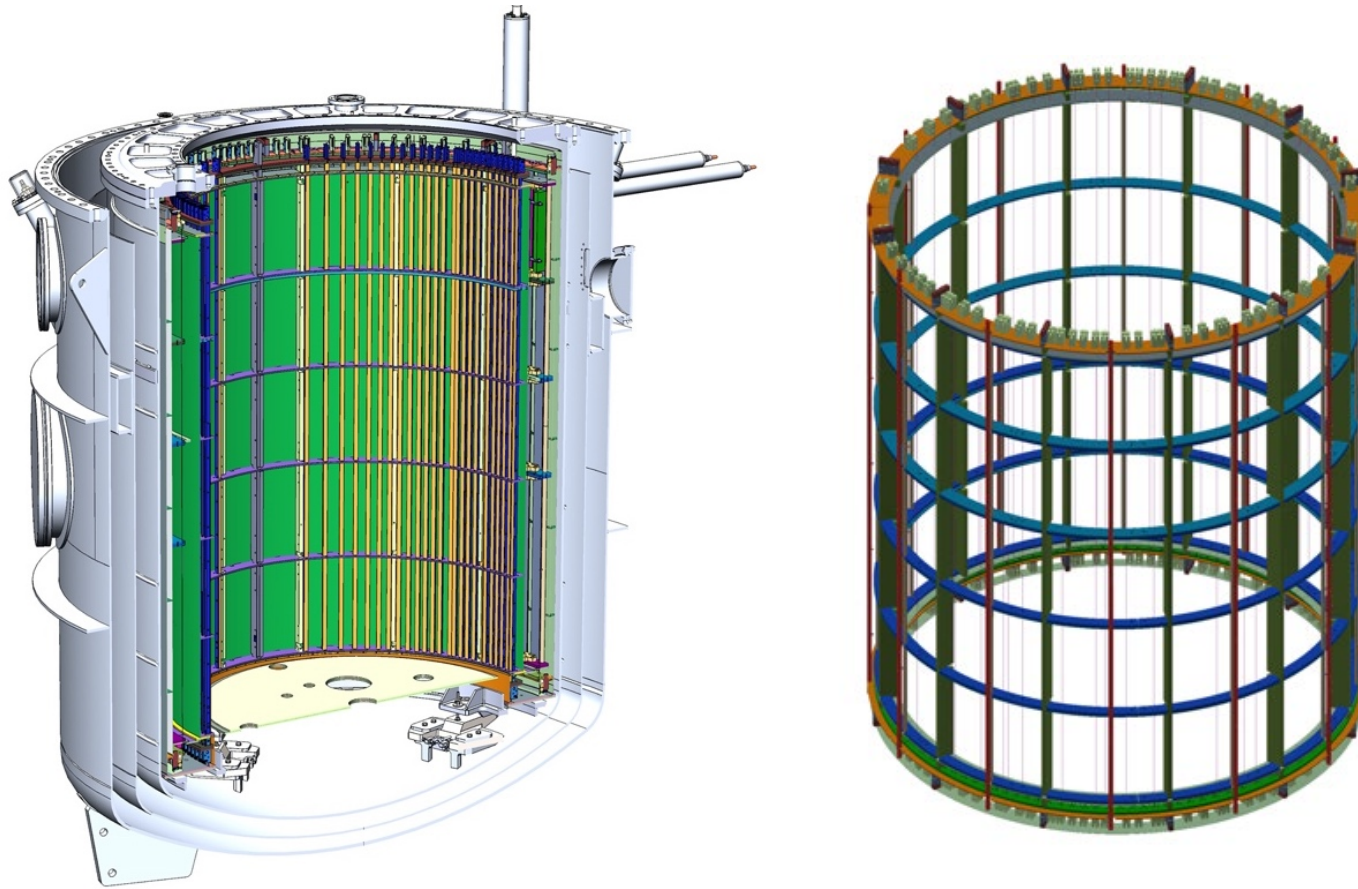


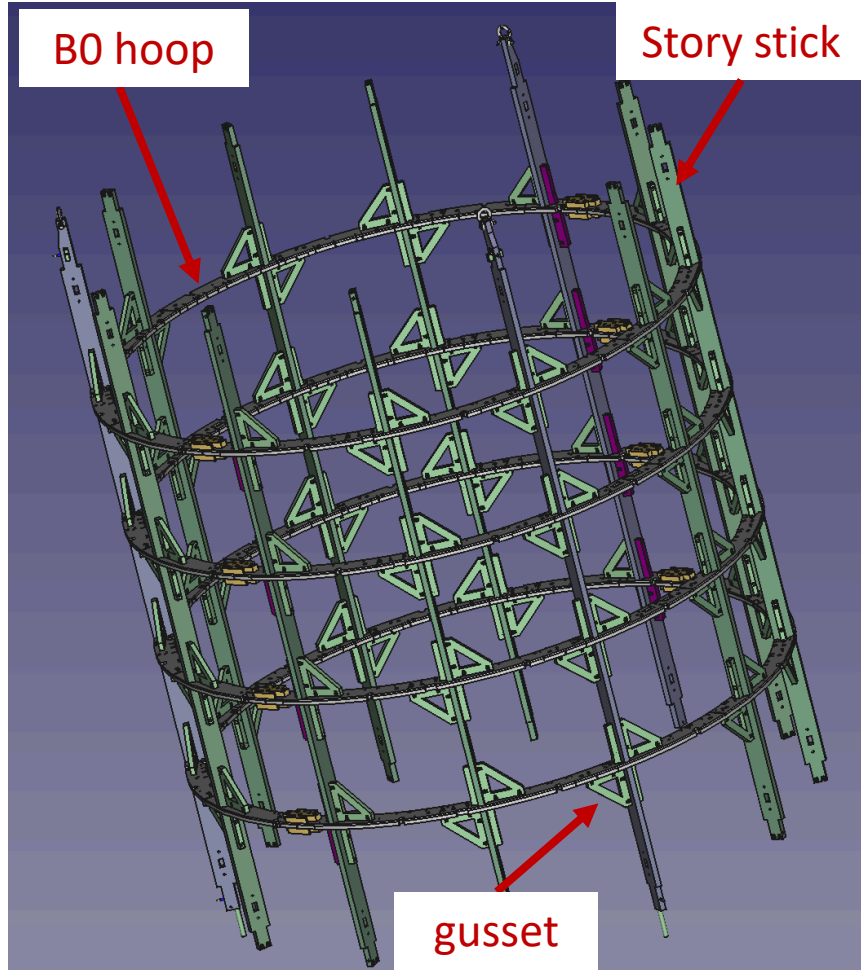
Magnet Construction Update

From Design to Reality:

So how do we go from model to a fully functioning magnet? Well, let's start at the core!

