

# pfRICH Engineering Meeting Summary

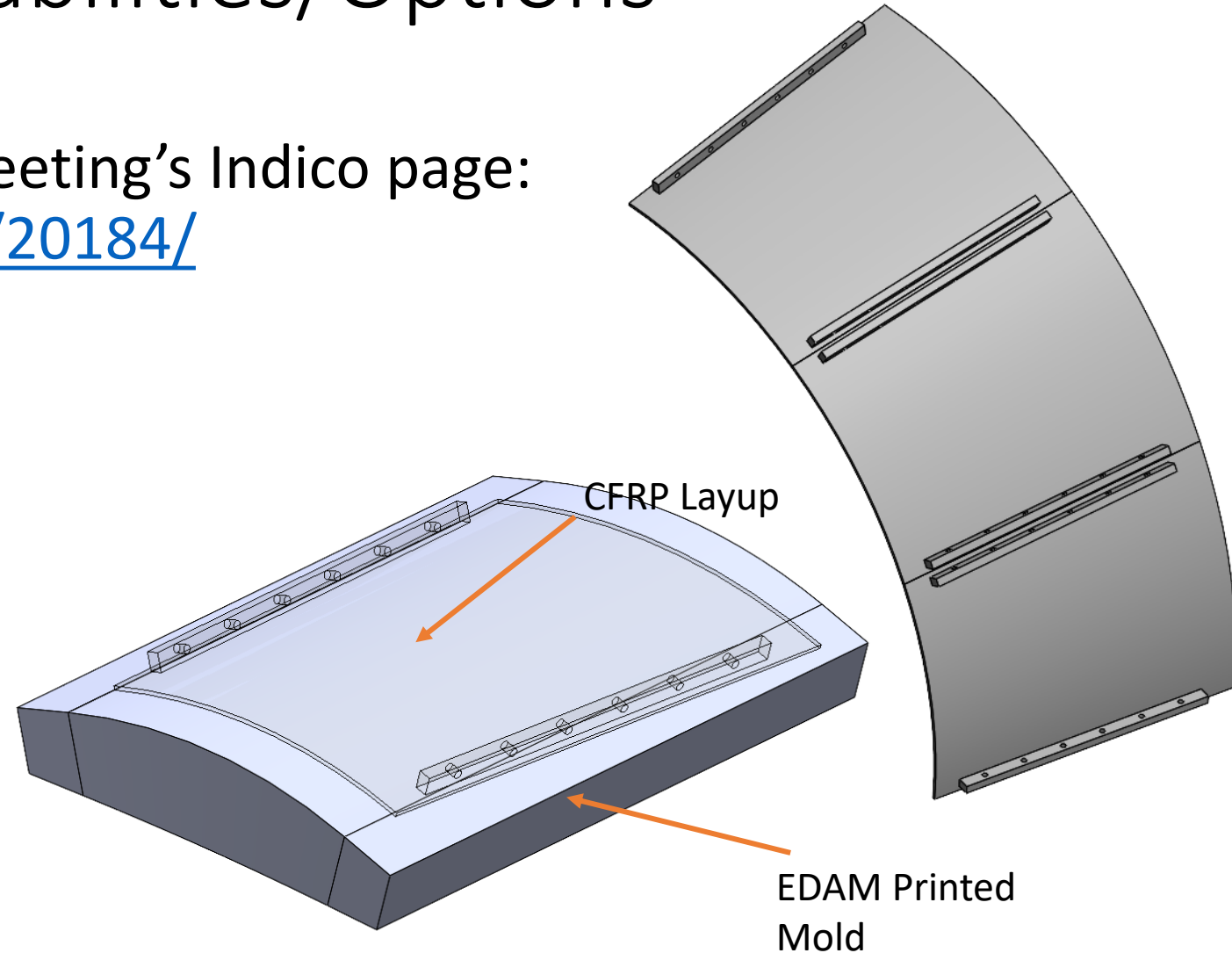
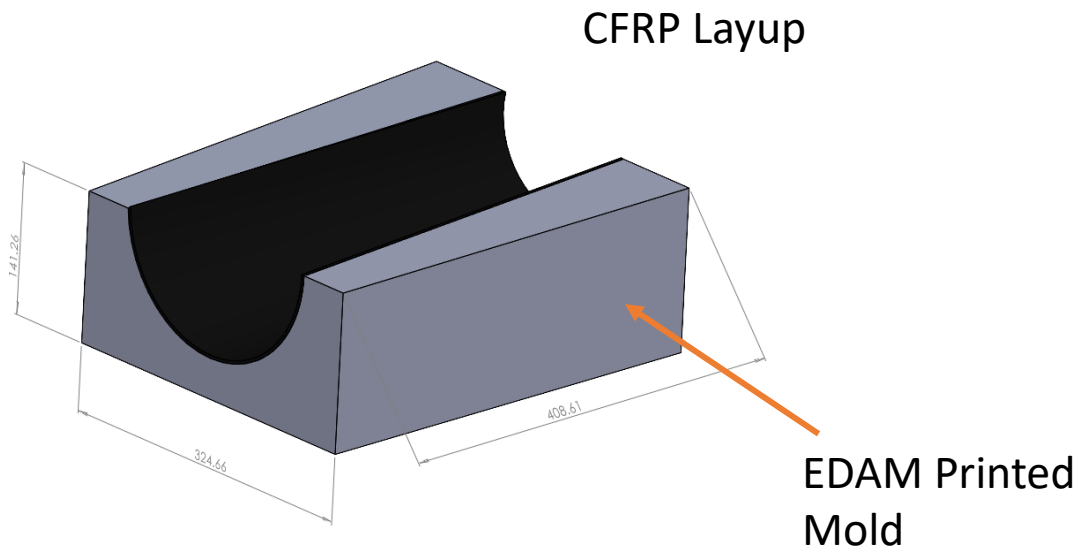
Alex Eslinger, JLAB

