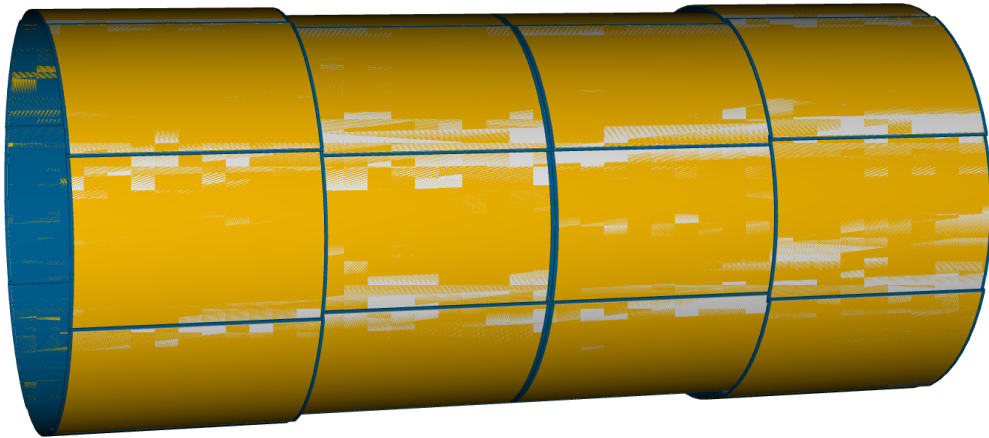
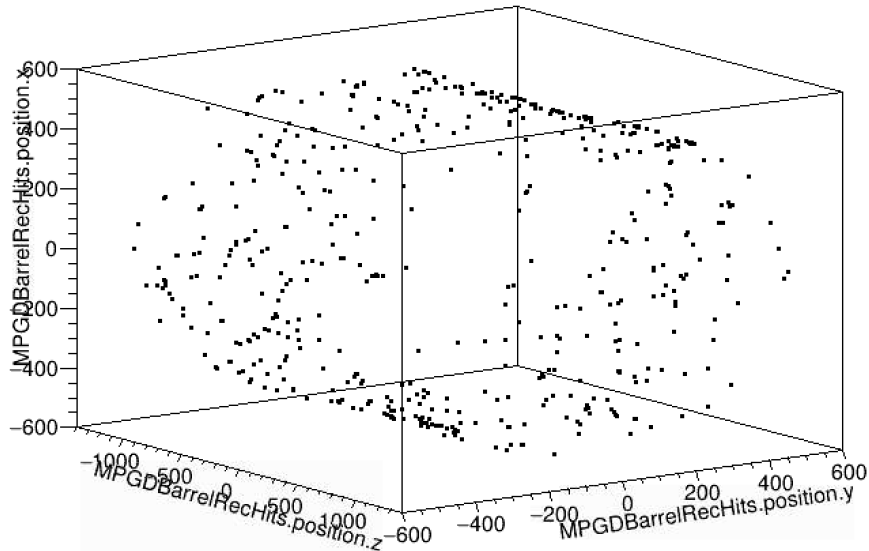


