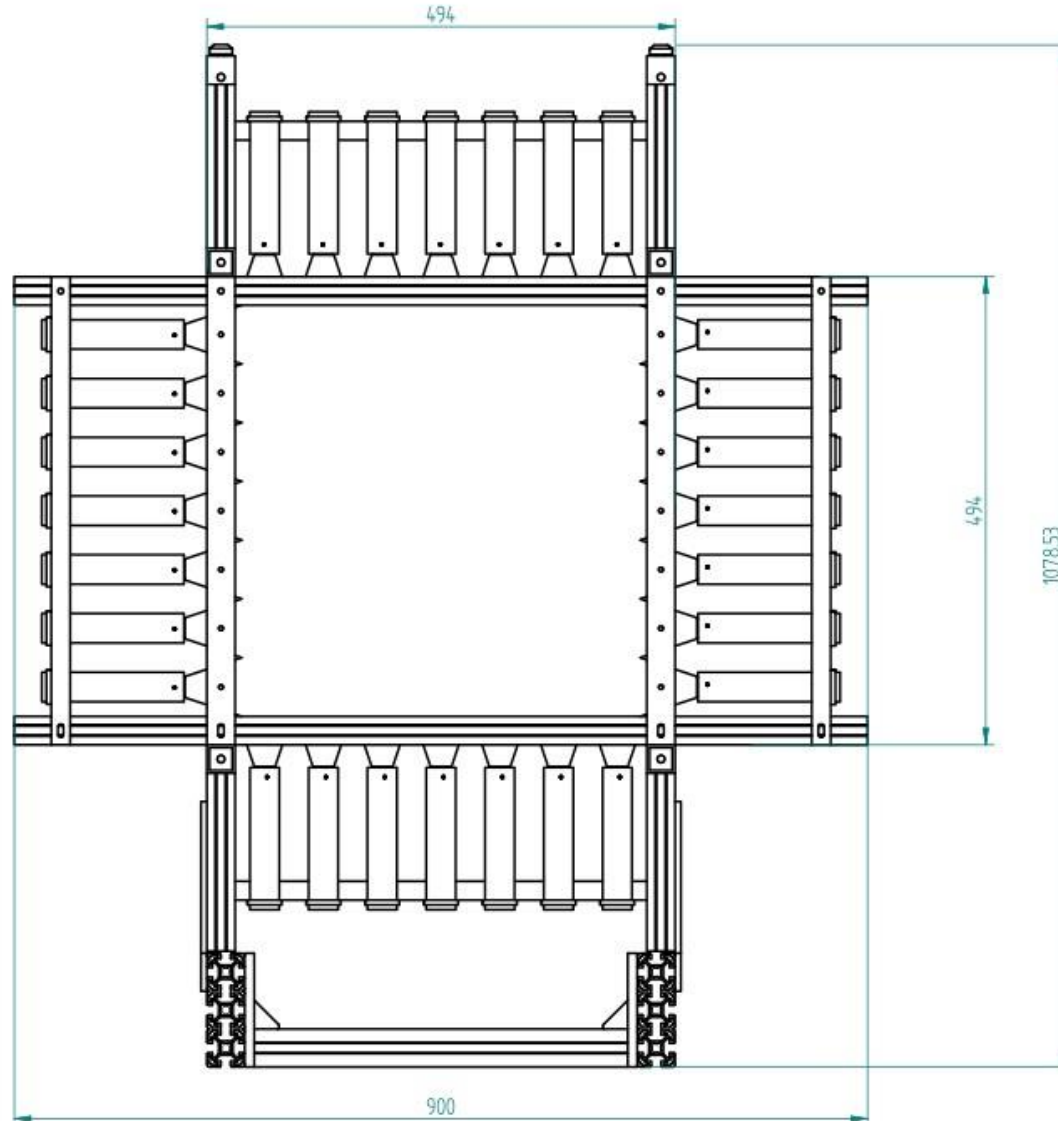


# MICE PRY Field TOF PMTs

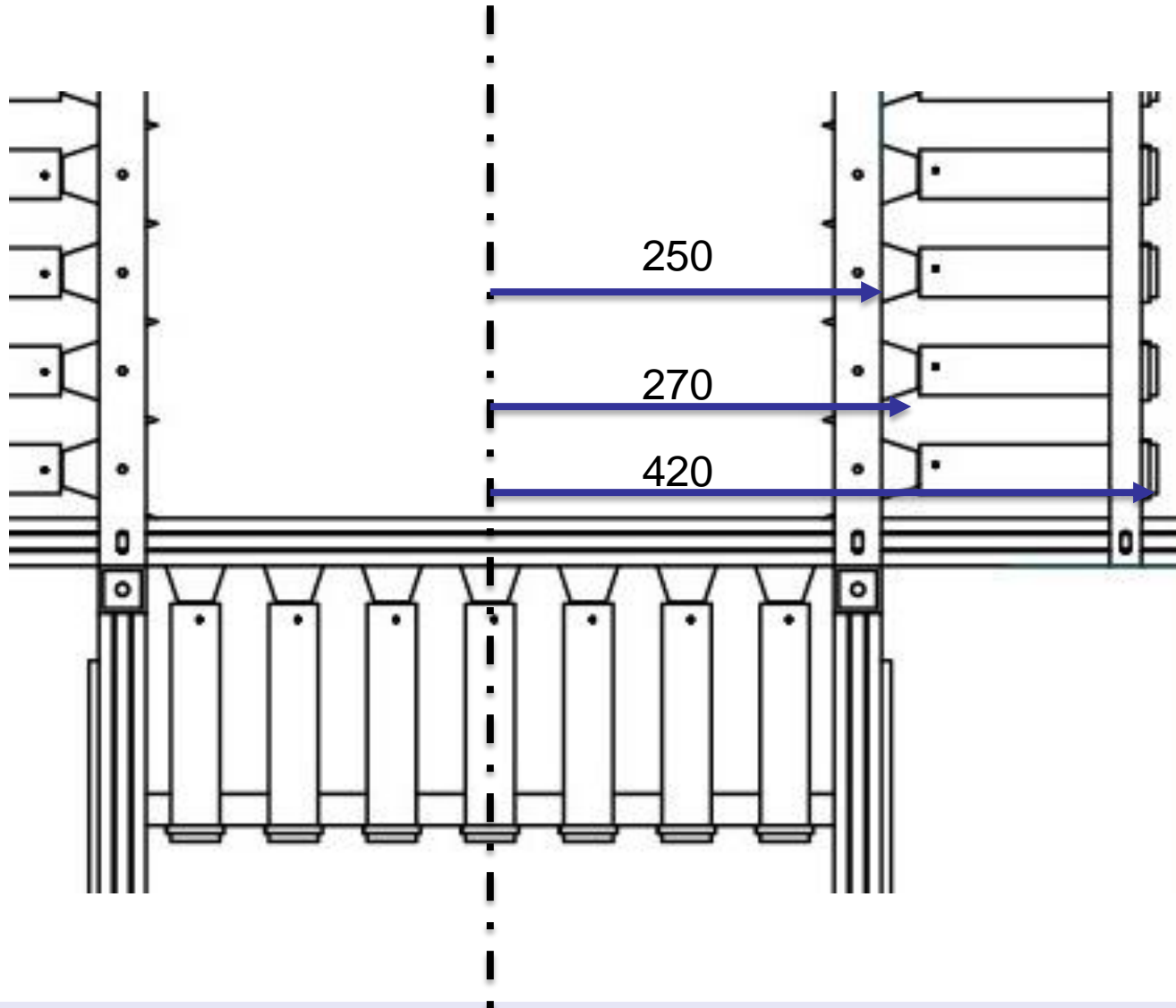
Holger Witte  
Brookhaven National Laboratory  
Advanced Accelerator Group

- Hamamatsu R4998 PMT
- Shielding
  - ARMCO (6x6 cm<sup>2</sup> ) shield
  - 1 mm  $\mu$ -metal
- Field limits
  - Axial (parallel to PMT axis): 600 Gauss (60 mT)
  - Orthogonal (perpendicular to PMT axis): 1000 Gauss (100 mT)
- M. Bonesini et al. / Nuclear Instruments and Methods in Physics Research A 693 (2012) 130–137.  
<http://dx.doi.org/10.1016/j.nima.2012.07.039>
- R. Bertoni et al. Tests in magnetic field of conventional Hamamatsu R4998 PMTs. MICE-NOTE-DET-201.