# Topics Discussed

- A presentation about the manufacturing capabilities by Andy (Purdue)
- A look at Dan's conceptual models addressing
  - Light and gas tightness
  - Alternate mirror attachment scheme
  - "Space Frame" vs "End Ring"

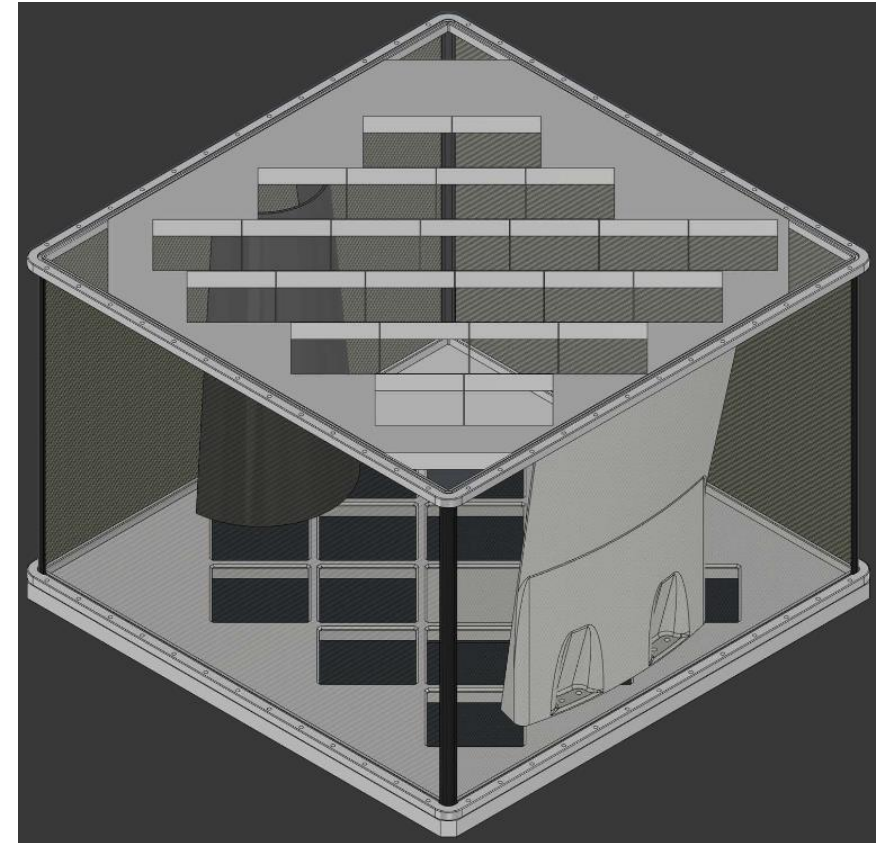
# Manufacturing Capabilities/Options

- Slides are available on the meeting's Indico page:  
<https://indico.bnl.gov/event/20184/>



