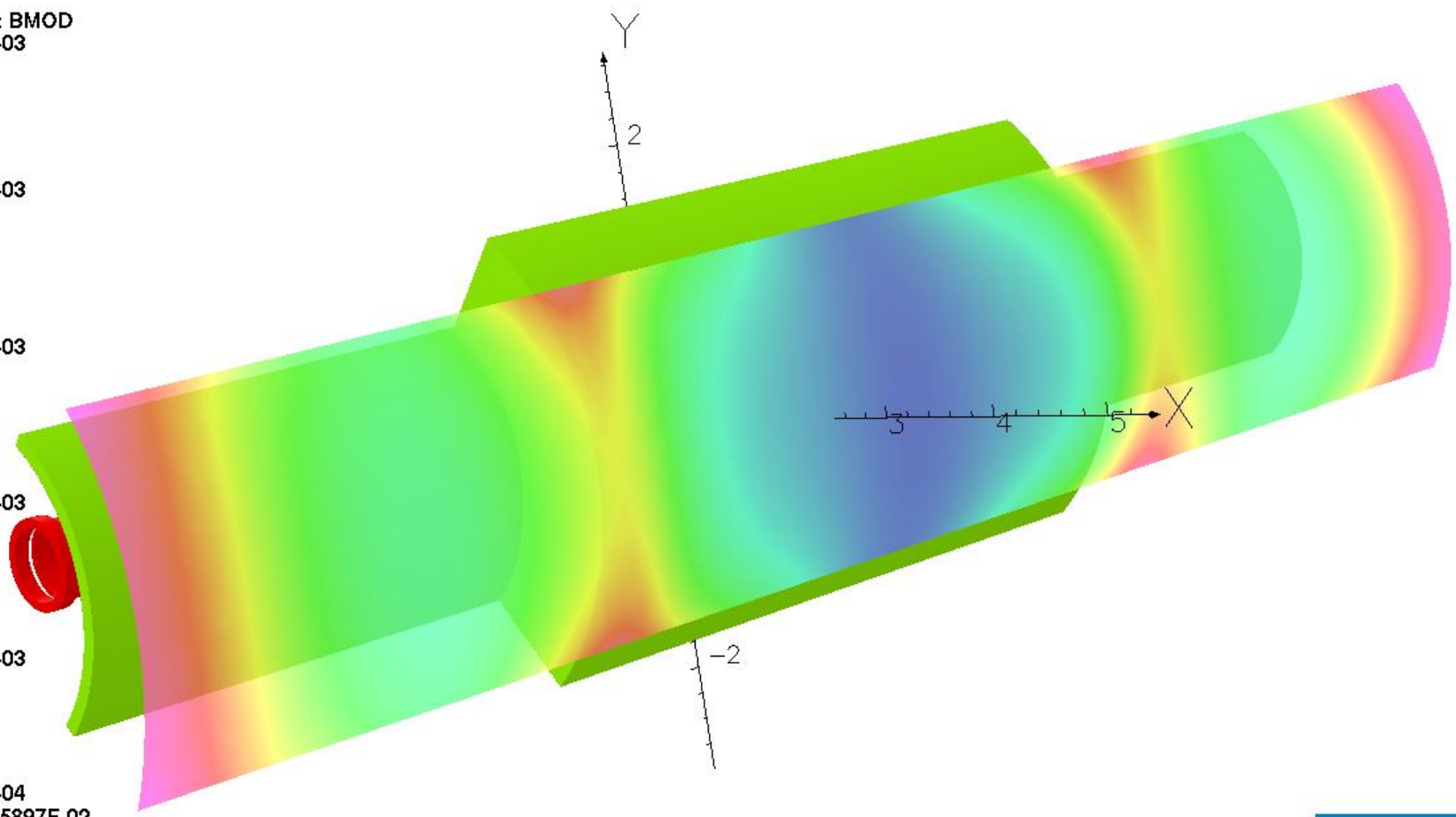
2.000000E-03

1.500000E-03

1.000000E-03

5.705813E-04

