



U.S. MAGNET
DEVELOPMENT
PROGRAM

Nb_3Sn Area General Updates (LBNL)

USMDP Bi-Weekly Meeting - 5/10/2023

Diego Arbelaez

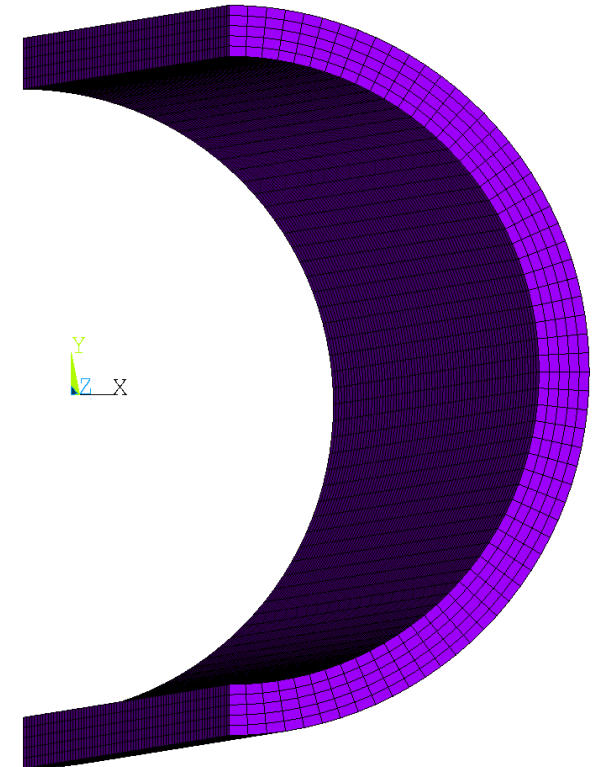
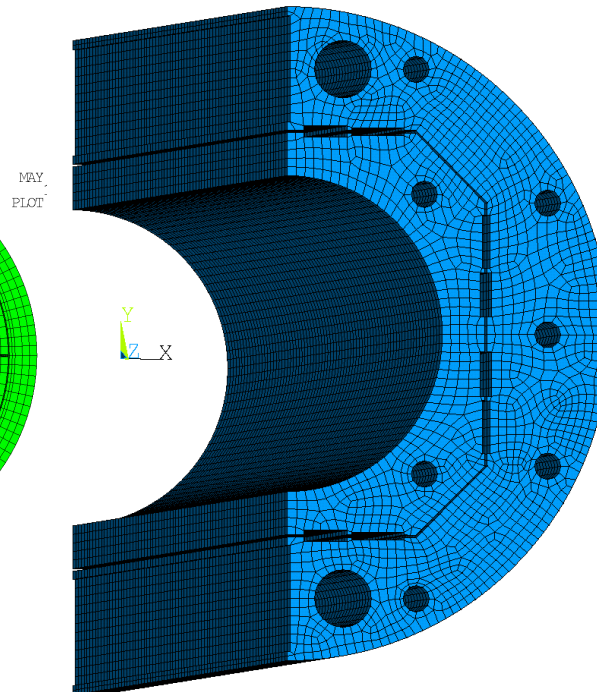
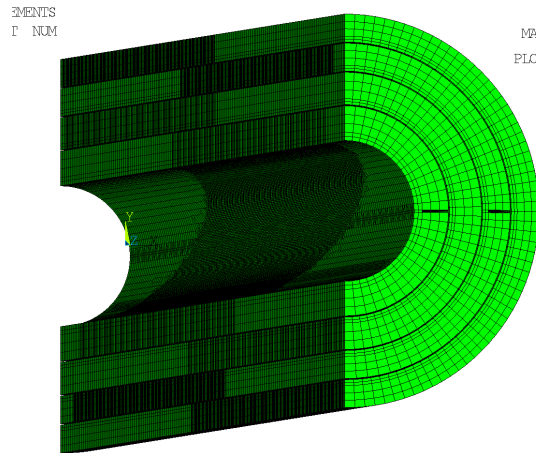
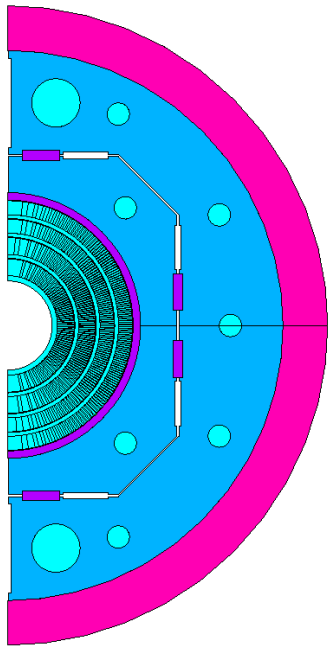
CCT Subscale

- Completed thermal cycle of CCT sub 5 (wax inner layer) with main focus on heater studies
- Currently preparing CCT sub6 coils (full wax magnet)*
 - Inner layer has been reacted and is being prepared for wax impregnation
 - Outer layer has been impregnated with wax
- Working to improve reliability of Stycast impregnation process for CCT sub7*

* See presentation by Jose Luis

CCT6 Design

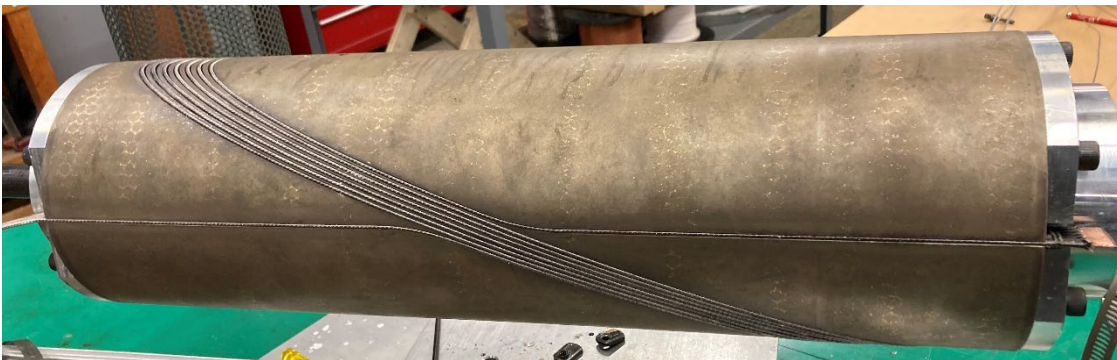
- Currently working final optimization of magnet structure and detailed coil parameters (L. Brouwer and M. Juchno)



CCT6 Fabrication

- Second short inner layer mandrel was machined at LBNL main shop (some issues were encountered and cutting rate needs to increase for full length part)
 - First coil was made in SMP small shop but machinist has left the group
 - Will wind, react, and impregnate this coil to further refine pole gap
- Plan to repeat short inner layer to ensure that issues have been resolved and cutting rate can be increased
- Full length inner layer tube has been ordered and will be machined after next short tube

First short coil after reaction



Will use second coil to further refine groove geometry