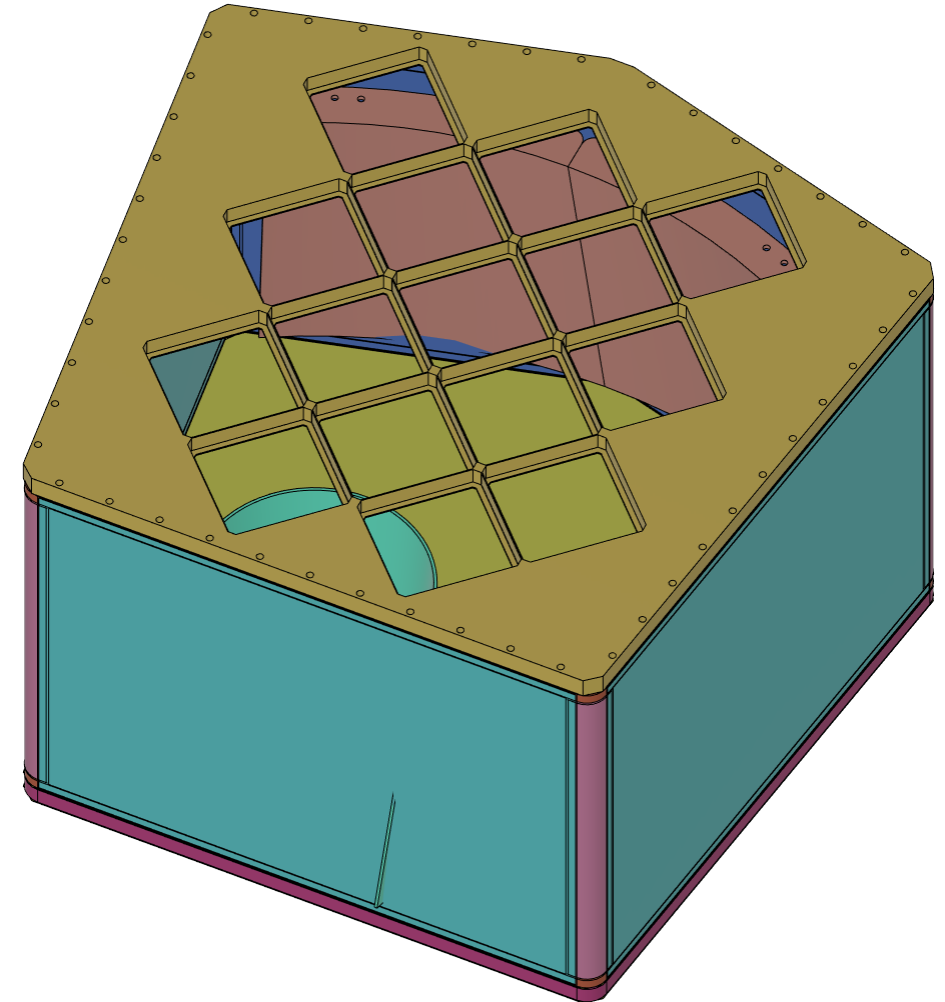
# Dan Cacace's Conceptual Model V1

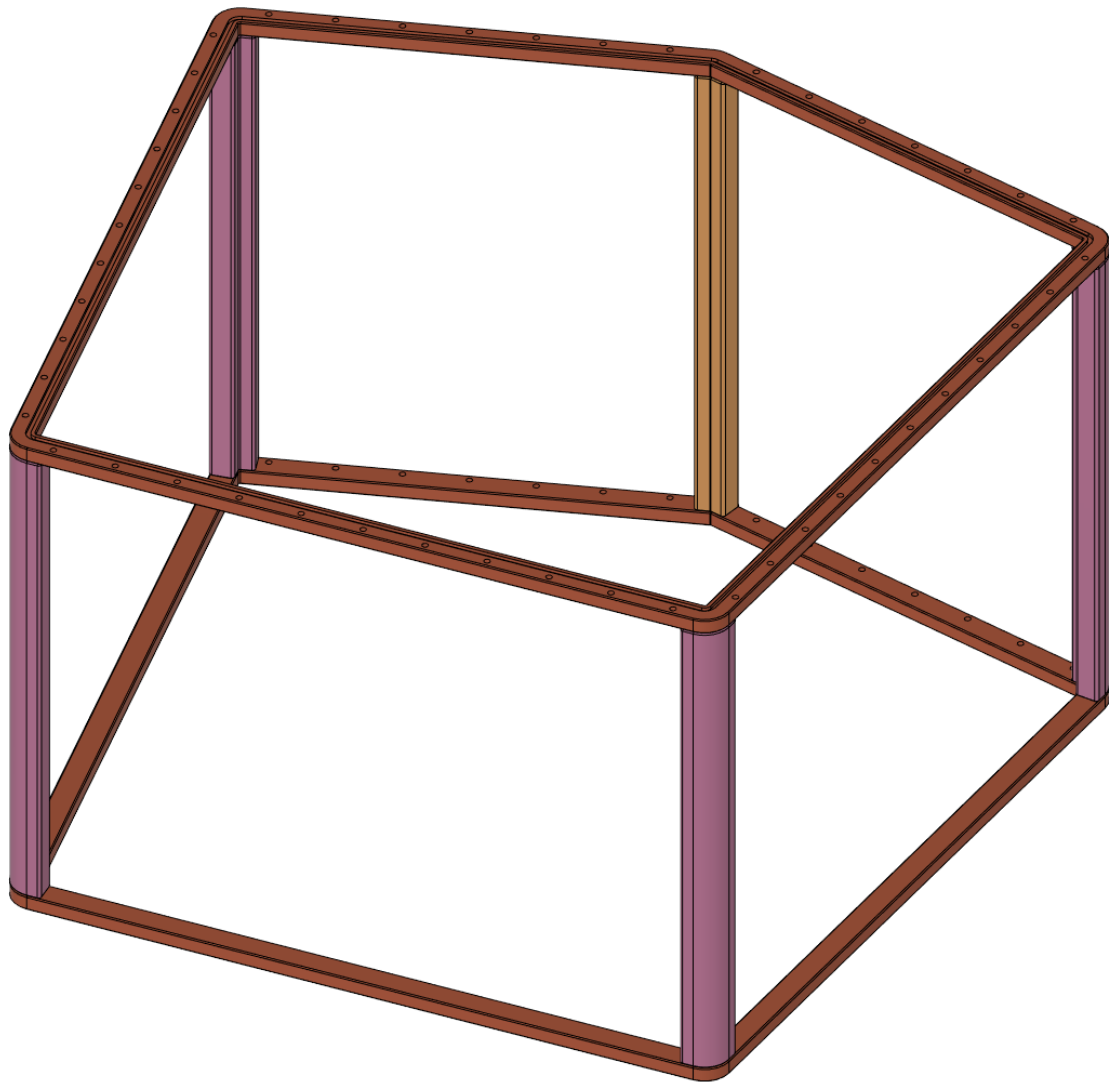
- A design was shown at the first meeting that deviated from the quadrant design... a lot of discussion surrounded this element
- The point of this model was less the geometry and more the design language
- Moving forward, we decided to take the best solutions from Dan's model and incorporate them into the quadrant model.