Integral = 5.555897E-02

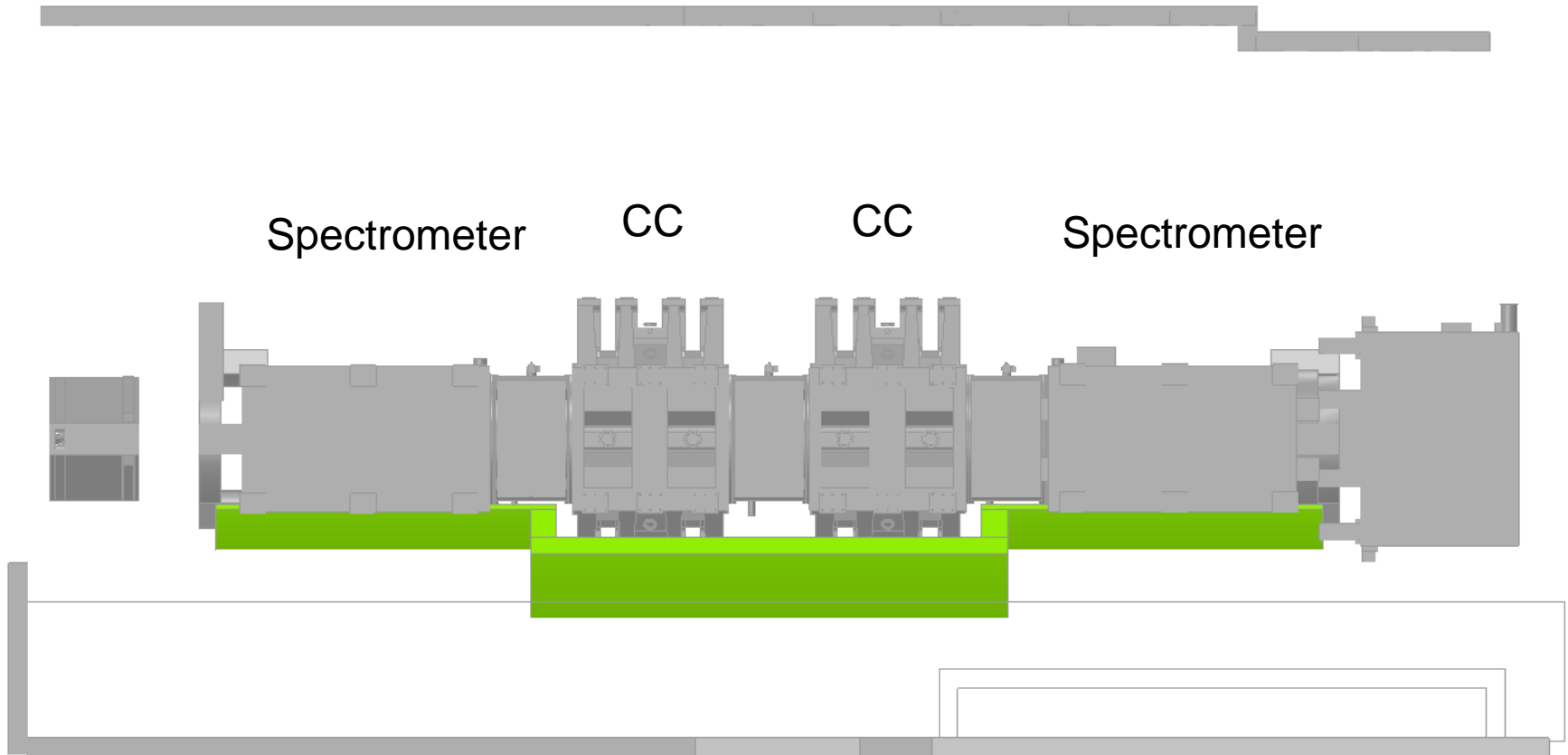


Peak: 3 mT  
Average: 1.5 mT?