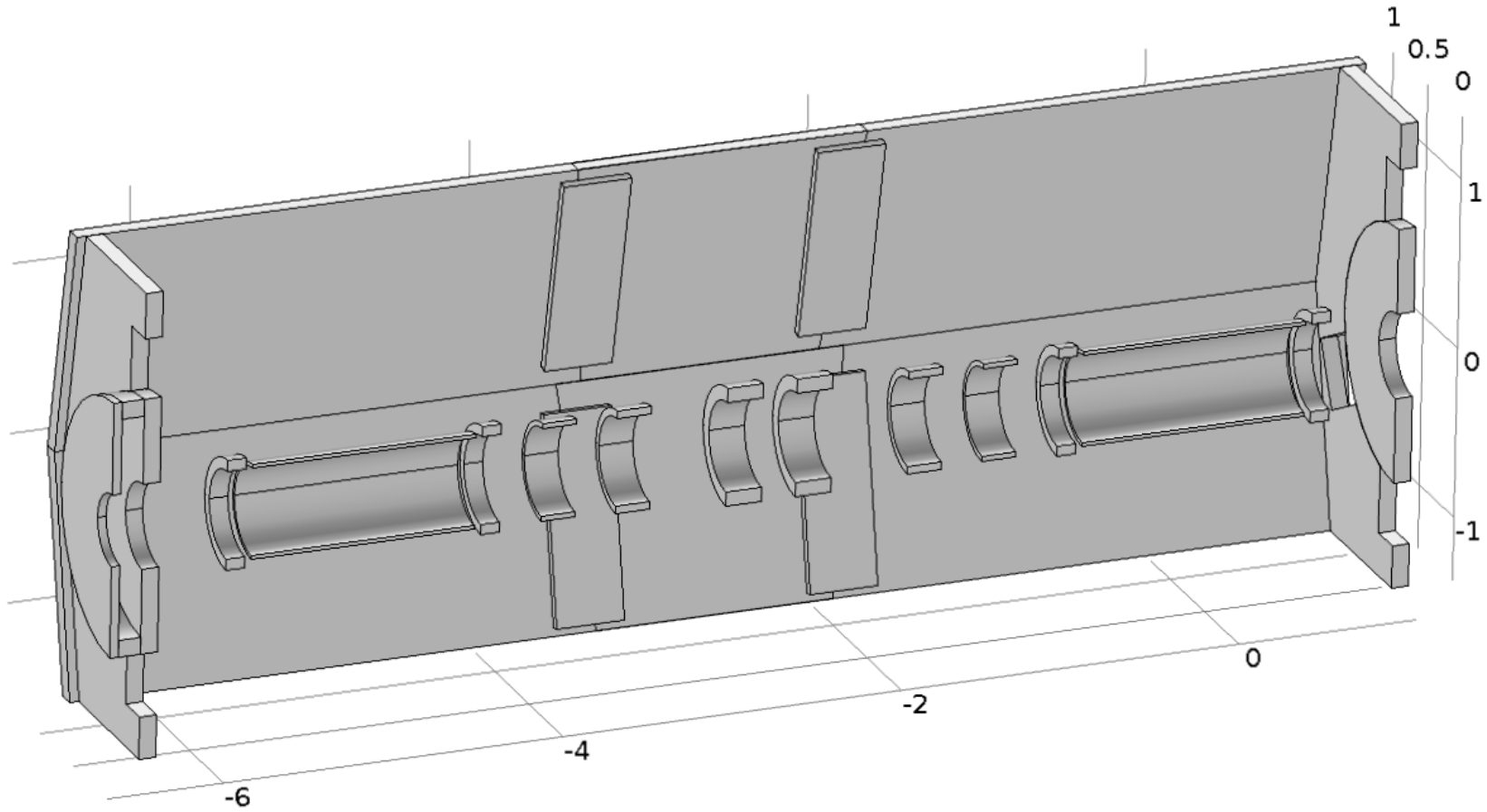
# TOF Geometry



# Geometry

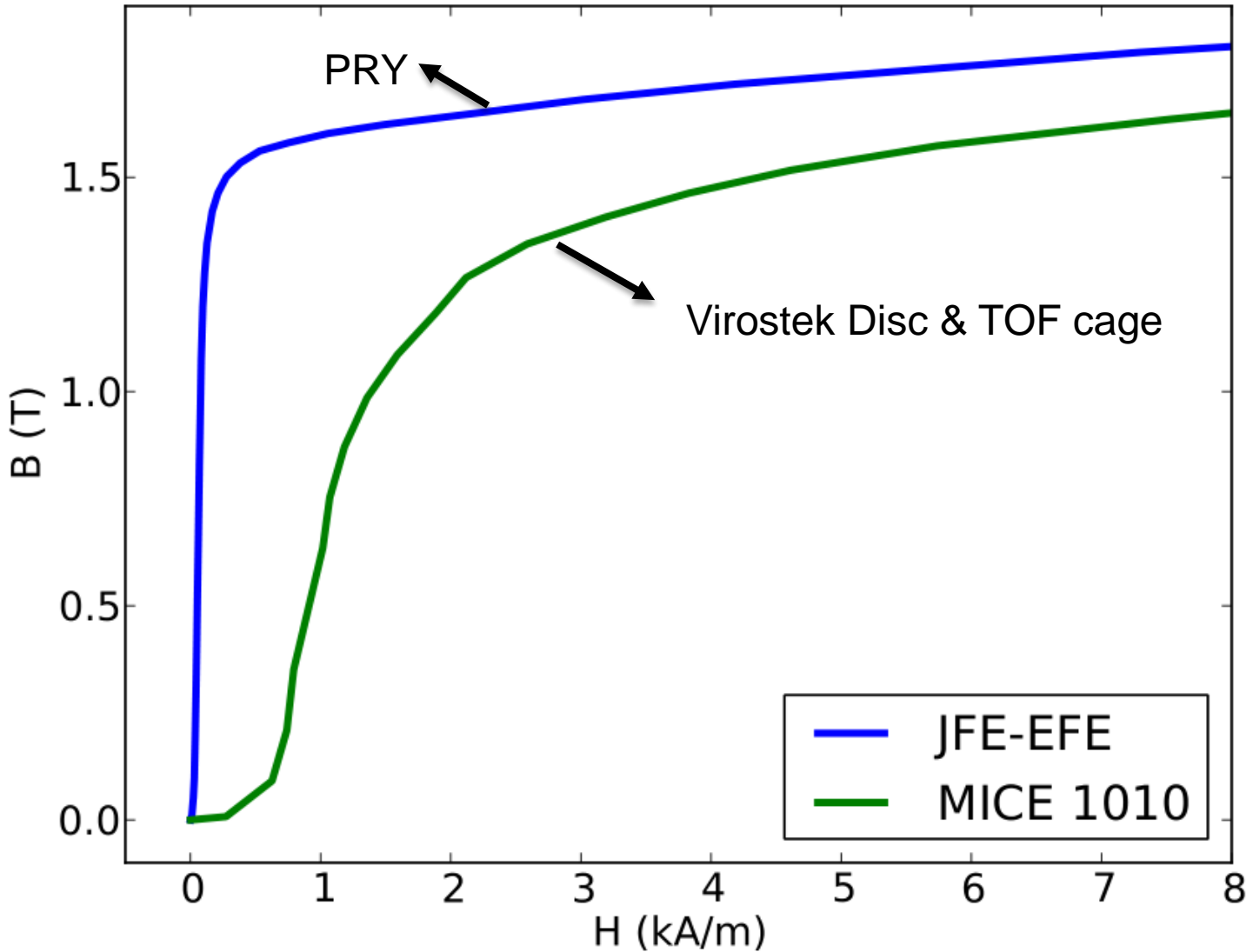


