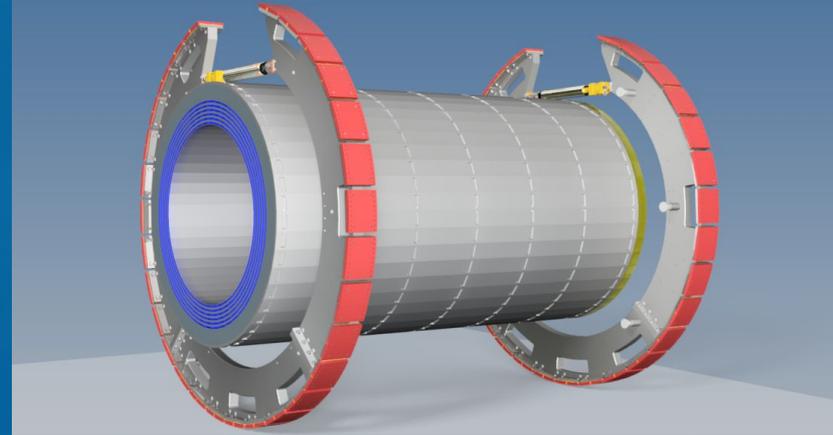


The ePIC Barrel Imaging Calorimeter

Summary: Mechanics & Sectors

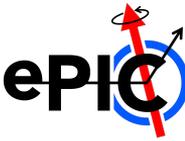


Sylvester Joosten
Argonne National Laboratory

4th BIC In-Person Workshop
April 9-11, 2025



Workshop Summary - Wednesday, April 9



Mechanics Schedule Review

- Spent several hours going through tasks related to mainly sector production, updated time and effort estimates
- Bottom-line is no drastic changes in critical milestones but a lot more realism in the schedule
- Solidified understanding in minimum set of test articles

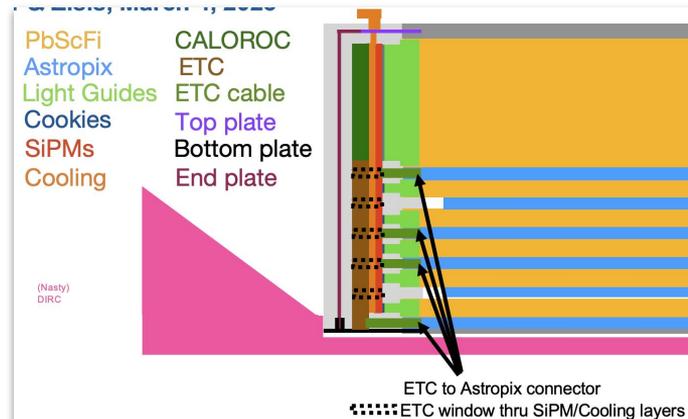
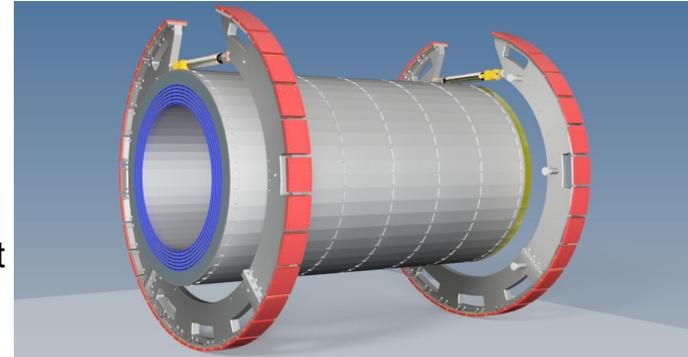
Joint Mechanics & Modules - Session did not happen due to lack of time

Workshop Summary, Thu, April 10, Part 1



Joint Mechanics & ESB

- ESB space allocations
 - Space assumptions w.r.t. connection to support rings?
 - Different paths for ETC - need to define a “version 0” interface spec
 - Features on back/front plate for attachment
 - Interface with ePIC and service bottlenecks
- Identified need to better define service flow and responsibilities (next ad-hoc session)
- Cooling strategy, open topics/questions:
 - Can we use metal-core PCB or do we need cooling lines?
 - Need to measure Pb/ScFi matrix heat conductivity
 - Either use existing old test article, or new SFIL
 - Need CF type
 - Need CAD models for ESB electronics to do proper heat simulations in ESB



Workshop Summary, Thu, April 10, Part 2



Ad-hoc Mechanics & ESB/DAQ & Modules Session

- Goals:
 - define version 0 of internal interfaces
 - Get everyone familiar with the entire ESB design
 - investigate who's responsible for which part
- Defined global input-output:
 - LV: 2x 30V + ground (separate SiPM and AstroPix LV)
 - HV:
 - 12-pin <400V (3mm diam bundle) for AstroPix
 - 1x <60V + ground for SiPM
 - 1x duplex optical link for all ETCs (use chip on FEB to aggregate all signals) - seems very doable based on rates
 - 1x duplex optical link for SiPM FEB