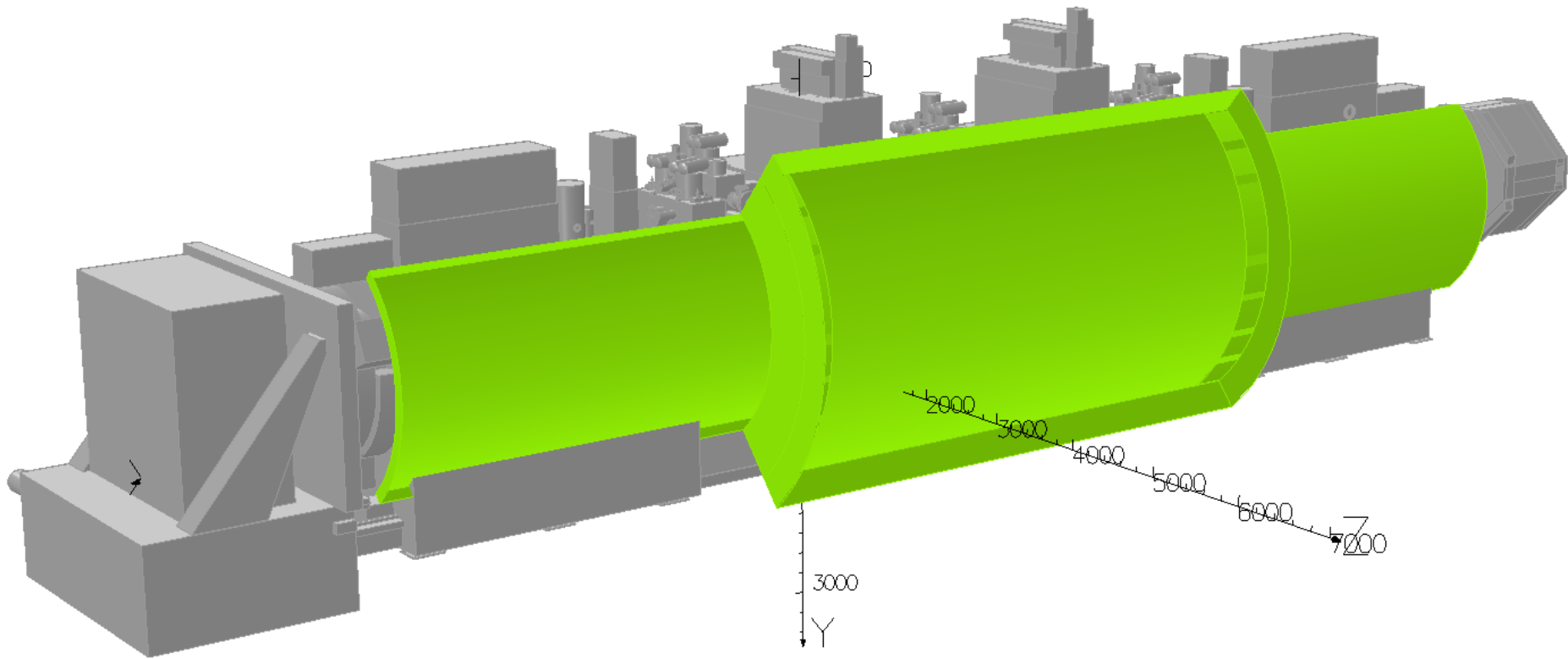
Opera

r=2.5m







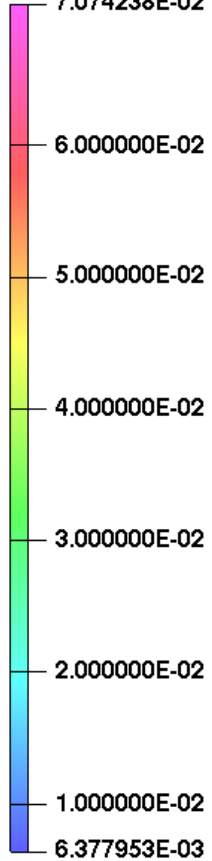


Outside faces removed

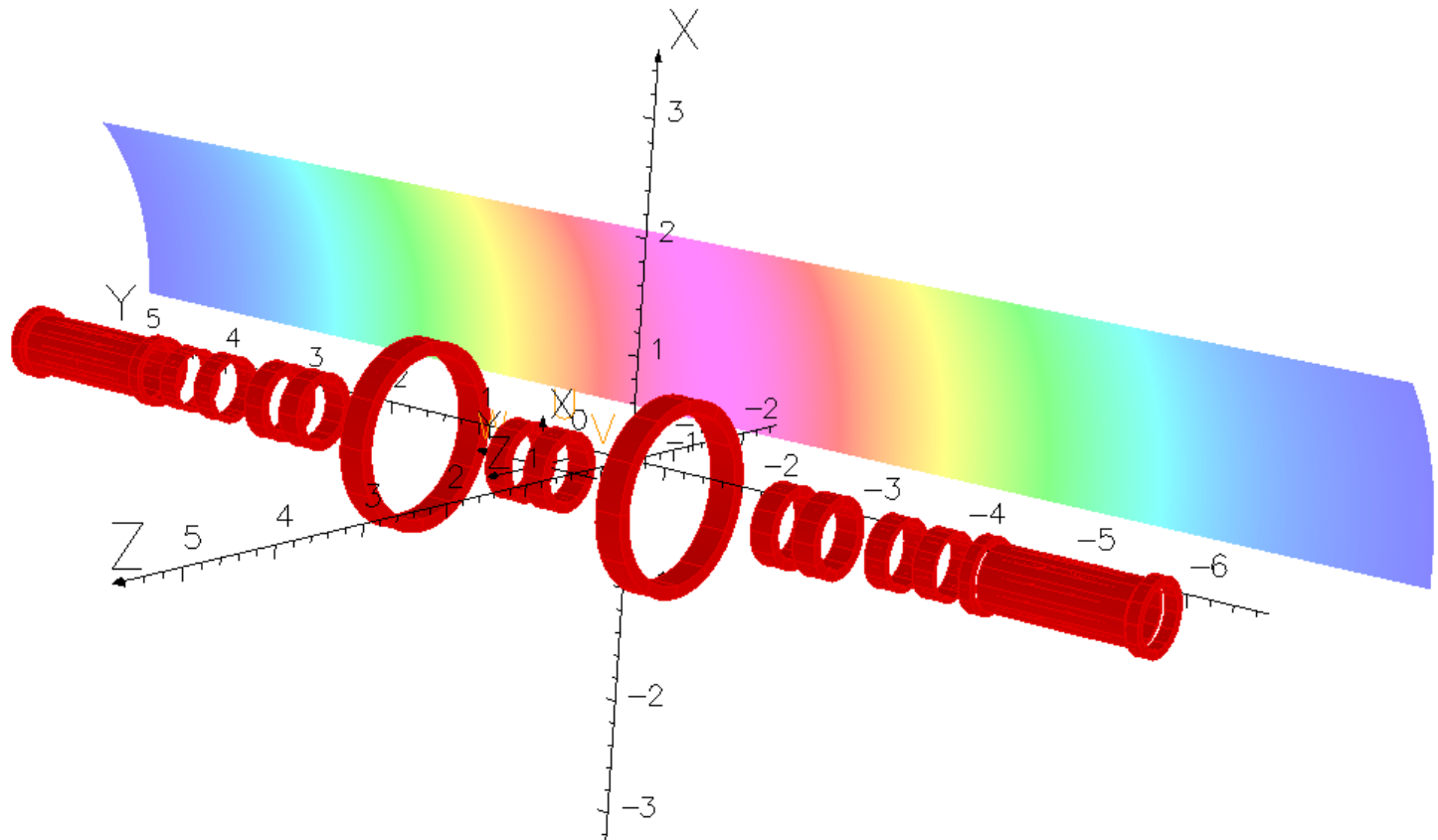
# Stage VI, Flip 200 MeV

4/Sep/2012 13:54:09

Map contours: BMOD  
7.074238E-02



Integral = 9.369687E-01



Open