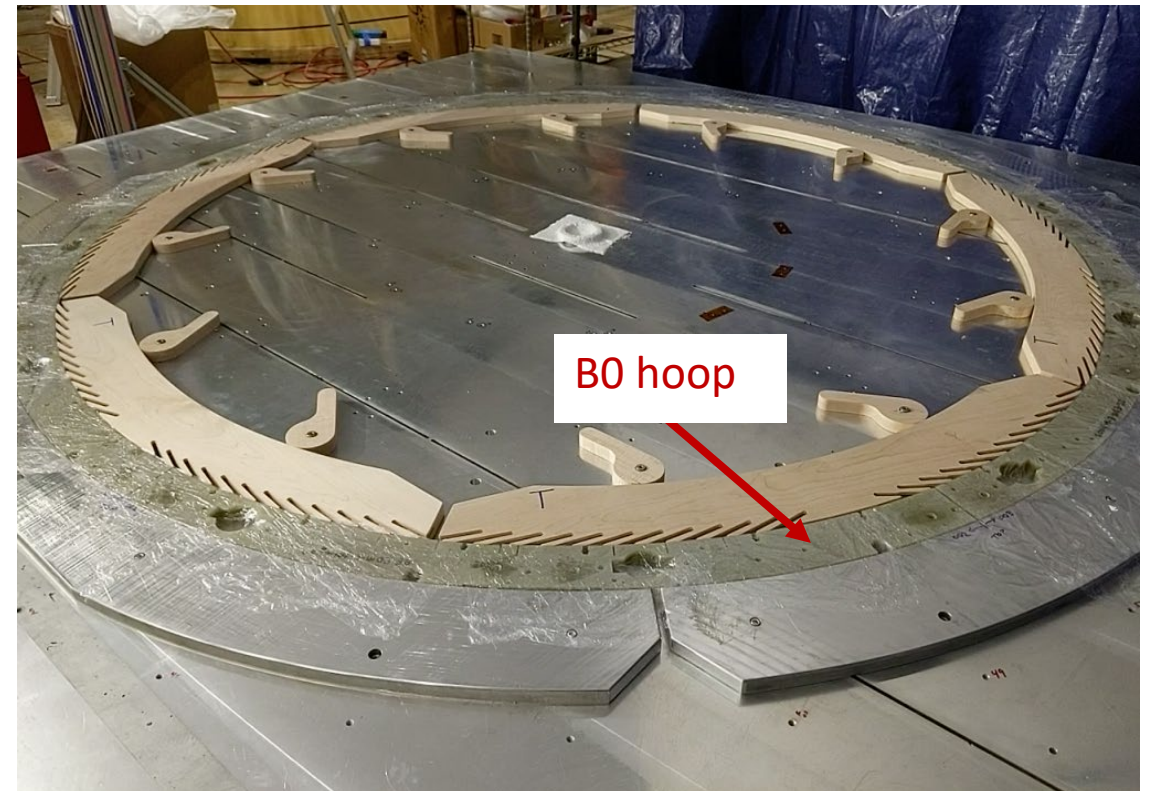


The core of the magnet consists of four G10 hoops, 12 story sticks and 96 stiffness gussets.



Each hoop is made of two layers with each layer comprising of six individual hoop segments that are epoxied together using DP-190 epoxy and then vacuum laminated for seven days.

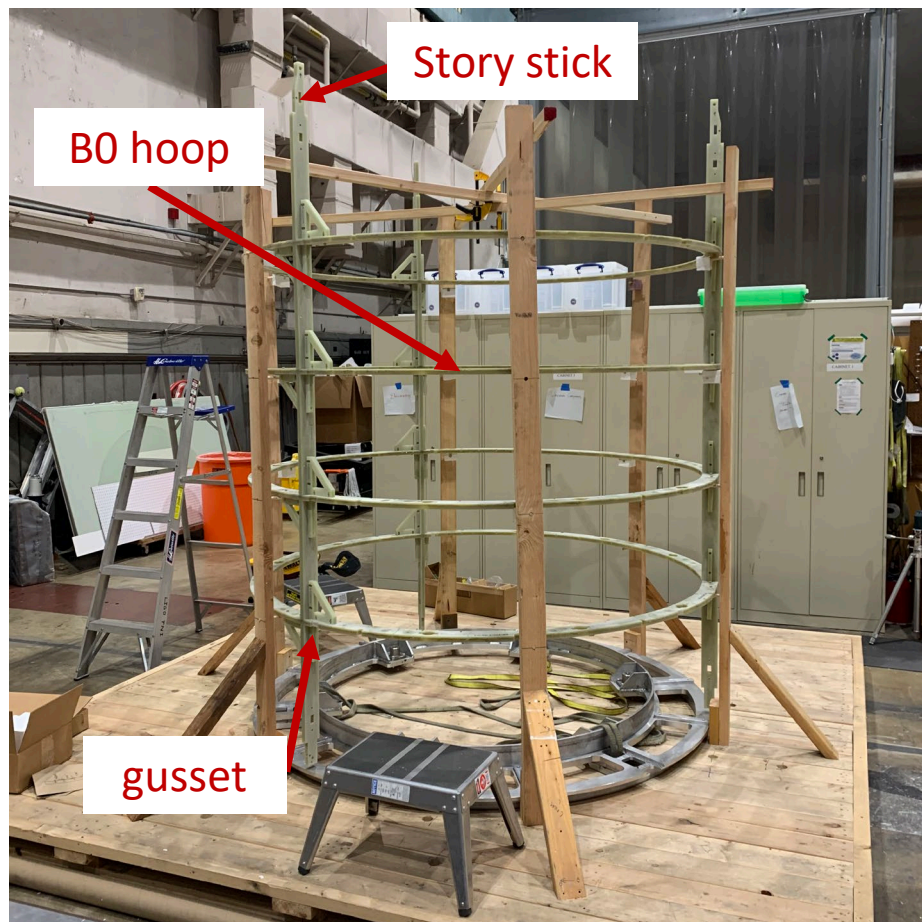
Over the past couple of months, and with safety in mind, we have glued and laminated all four of the hoops that comprise the magnet core.



The hoops can then be assembled into the magnet core. The hoops are supported via G10 story sticks and held together by G10 gussets and PEEK hardware.



Wood structure to support the B0 magnet core assembly.



The assembly begins! The hoops are mounted to the wooden supports and the story sticks and gussets attached.