DD4HEP CyMBaL



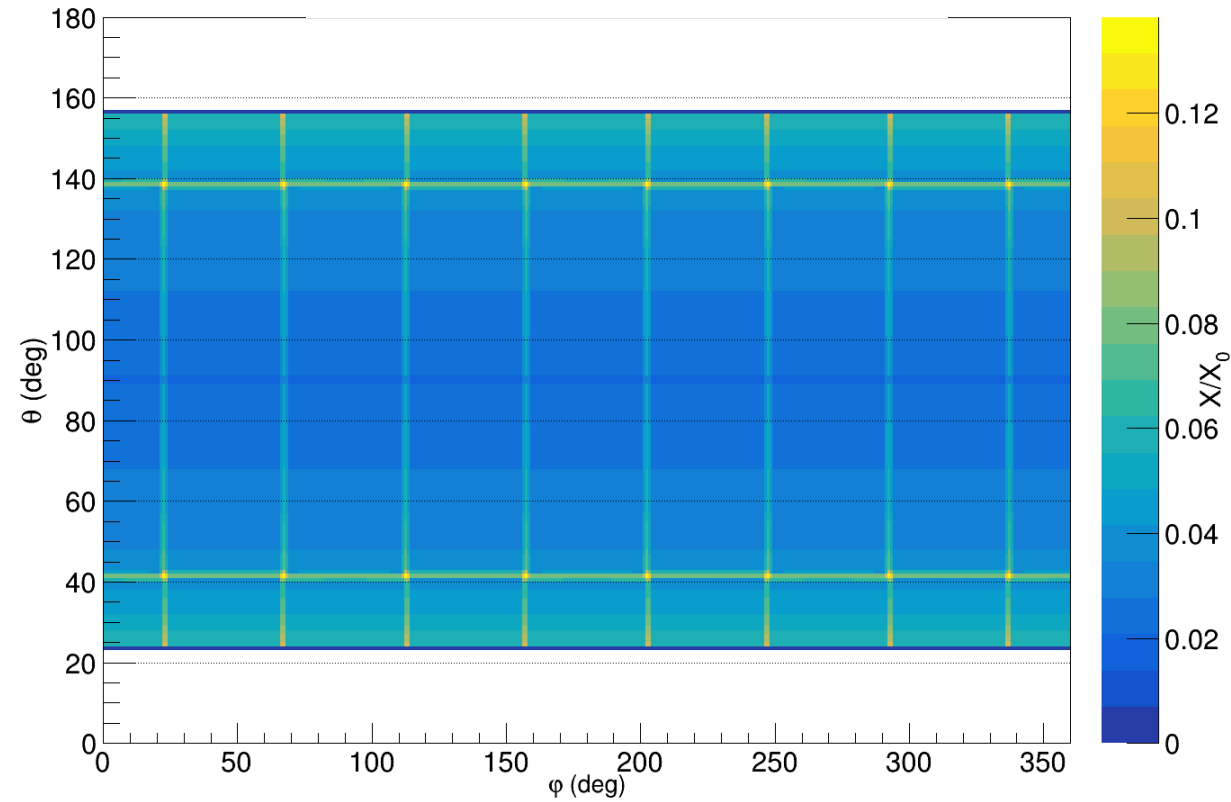
Tracker Hits (reconstructed hits) : Readout = XYZ



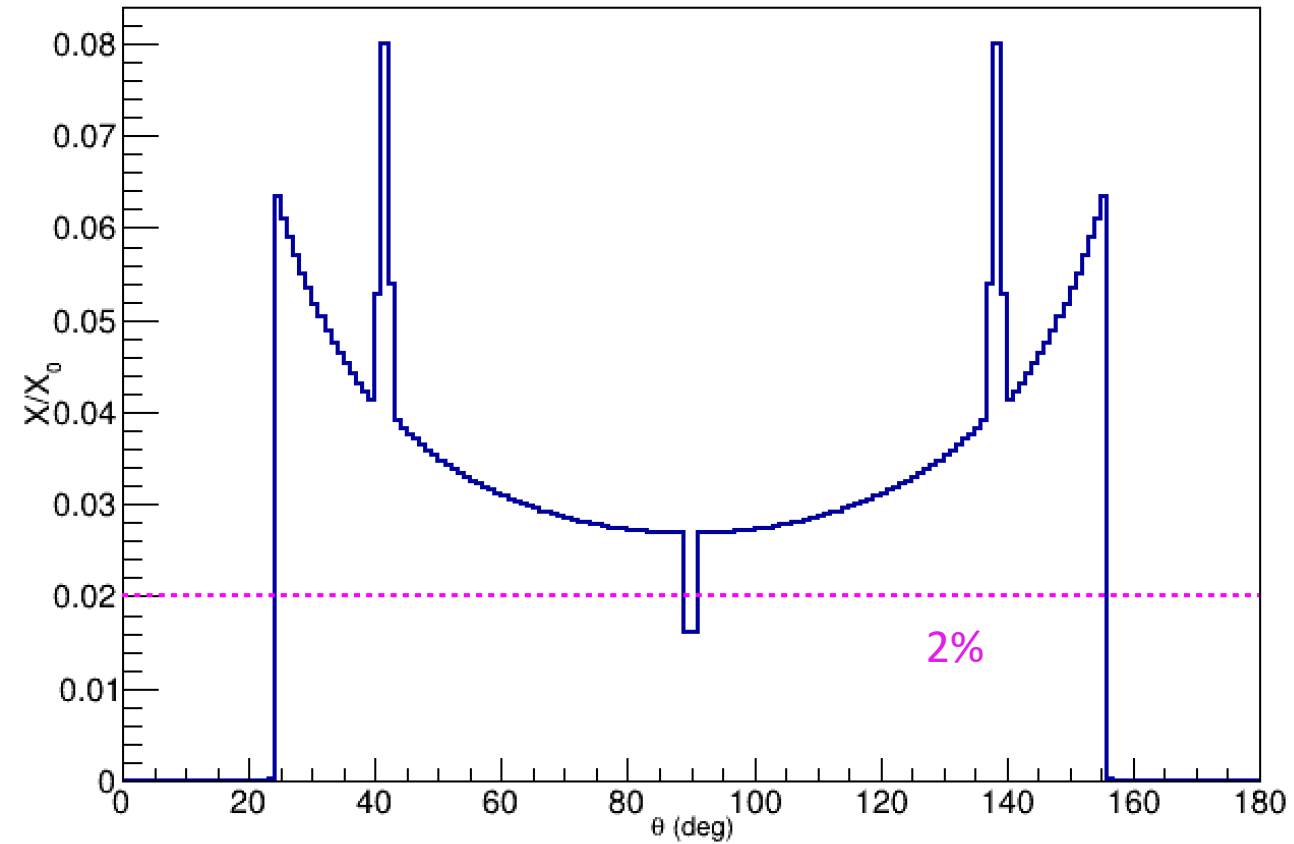
- ✓ Initial implementation started by Niv
 - Code debugged and now passes initial DD4hep and
- ✓ ACTS geometry checks using macros
 - checkOverlaps (for DD4hep geo.)
 - scripts/test_ACTS.cxx (for ACTS geo)
- ✓ EICrecon segfault solved by [fixing bug \(PR#1274\)](#) (Sakib)
- ⚠ Need to modify readout
 - Good time to start transitioning into strip readout segmentations