# Stage VI, Flip 200 MeV

4/Sep/2012 13:44:24

Map contours: BMOD

4.974296E-02

4.500000E-02

4.000000E-02

3.500000E-02

3.000000E-02

2.500000E-02

2.000000E-02

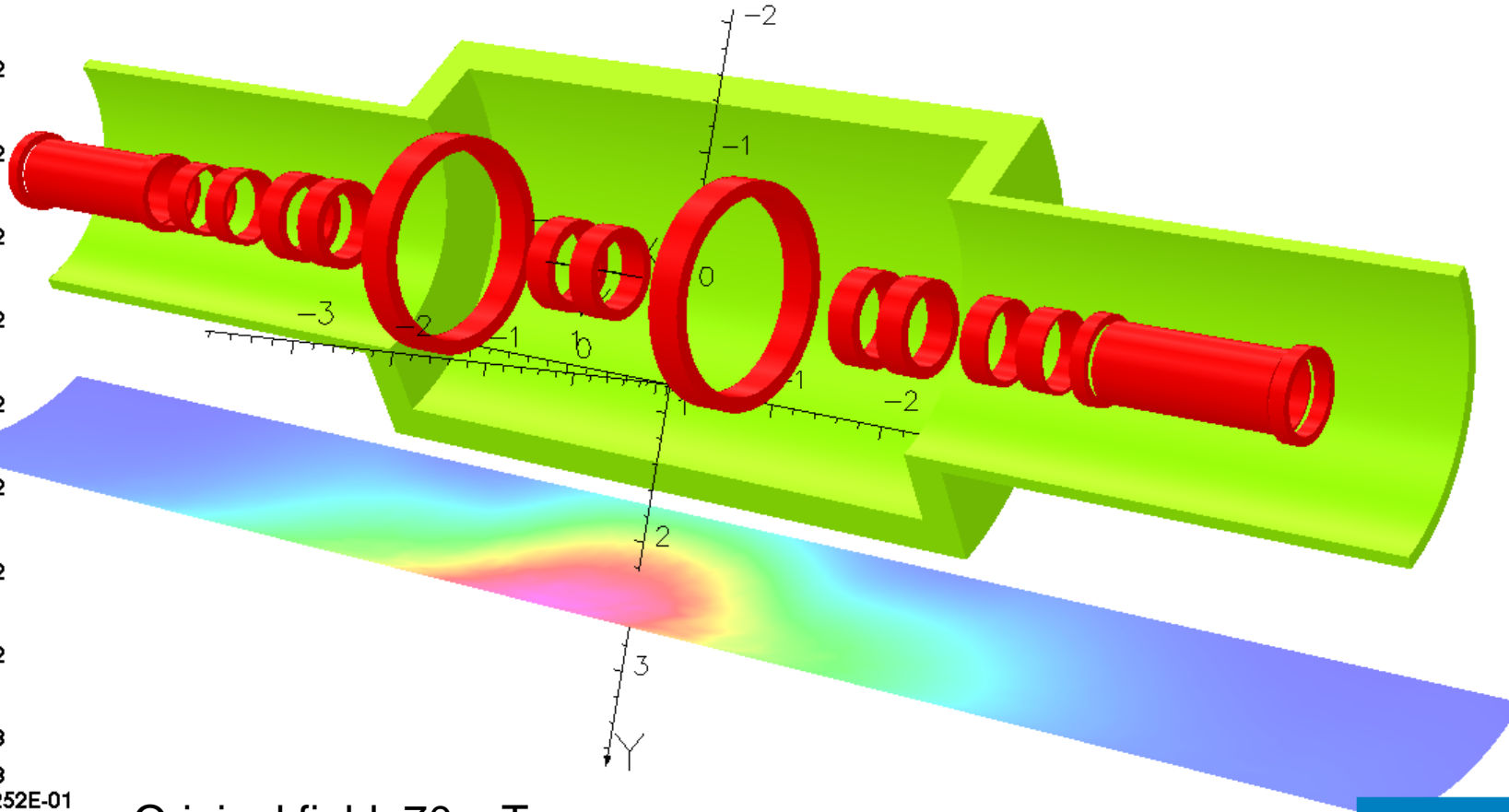
1.500000E-02

1.000000E-02

5.000000E-03

2.777906E-03

Integral = 3.876252E-01