# PRY Model

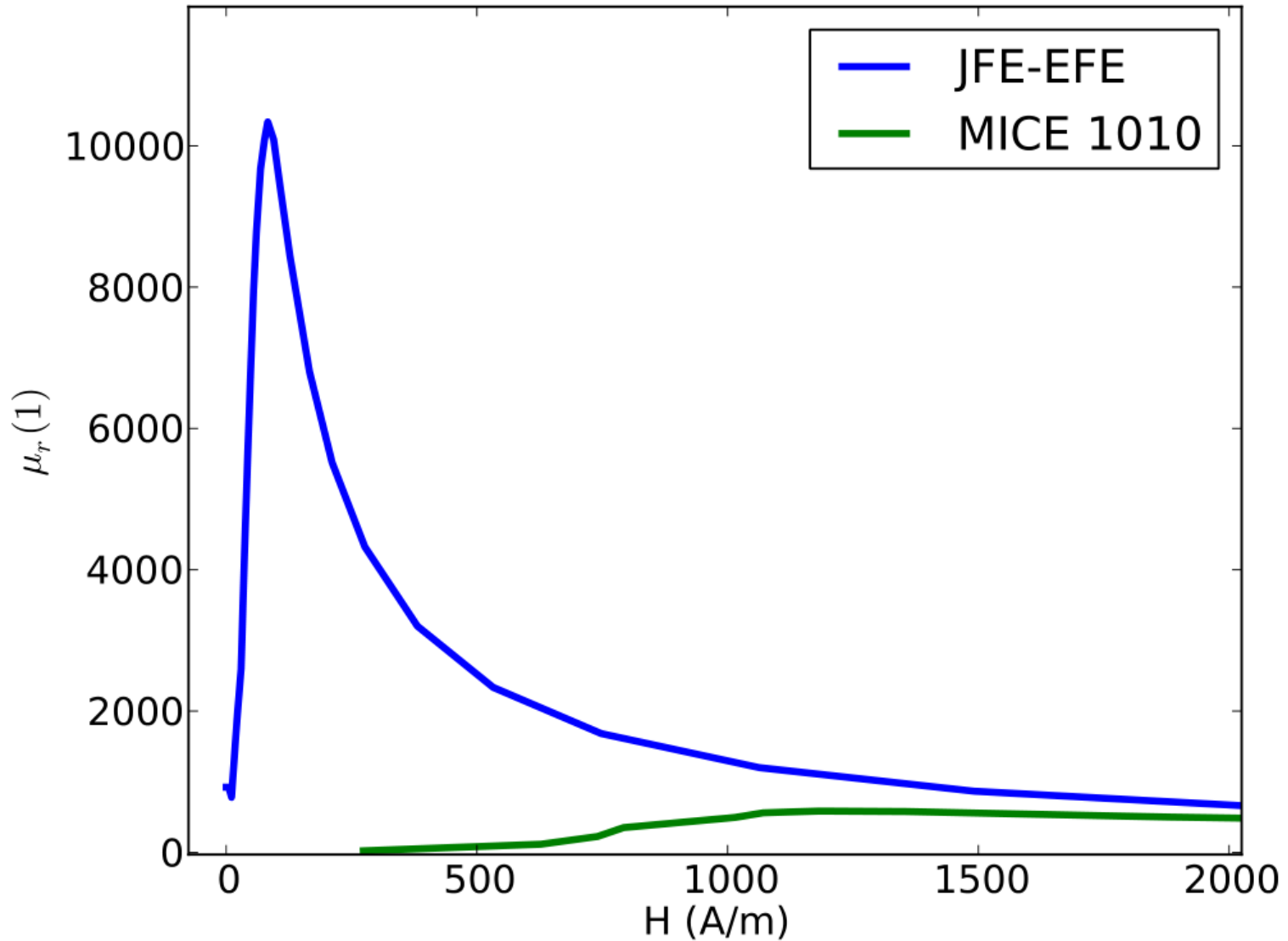


- Magnetization curves
  - JFE-EFE 62 mm
  - MICE 1010 steel as measured
- Virostek disc ID: 500 mm
  - Slightly larger than in reality (420 mm)
- TOF Ring fully closed (360 deg)
  - In reality the ring only covers 240 degrees