Is CyMBaL material budget correct?

CymBaL

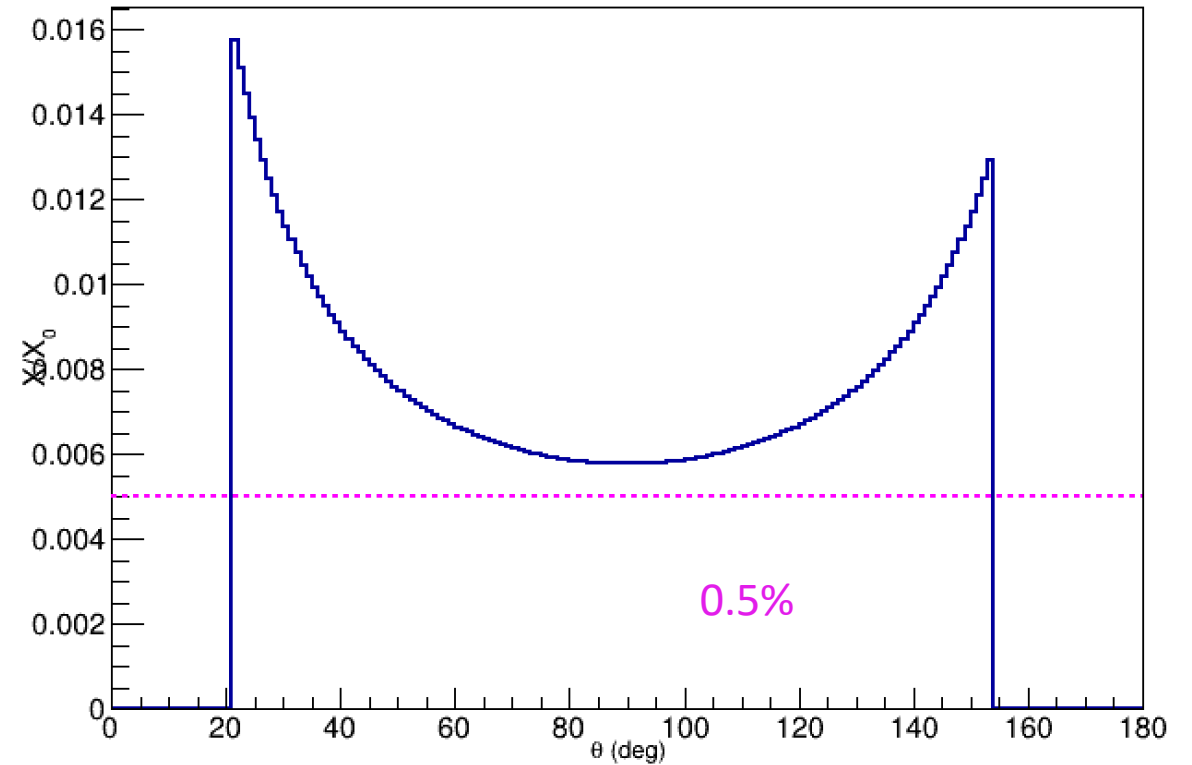


