

Still Implementing the Drift Chamber in DD4hep

Cheuk-Ping Wong

08-26-2024

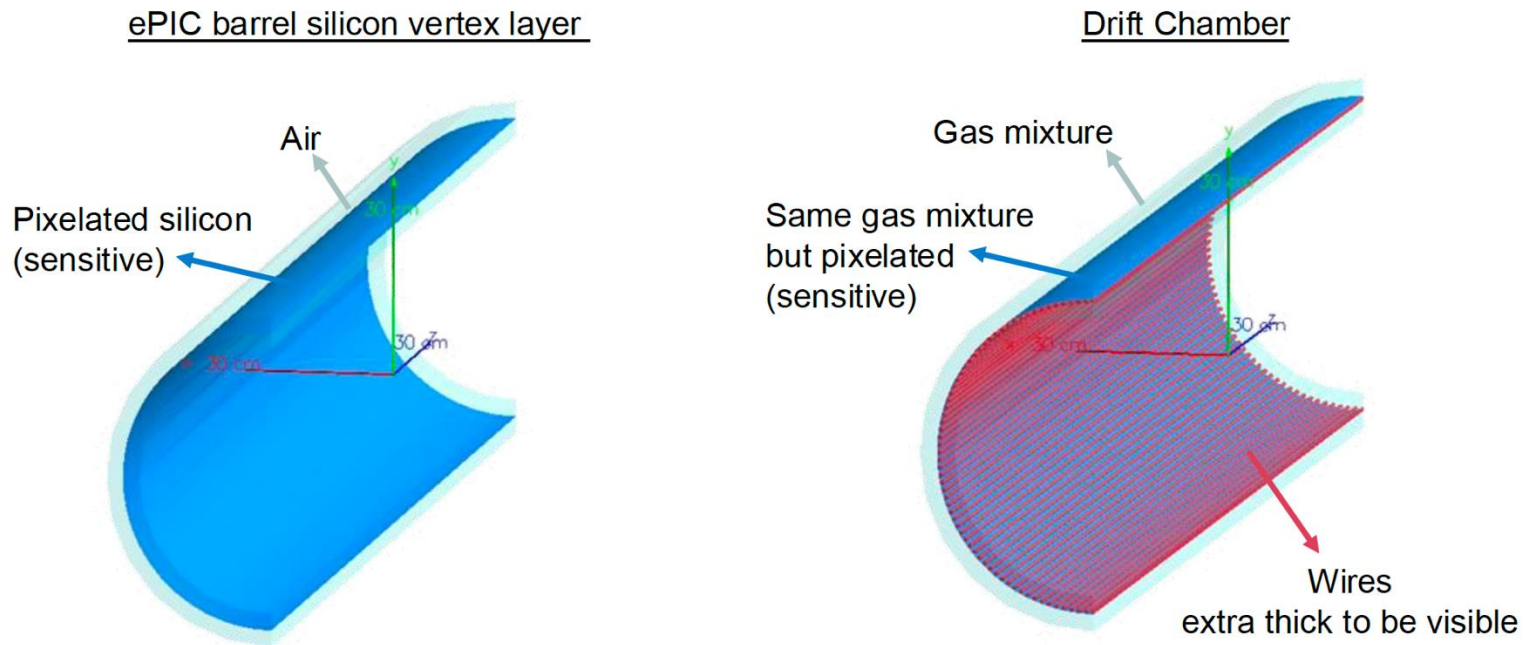


@BrookhavenLab

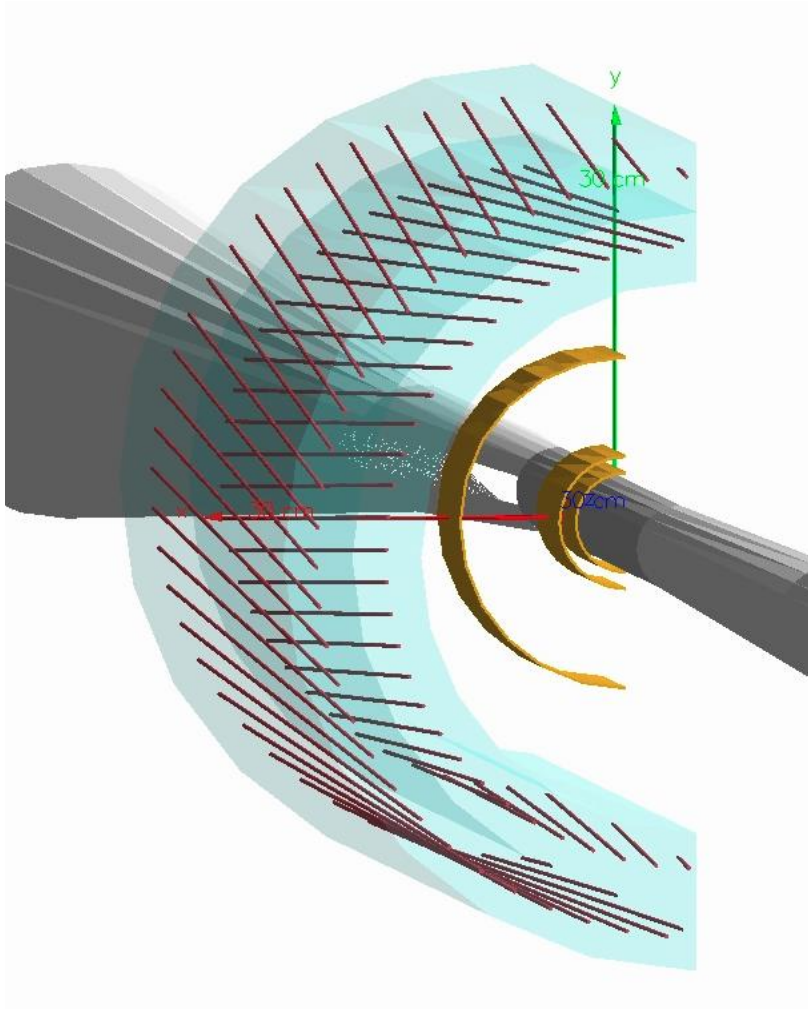
Last Update

https://indico.bnl.gov/event/21399/contributions/83985/attachments/56690/97119/bnl-eic-2nd-detector-DD4hep_DCH_20240819.pdf