# Magnetization Curves

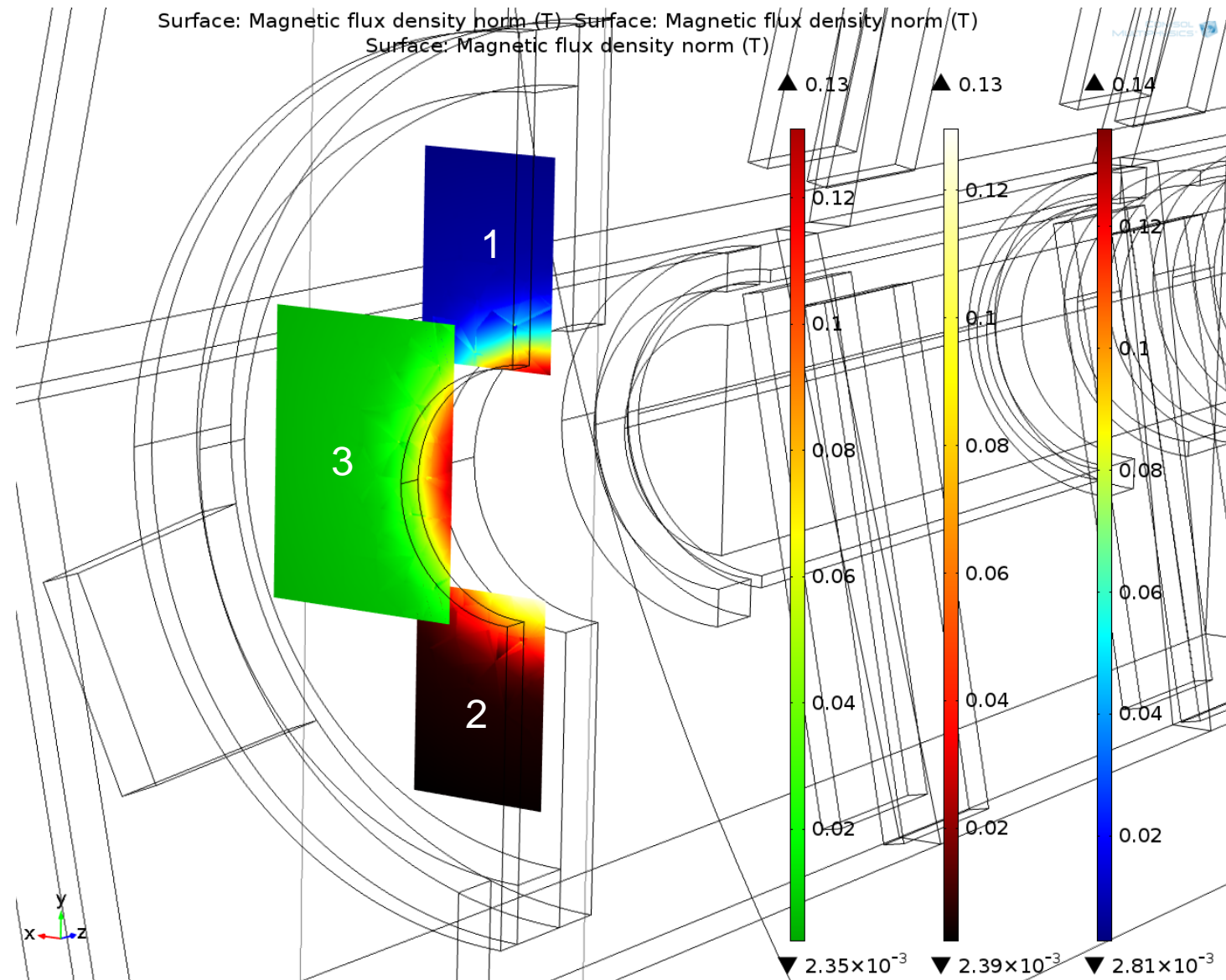


# Permeability