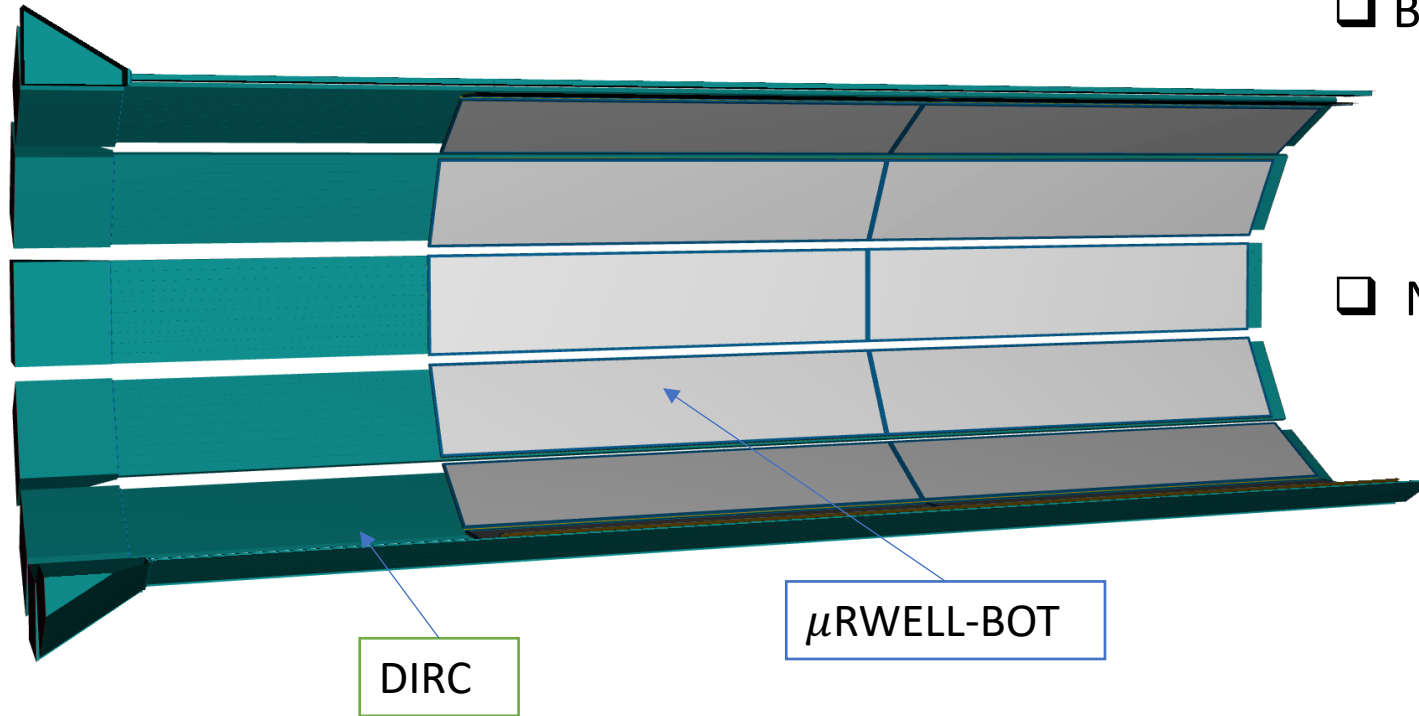
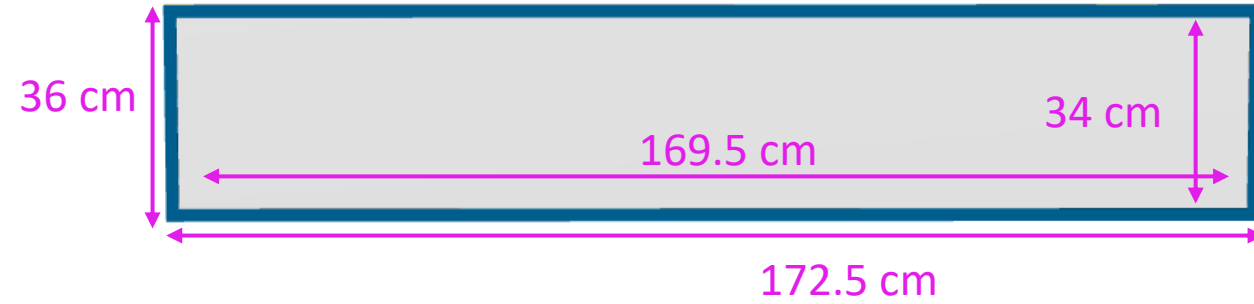
CymBaL