Convert a Barrel Silicon Detector to a Drift Chamber



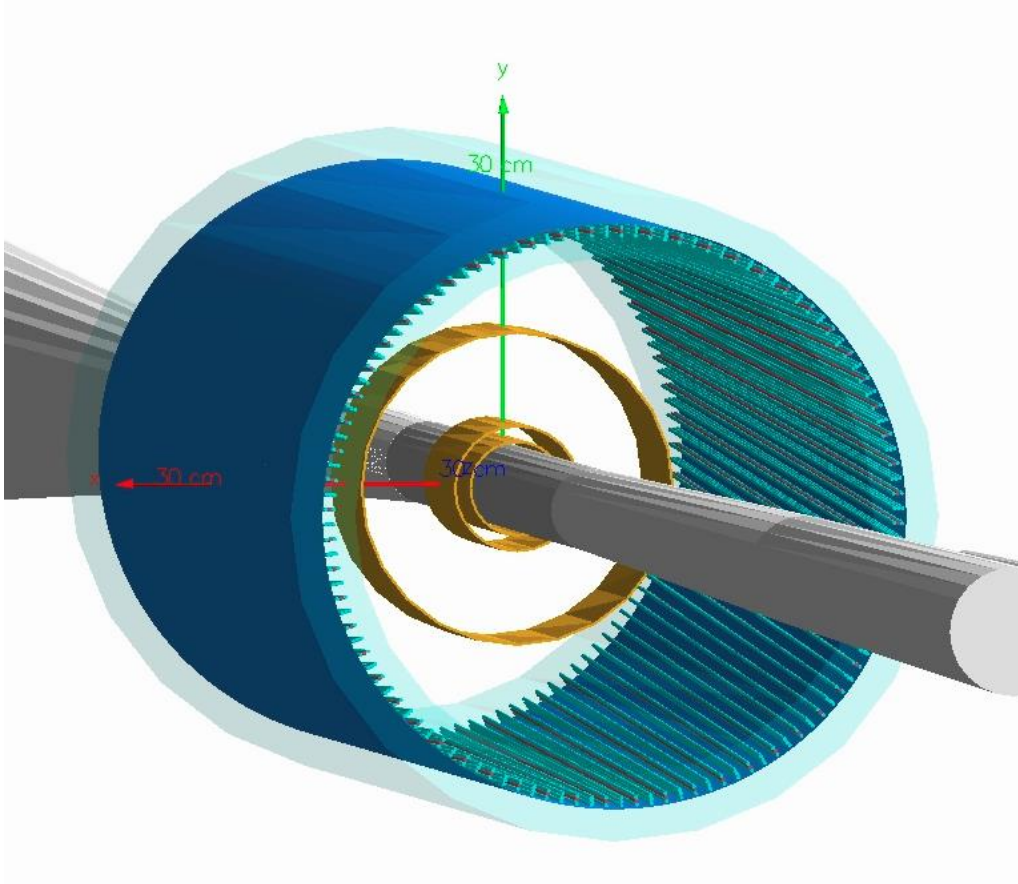
Implementation of the Mesh Wires