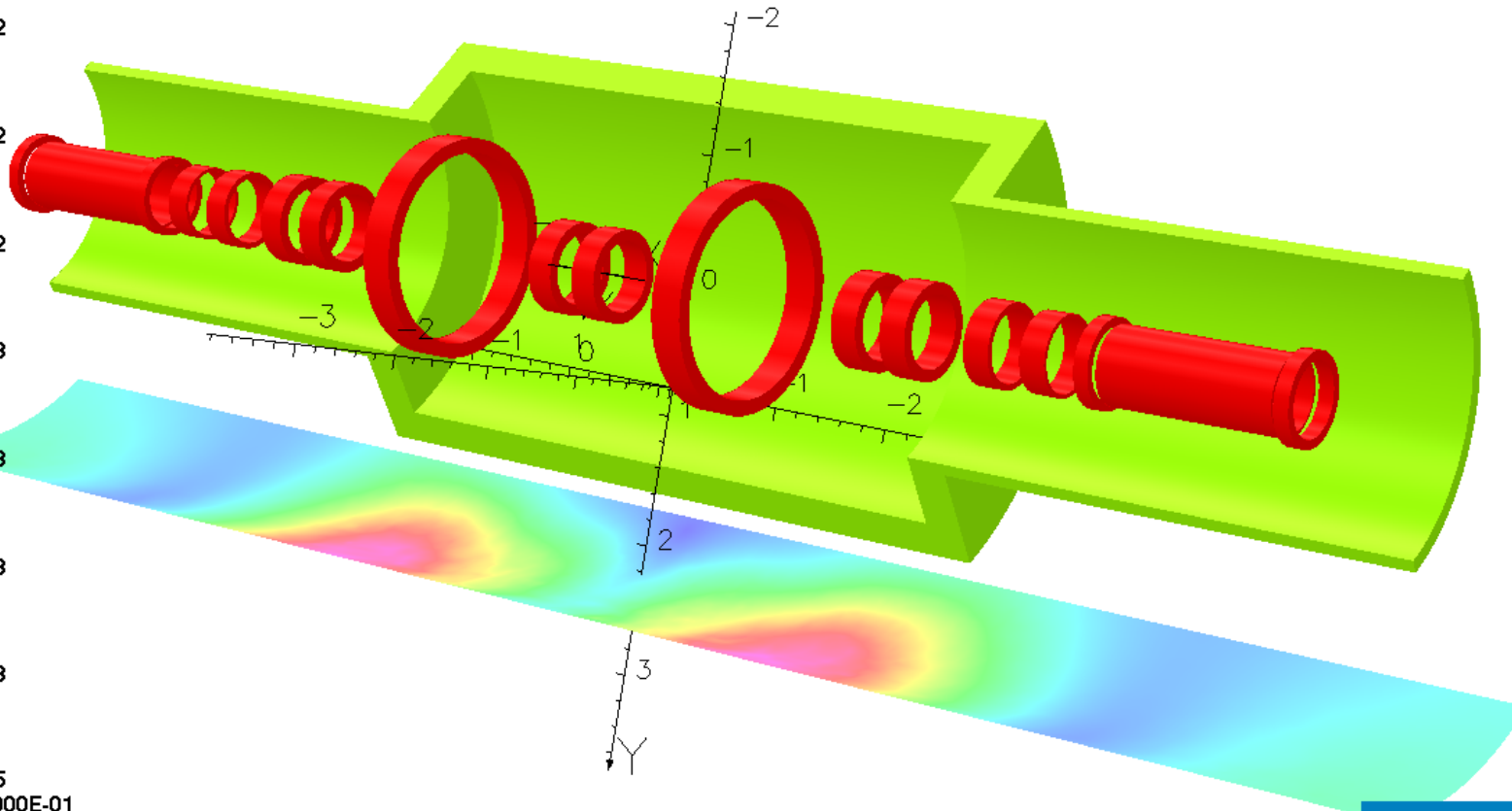
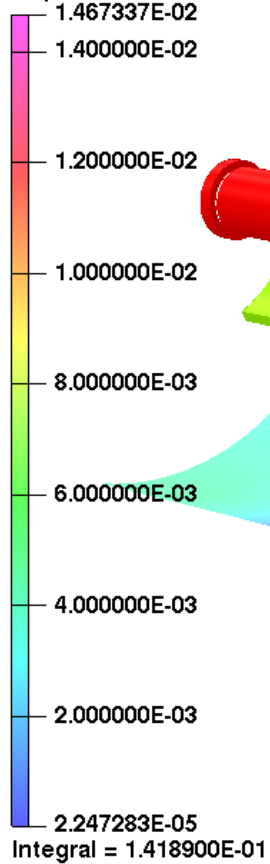
Original field: 70 mT  
With shield: 50 mT

Opera

# Stage VI, Solenoid 200 MeV

4/Sep/2012 13:57:21

Map contours: BMOD



Opera

Original field: 32 mT  
With shield: 15 mT

- Stage VI can also be shielded
  - requires more iron
  - radial thickness: 0.3 m near coupling coils
  - total volume (both halves): 16 m<sup>3</sup> (130 tons)
  - Force: 400 kN (200 MeV flip mode)
- Areas not covered by shield: stray field slightly better in comparison to no shield situation
- Further work
  - optimize thickness?
  - integration?