

Tracking Updates (May 14)

- TDR plots
 - Minjung et al. : prepare benchmark scripts for tracking
 - Xin et al.: prepare vertexing plots
- Test tracking with timeframe
 - Event sample from Kolja: almost ready <https://indico.bnl.gov/event/23319/>
 - Timeframe unfolding with EICrecon (TBD)
- Detector misalignment
 - Joe Osborn's talk in the streaming computing meeting : <https://indico.bnl.gov/event/21619/>

Towards a Realistic Disk Layout

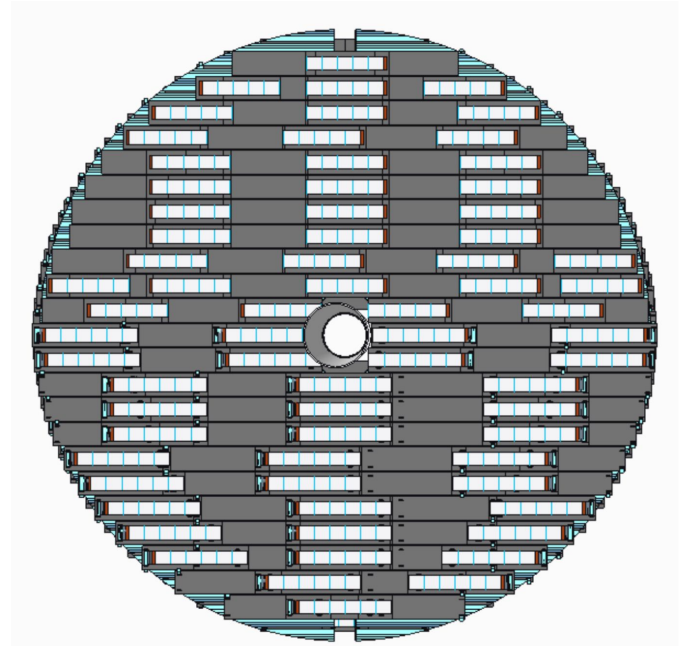
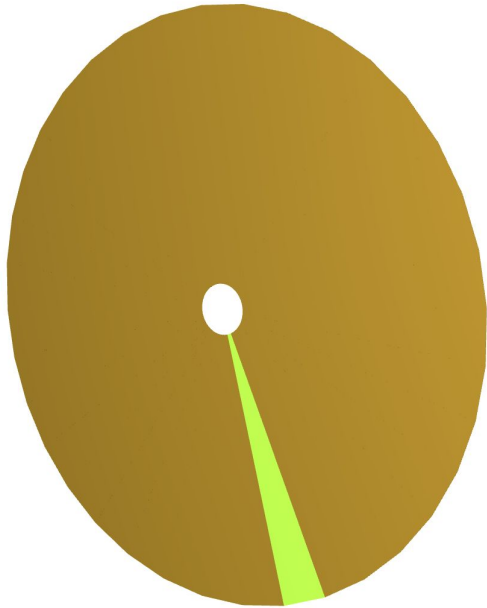
Shujie Li

LBL-EIC meeting

May 14, 2024

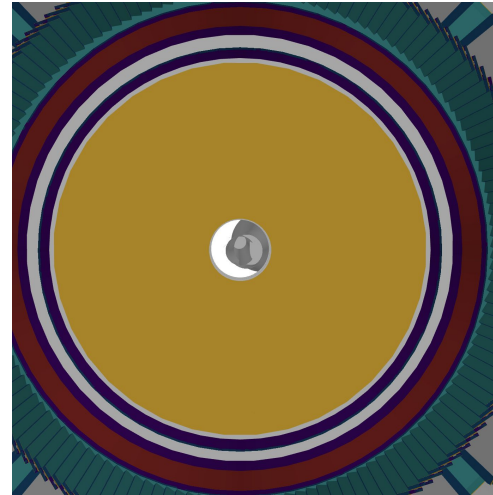
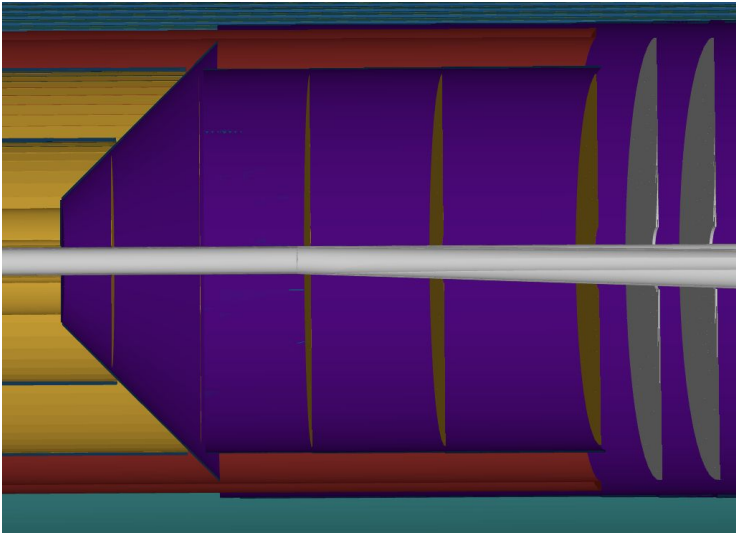
Goal: Construct Disk with sensor units