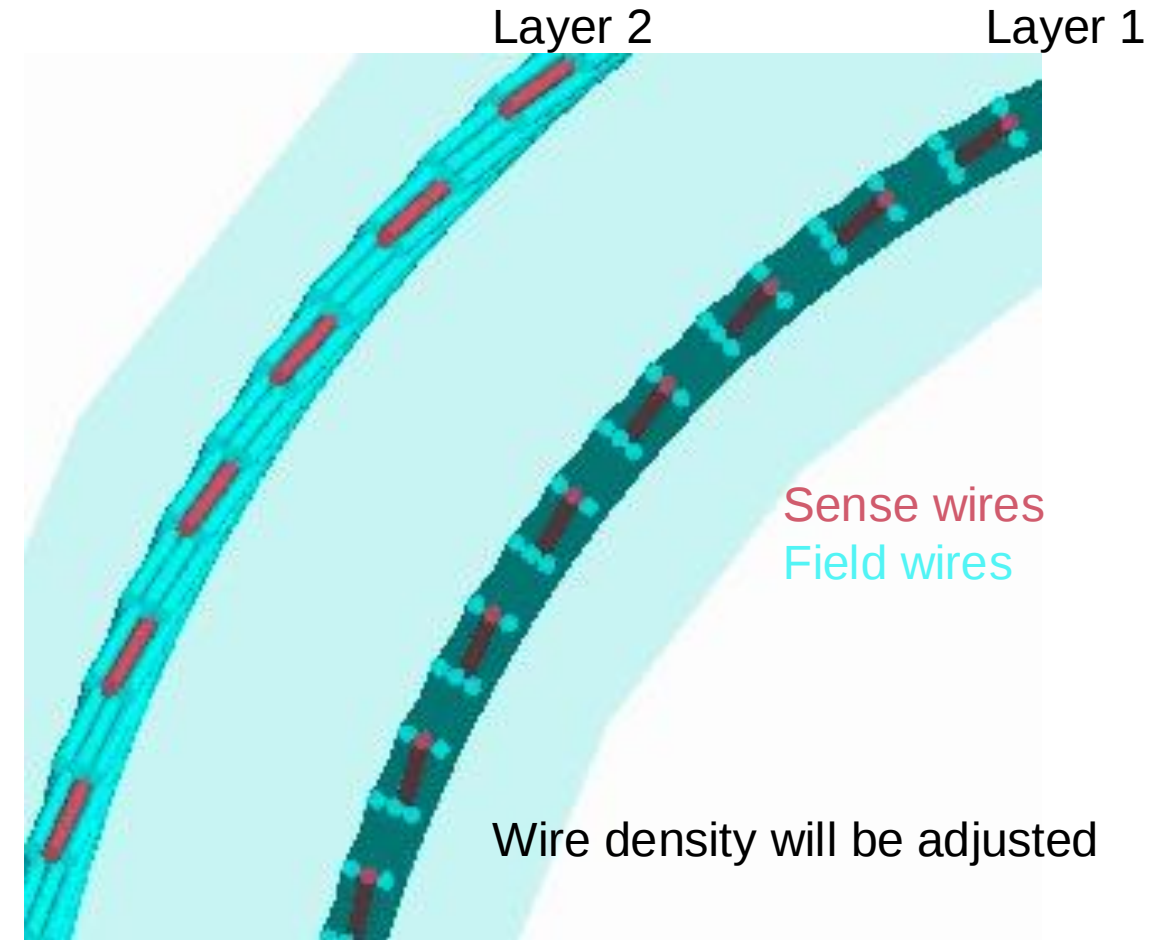
- Two layers of sense wires (red) with different stereo angles
- Layer (light blue) thickness is exaggerated to be visible