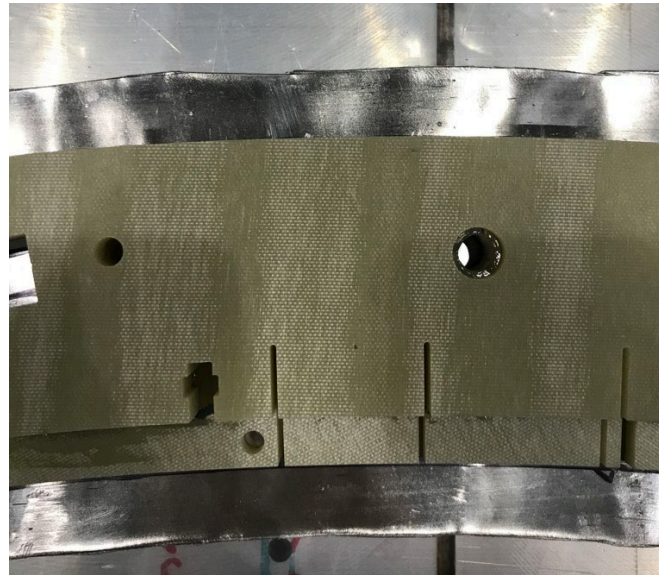
B0 magnet core assembled with Alina Aleksandrova for scale!

With the magnet core completed, we have begun work on the next layer of the magnet, the two Lead End Caps (LEC's). Much like the hoops, the LEC is made of a double layered G10 hoop that is epoxied to an annular ring of lead. In order to get the LECs ready for mounting to the core, the G10 segments are first epoxied together to form the LEC hoop, an annular lead ring is cut from a lead sheet and the G10 hoop is epoxied to the lead.

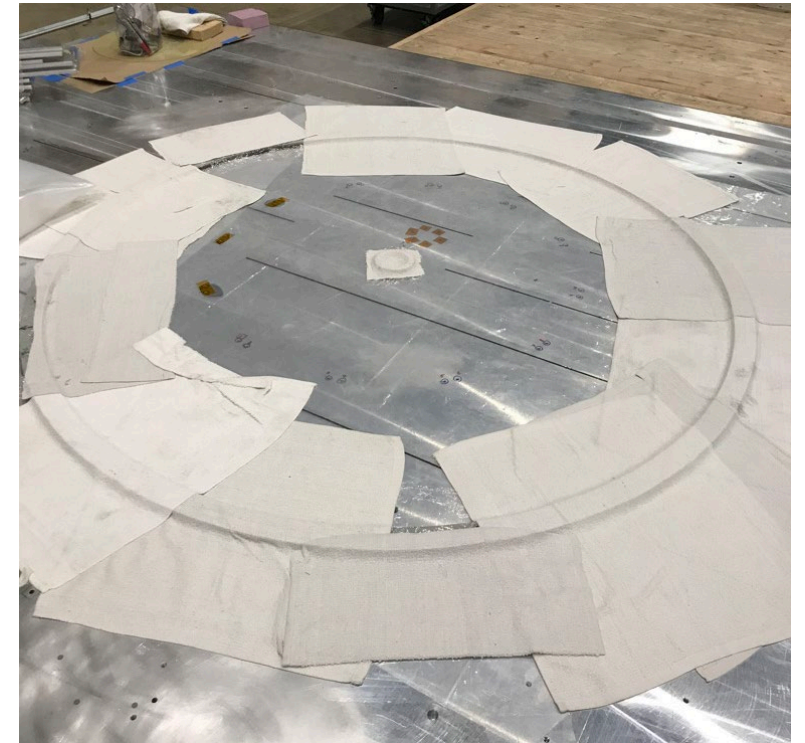
We have completed the assembly of one of the LEC's. The second LEC assembly will be completed by the end of January 2021.



The annular lead rings are cut from a 90"x90" sheet of lead using scissors, chisels and piano wire.



The G10 LEC hoop is epoxied to the lead using DP190 and vacuum laminated for seven days. The excess lead and all of the features are cut into the lead post lamination.



Vacuum lamination of G10 and lead.

Links to assembly movies

Hoop gluing:

- https://drive.google.com/file/d/1dAXxUONV8bZS_IfeZGnFsDTP9-twSgGa/view
- Personnel involved: Alina Aleksandrova, Joe Benson, Bob Carr, Brad Filippone, Xuan Sun, Chris Swank, Wanchun Wei.

Core assembly:

- <https://drive.google.com/file/d/1-TsolczyG6BuBEth8oaRTMB3g9MS41yX/view>
- Personnel involved: Alina Aleksandrova, Bob Carr, Brad Filippone, Raymond Tat, Wanchun Wei.