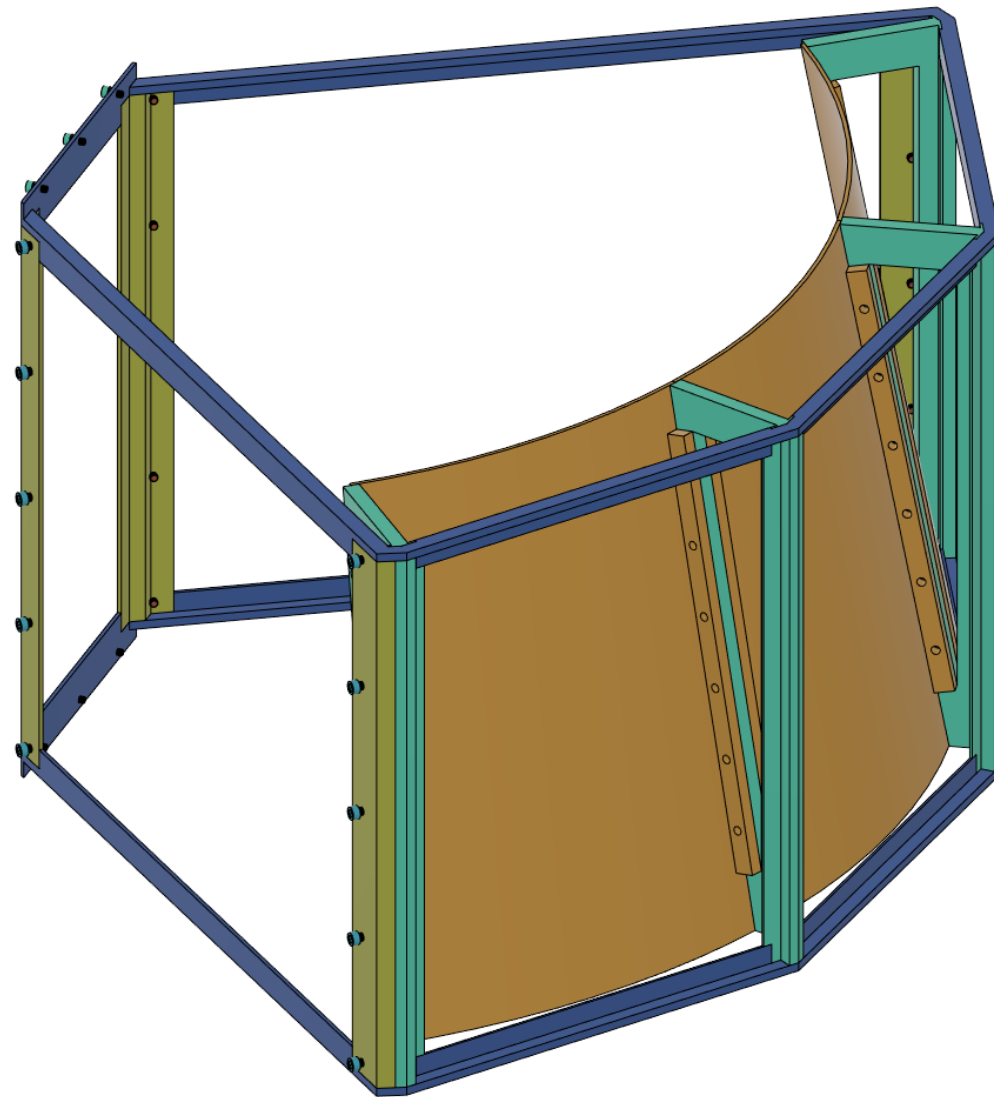
# Dan Cacace's Conceptual Model V2

- After the first meeting, and a discussion about going forward, Dan made a V2 model.
- This model incorporates the minimum number of elements to fulfill all the requirements of the beam test while also allowing us to test things like the interplay between two mirrors.
- The sensor plane openings meet all the requirements for the beam test (inner mirror reflections, directly in the middle, and outer mirror reflections).