❑ Does the material used in the current ePIC simulation need updating?

Current Inner MicroMegas Barrel Layer



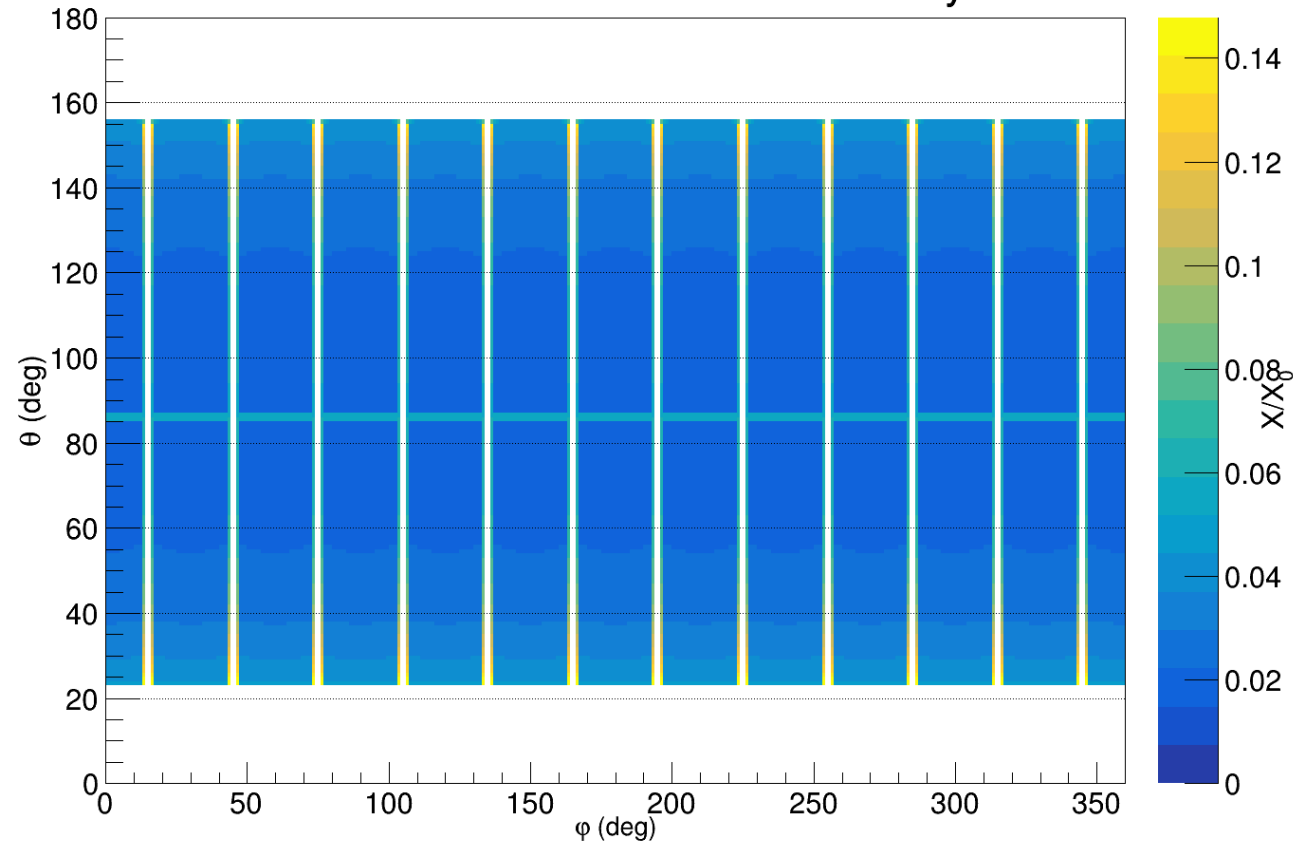


- Planar layers based on μ RWELL technology
- Two panels needed for full length
- Panels arranged around azimuth
- Frame width = 1 mm, thickness = 7 mm
- Barrel:
 - $L = 339 \text{ cm}$ ($-164.5 \text{ cm} \leq Z \leq 174.5 \text{ cm}$)
 - $R = 72.5 \text{ cm}$
- Now matches DIRC bar width

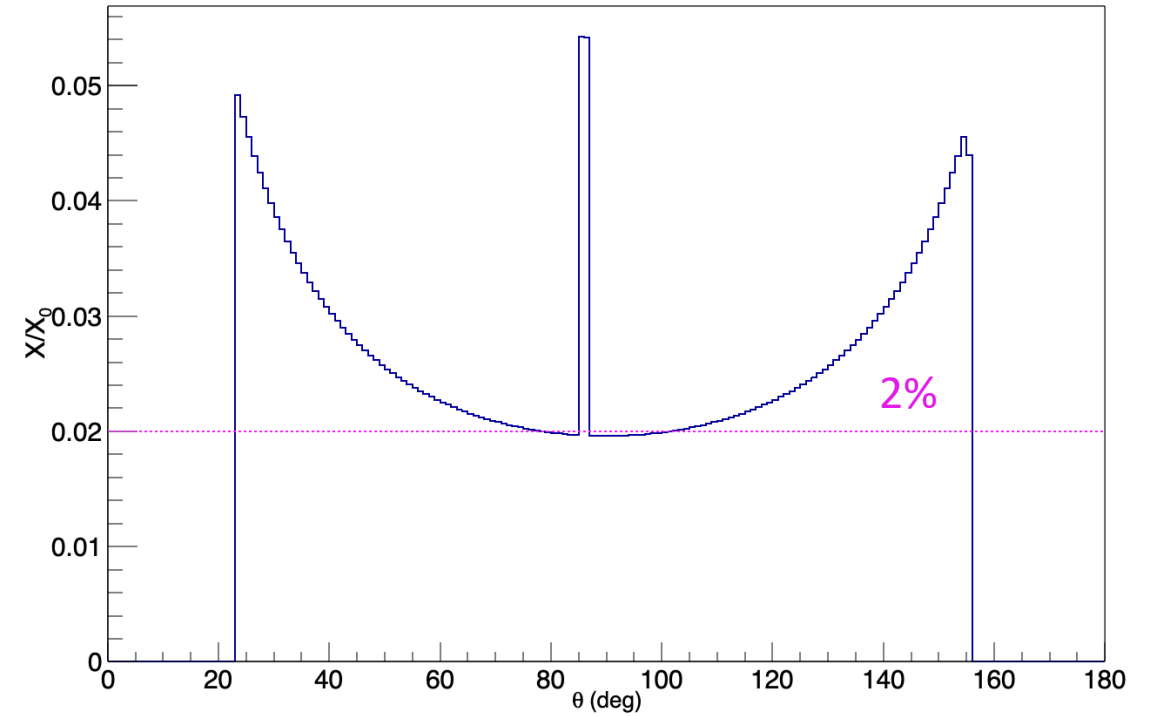
Simulation Implementation: Feb. 1st, 2024

☐ Based on optimized active area design (see [here](#))

OuterBarrelMPGDSubAssembly



OuterBarrelMPGDSubAssembly



❑ Realistic Material Representation (critical)

- Detectors:
 - CyMBaL – open task
 - μ RWELL-BOT – open task (up to date with current design)
 - μ RWELL-ECT -- Mariangela
 - Detector Services (HV, signal, power, gas, cooling cables, etc.) – open task

❑ Digitization

- Detector hit resolution based on particle trajectory angle relative to readout orientations -- Babu

❑ Strip Readout

- Transition from pixel like readout to 2D strip readouts – open task

Contributors are welcomed!
All tasks can have multiple contributors