- Sensor unit with inactive area
- Realistic disk opening around beampipe for acceptance study



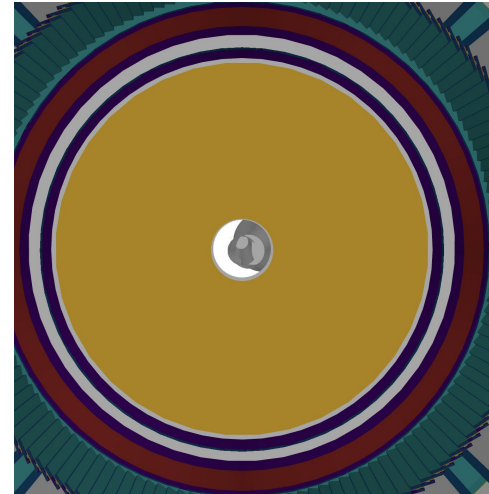
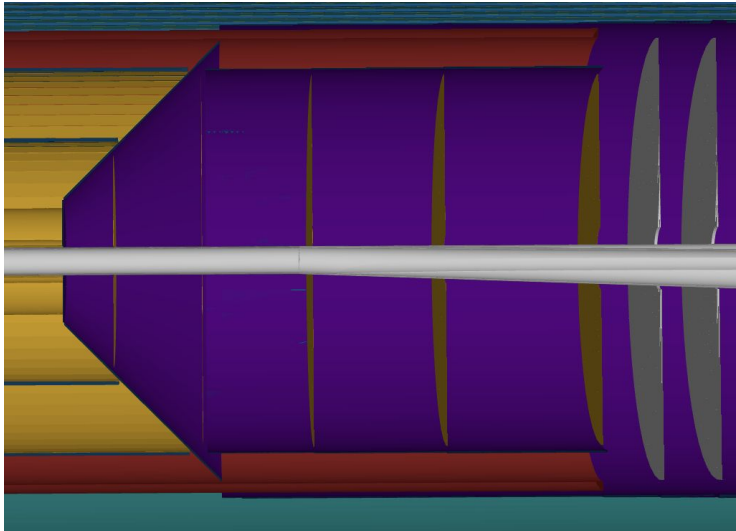
Status:

In simulation: Ring from trapezoid with larger centered hole to accommodate beampipe fanout



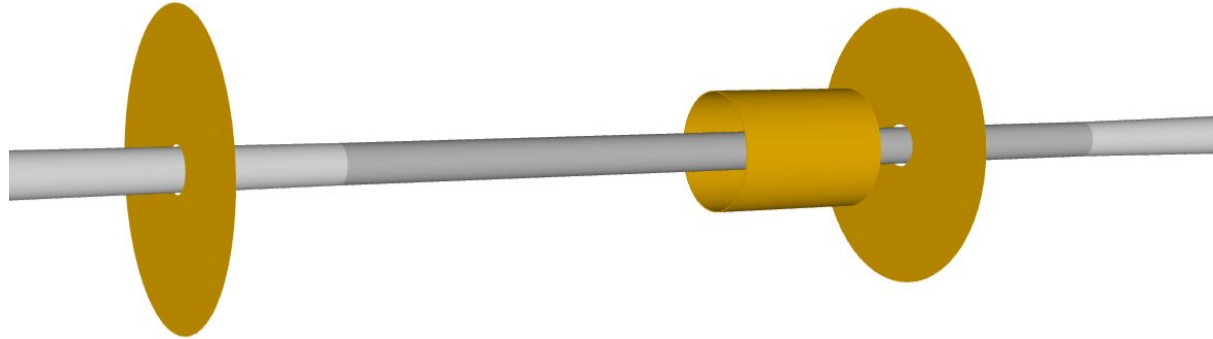
Plan:

- Sensor unit:
 - can use existing sensor unit code from Jonathan's Si barrel study
- Asymmetric opening to accommodate the beampipe fanout:
 - Implement the desired radial surface with off-centered hole in ACTS, or
 - Allow the current disk volume in ACTS (virtual) to overlap with beampipe materials

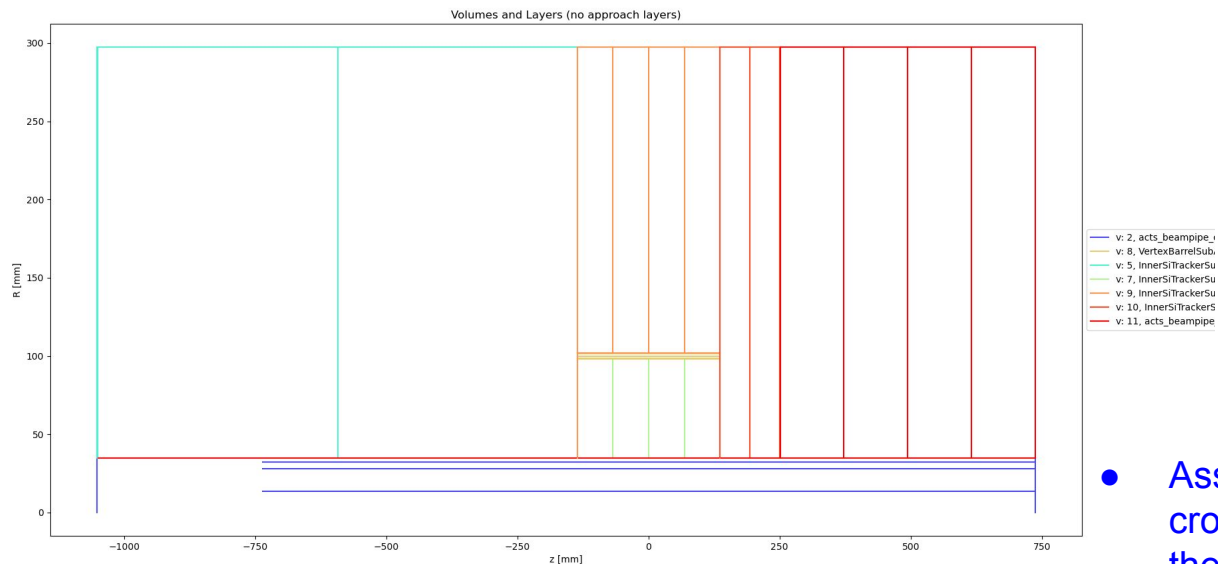


Test Geometry

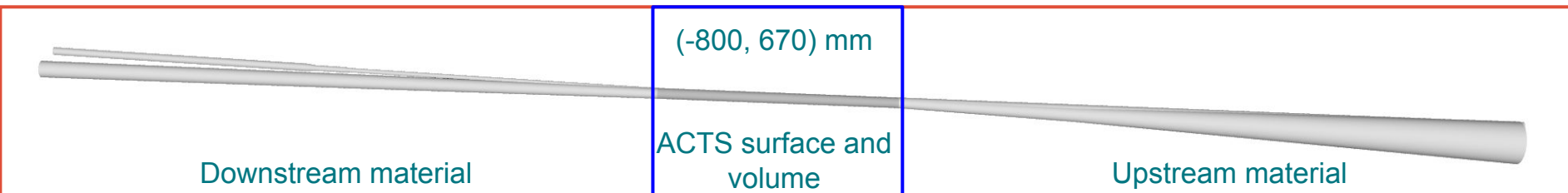
- Full ePIC central beampipe
- One barrel:
 - $R = 10\text{cm}$
- Two endcaps:
 - $Z = -105\text{cm}$ and 25cm
 - $R = 24\text{cm}$