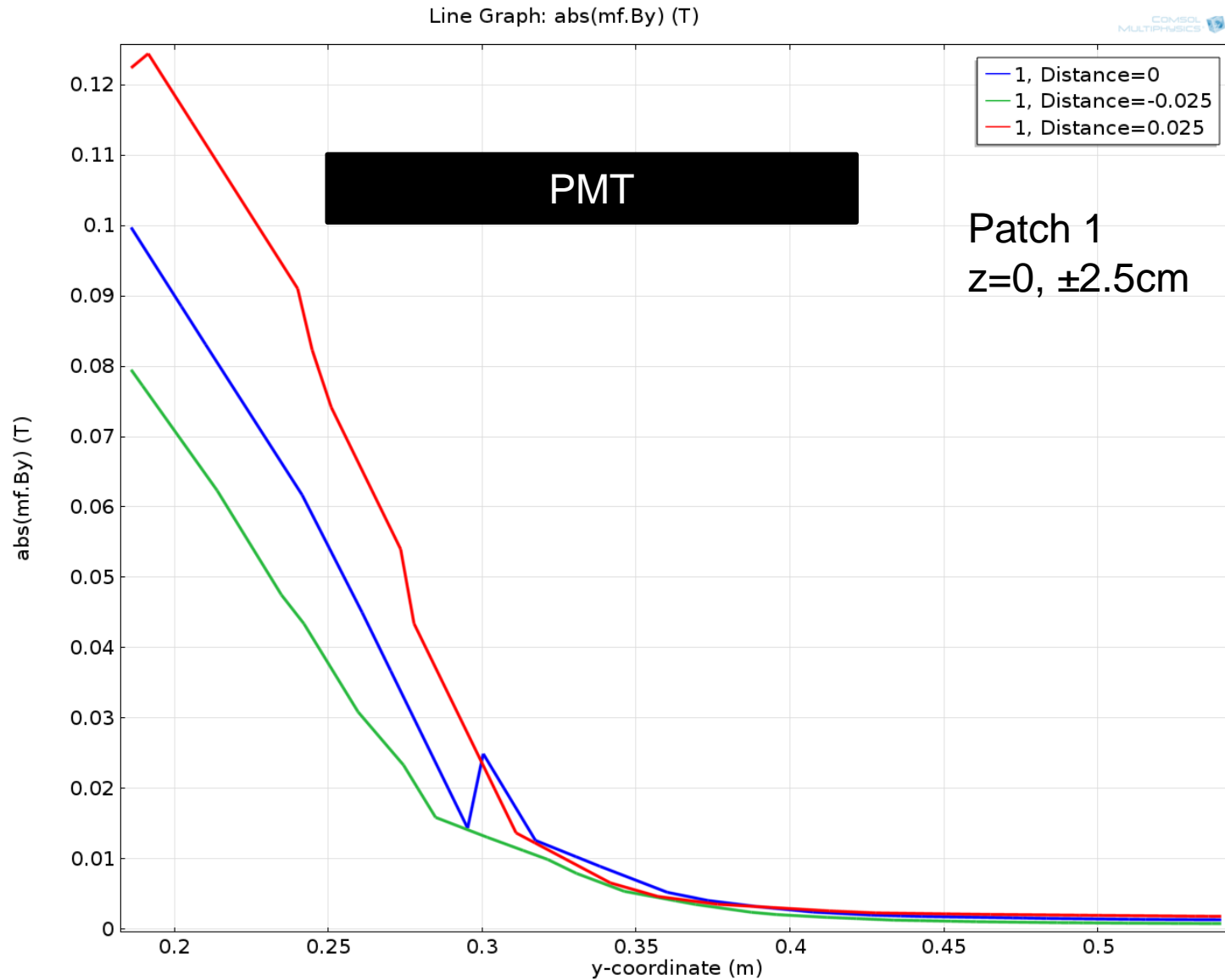




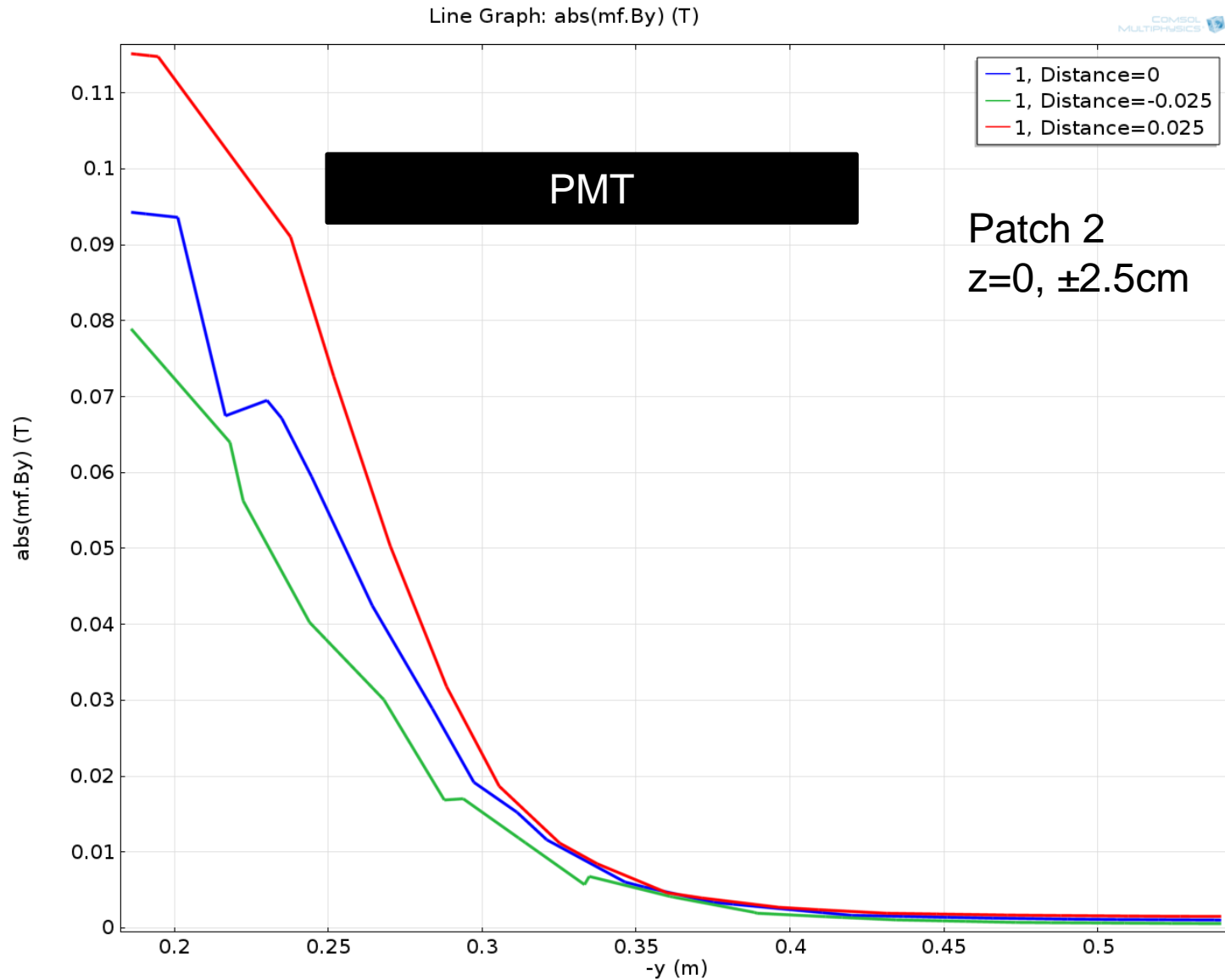
# Field TOF



# Field parallel to PMT axis



# Field parallel to PMT axis



# Field parallel to PMT axis

