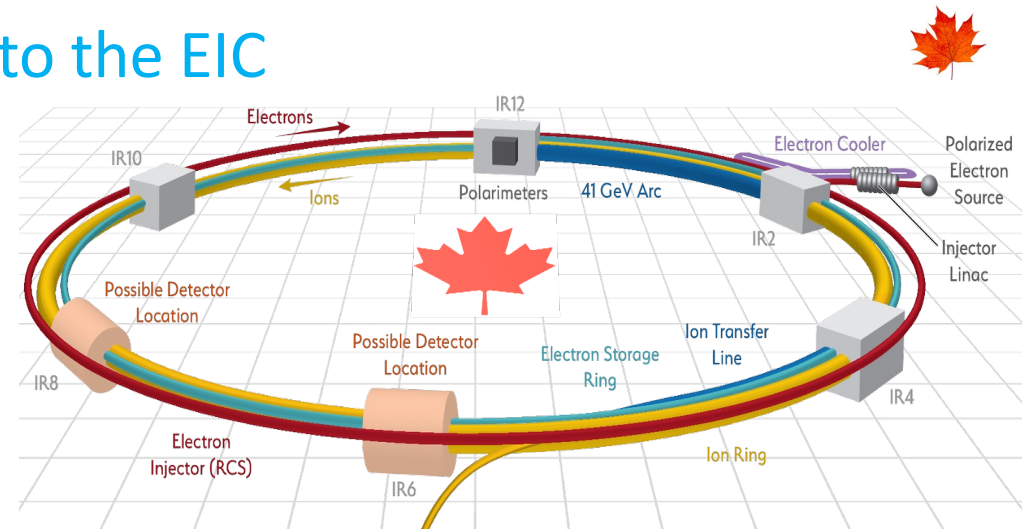
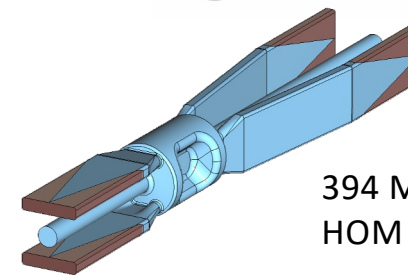
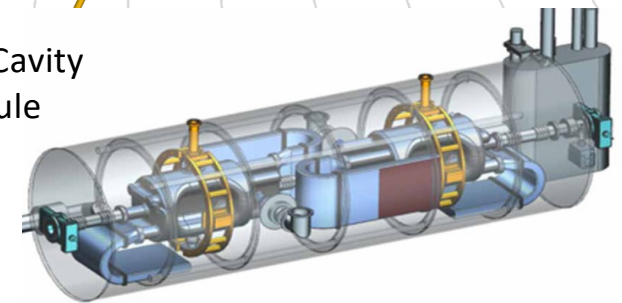


# Towards a Canadian contribution to the EIC Accelerator system

- The EIC will require crab cavity systems in both the hadron ring (HSR) and the electron ring (ESR) at both 197 MHz and 394 MHz
- TRIUMF is pursuing funding to support contributions to the 394MHz crab cavity systems
  - The present layout of the EIC foresees four 394 MHz cavities for the HSR, and two 394 MHz cavity for the ESR
  - The cavities would be assembled into cryomodules with helium jackets, tuners, fundamental power couplers and higher order mode (HOM) mitigation schemes
- Initial work has been done modeling the HOM damping requirements



EIC Crab Cavity Cryomodule



394 MHz crab cavity and HOM damping waveguides

# Towards a Canadian contribution to the EIC Detector system



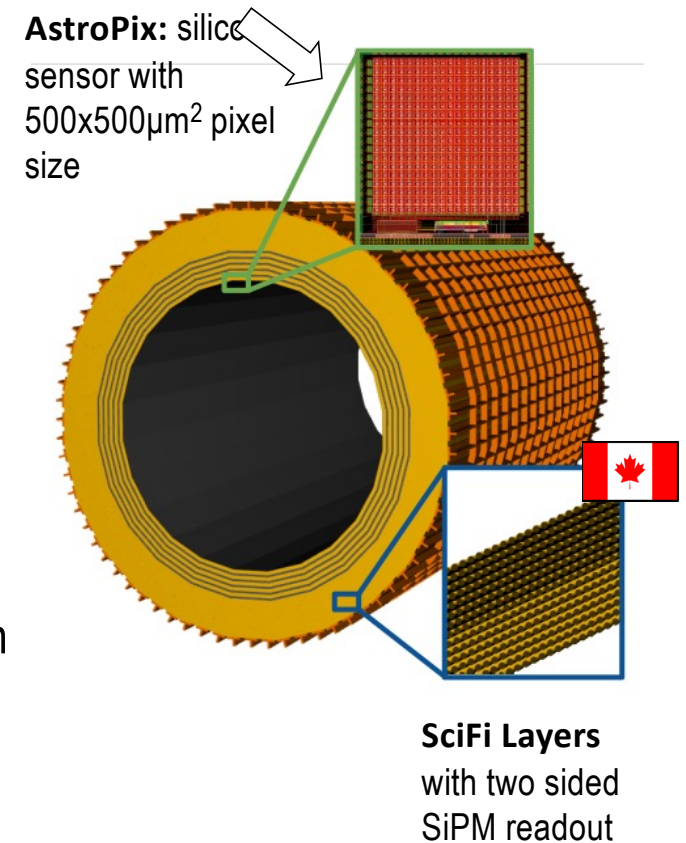
## EIC Canada focus areas

### Hardware:

- **Calo:** Si-pixel imaging + SciFi hybrid barrel
- **Barrel ECAL Technical Coordinator:** Z. Papandreou
- Building towards significant CFI-IF proposal for Calorimetry in 2025 competition

### Simulations:

- **ePIC Software WG co-convenor:** W. Deconinck
- **Software framework:** community-oriented (dd4hep, edm4hep, ACTS)
- **Novel AI work:** inner tracker design optimization, calo design using hierarchical density-based clustering
- **Event generators:** far forward region studies (ZDC, B0)
- **Physics:** Meson Form Factors at high  $Q^2$  XYZ Spectroscopy  
Charged lepton universality ( $e \rightarrow \tau$ )



# Towards a Canadian contribution to the EIC



- Canadian funding is generally through proposal-driven processes at NSERC and CFI
- CFI supports research infrastructure
  - IF25 call now out
  - ePIC and acc proposals in development (university led)
- NSERC supports research groups
- Federal Budget 2024 announced a ‘capstone’ organisation to help *advance internationally collaborative, mission driven and multidisciplinary research*
  - Details to come later

## CFI Infrastructure Fund 2025: key Canadian capital stream

### Important dates

| Activity  | Deadline        |
|---|-----------------|
| CFI issues draft call for proposals                         | Apr 18, 2024    |
| Deadline to submit feedback on the draft call for proposals | May 17, 2024    |
| CFI issues call for proposals                               | Jun 4, 2024     |
| Deadline to submit notices of intent                        | Oct 1, 2024     |
| Deadline to submit proposals                                | Jan 21, 2025    |
| Review by Expert Committees                                 | Mar to Jun 2025 |
| Review by Multidisciplinary Assessment Committees           | Sept 2025       |
| Review by Special Multidisciplinary Assessment Committee    | Oct 2025        |
| Decision by CFI Board of Directors                          | Nov 2025        |