Beampipe Volume in ACTS

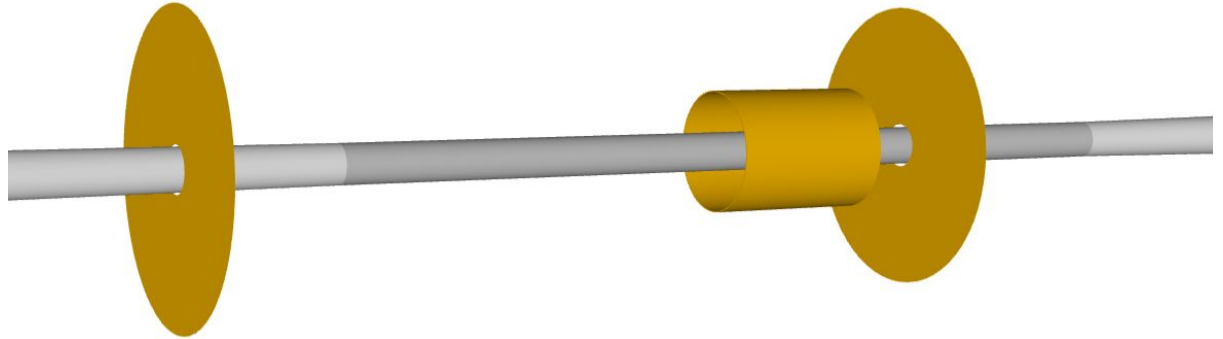
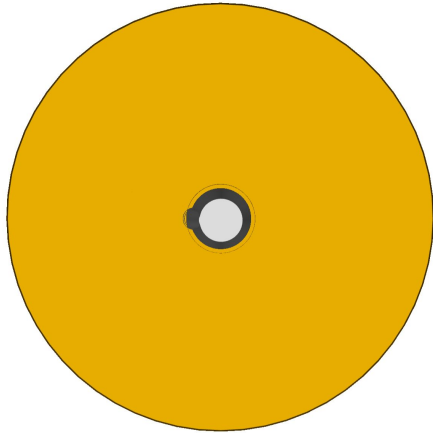


- Assumed particles only cross the beampipe within the central portion



Steps (proof of principle):

1. Create disk volume with hole at the center and overlap with beampipe material

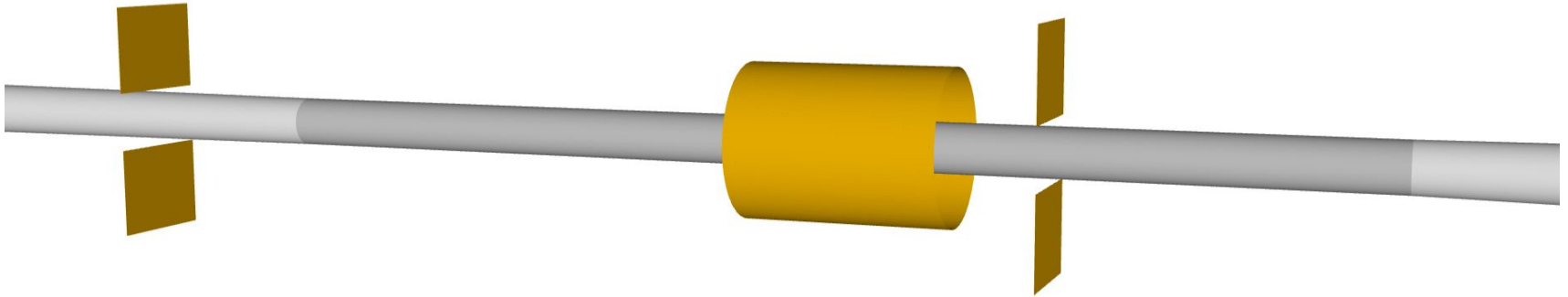


Steps (proof of principle):

2. Place modules within the disk volume:

To avoid ACTS error...

- always put a module within 5mm of the inner volume (layer) boundary
- Make sure the module has a paired endcap on the other side of the barrel



Hits in EICrecon