Implementation of the Mesh Wires

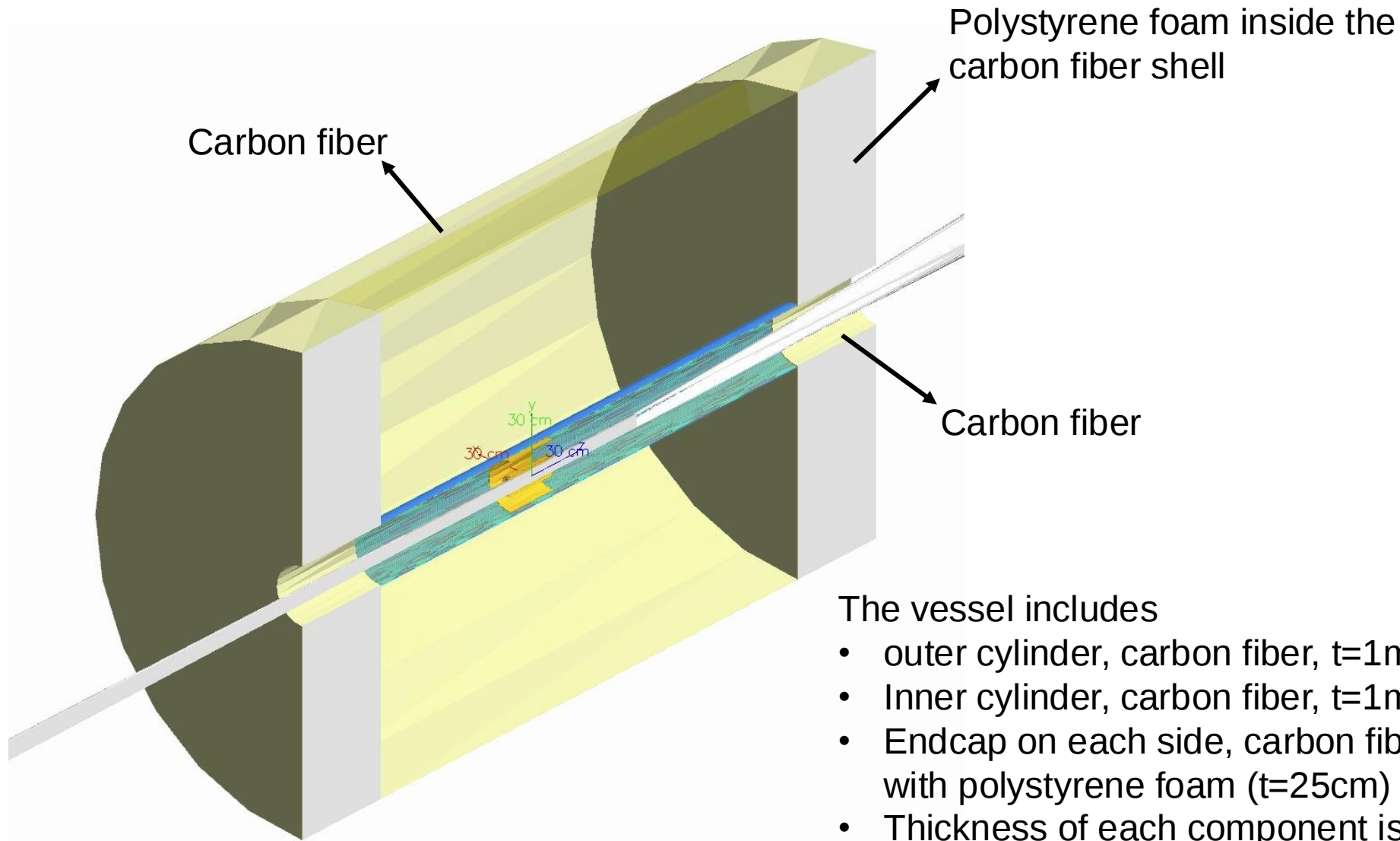
Overview



Darker blue is the sensitive layer



Implementation of the Vessel



The vessel includes

- outer cylinder, carbon fiber, $t=1\text{mm}$
- Inner cylinder, carbon fiber, $t=1\text{mm}$
- Endcap on each side, carbon fiber shell ($t=1\text{mm}$), filled with polystyrene foam ($t=25\text{cm}$)
- Thickness of each component is from

To-Do List

- Implement ~70 layers without hard coding in the xml file
- Un-pixelate the sensitive surface
- Run the simulation and pray that it does not exhaust the memory