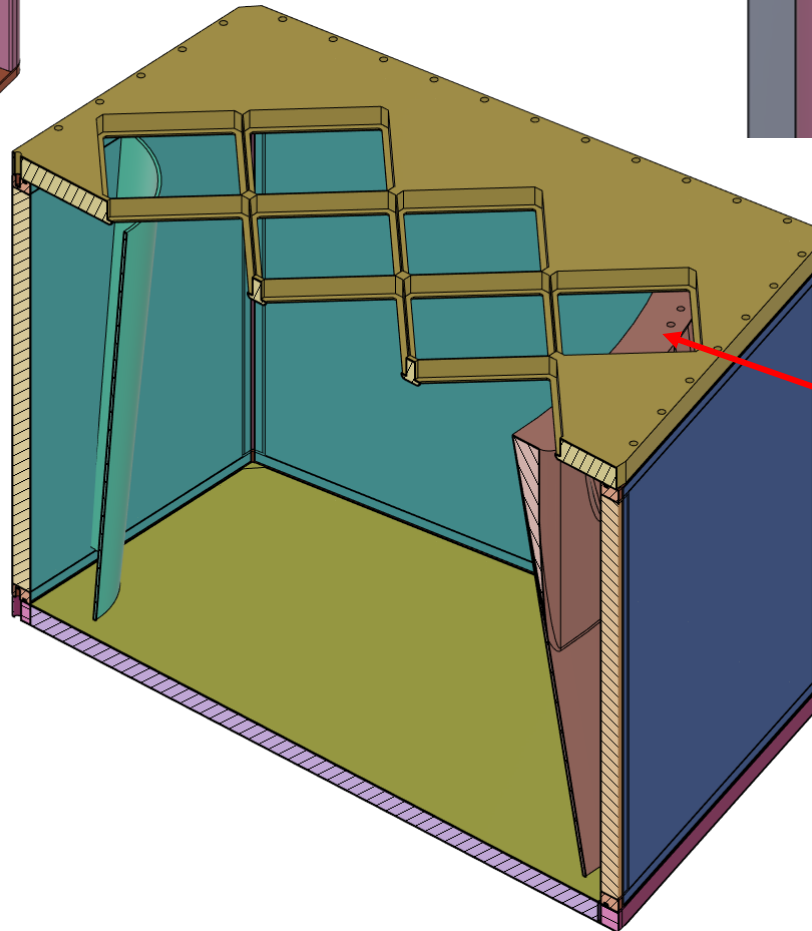
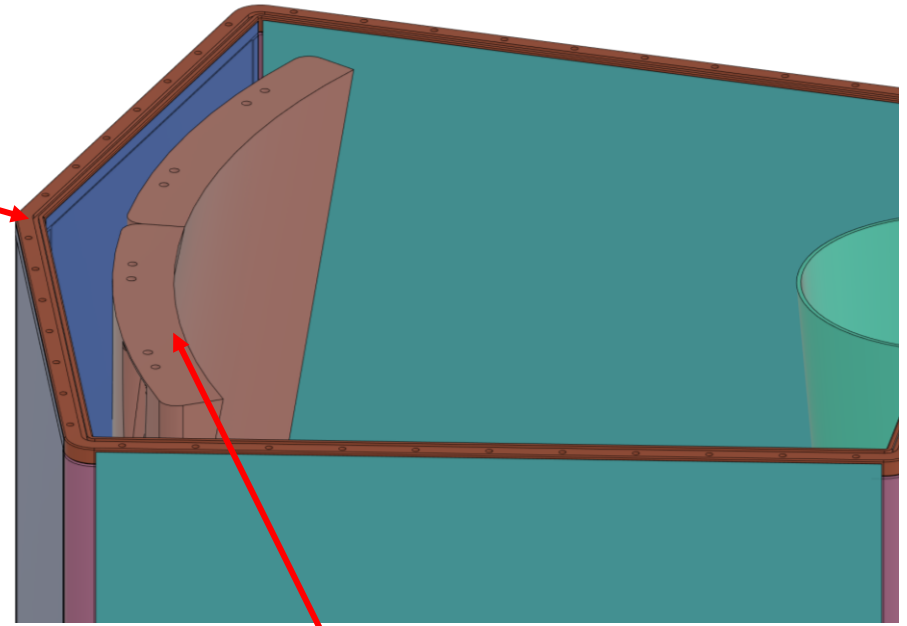
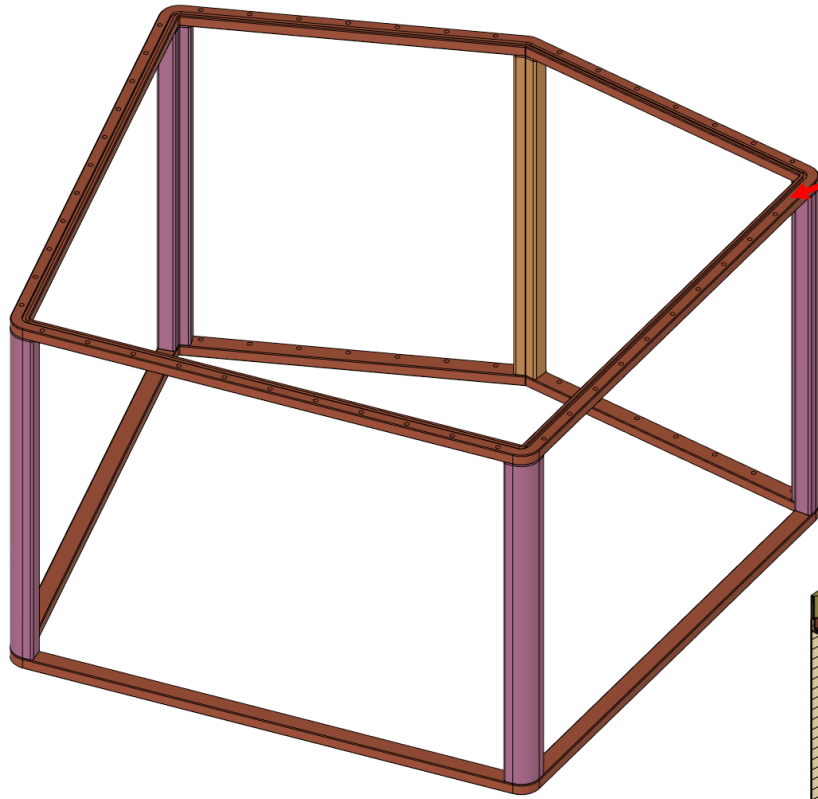


VS



Comparison: Left is Dan's V2 frame design (2-panel, 2-mirror), right is my design to this point.  
Things to note: Full face seal/o-ring vs gasket making, mirror mounting to the sensor plane vs mounting to the external frame, and using the panels (in Z) to carry the load vs using the frame to carry loads

Sealing Methodology



Mirror Mounting

# Summary

- Andy has presented information on how we can work with Purdue to manufacture the various pieces
- A mirror segment sample (CMA) has been sent from Stony Brook to Purdue to test the surface roughness
- Dan has provided some conceptual models that work to bring simplicity and some slightly different design ideology
- One of the main reasons we wanted to stay away from the “box” design (V1) was because it was viewed as too simplistic. In V2, the compromise was to strip out anything unnecessary while maintaining geometry close to the final design.
- Design decisions need to be made on the mirror mounting system and frame design and based on the full detector design constraints. Analysis still needed to be accomplished.

Questions?