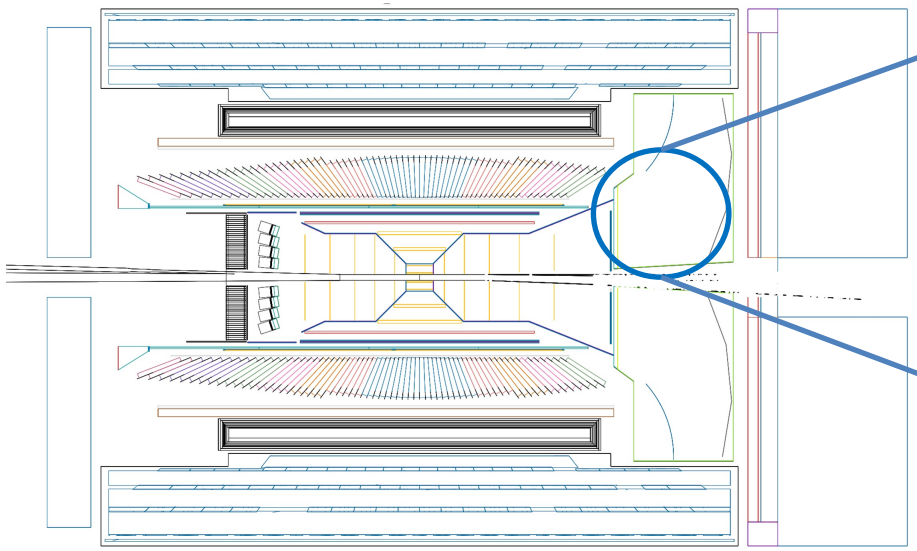
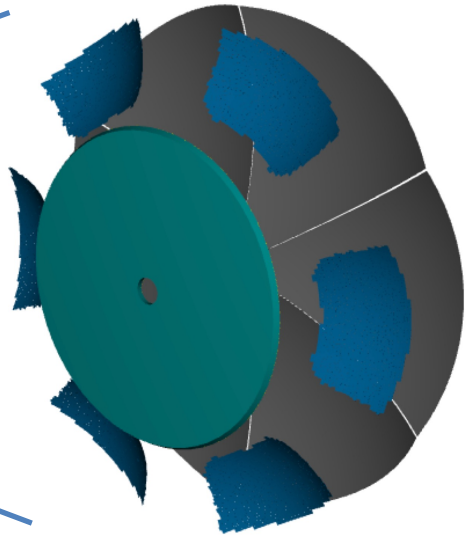
dRICH

EPIC

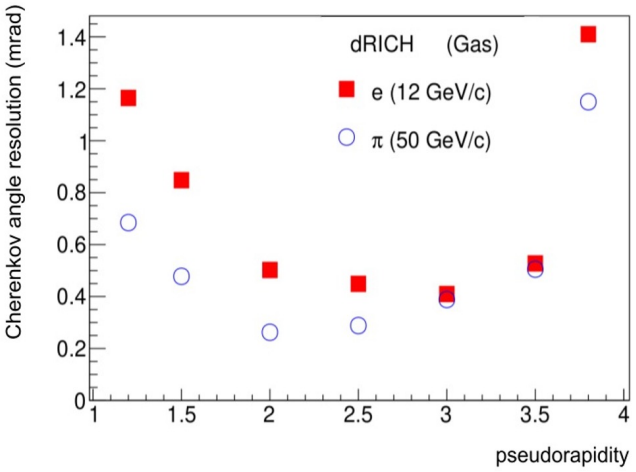


dRICH

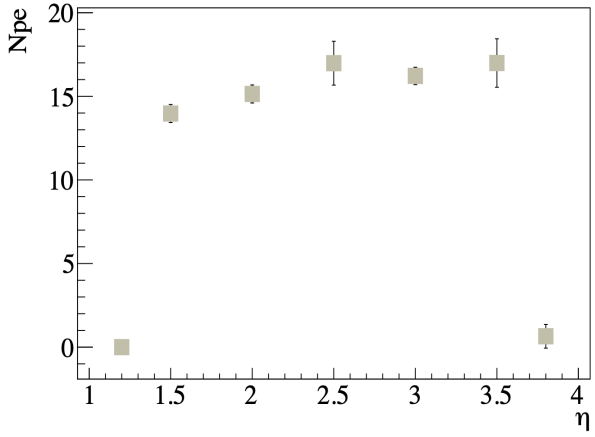


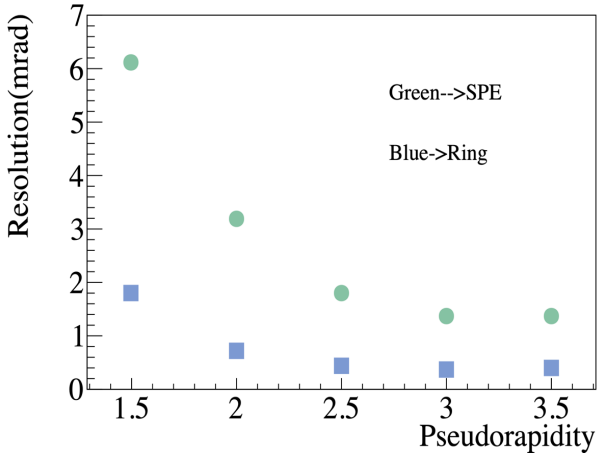
Recipe: path length to get light yield
optics to ensure acceptance/focalization

ATHENA reference



EPIC re-tuning

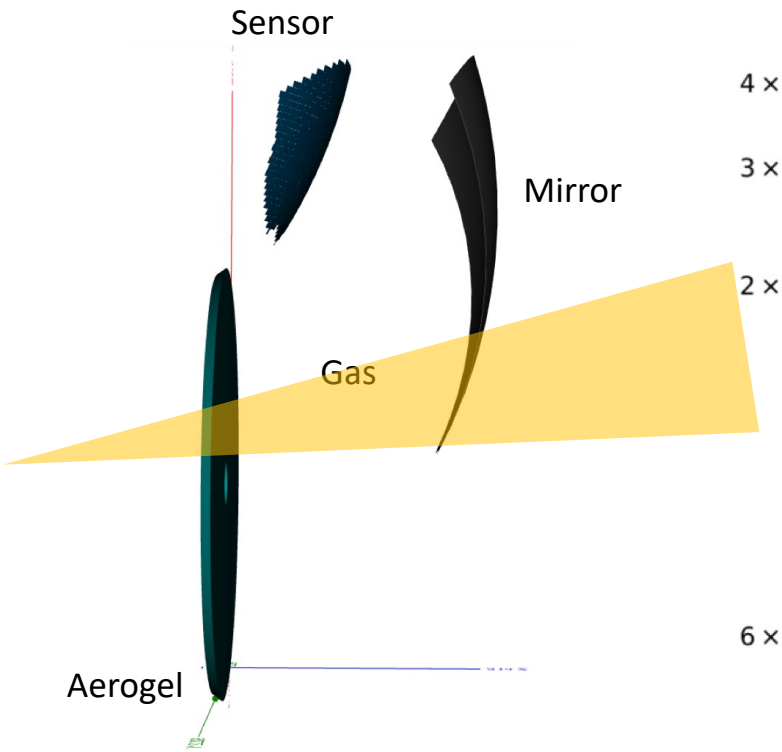


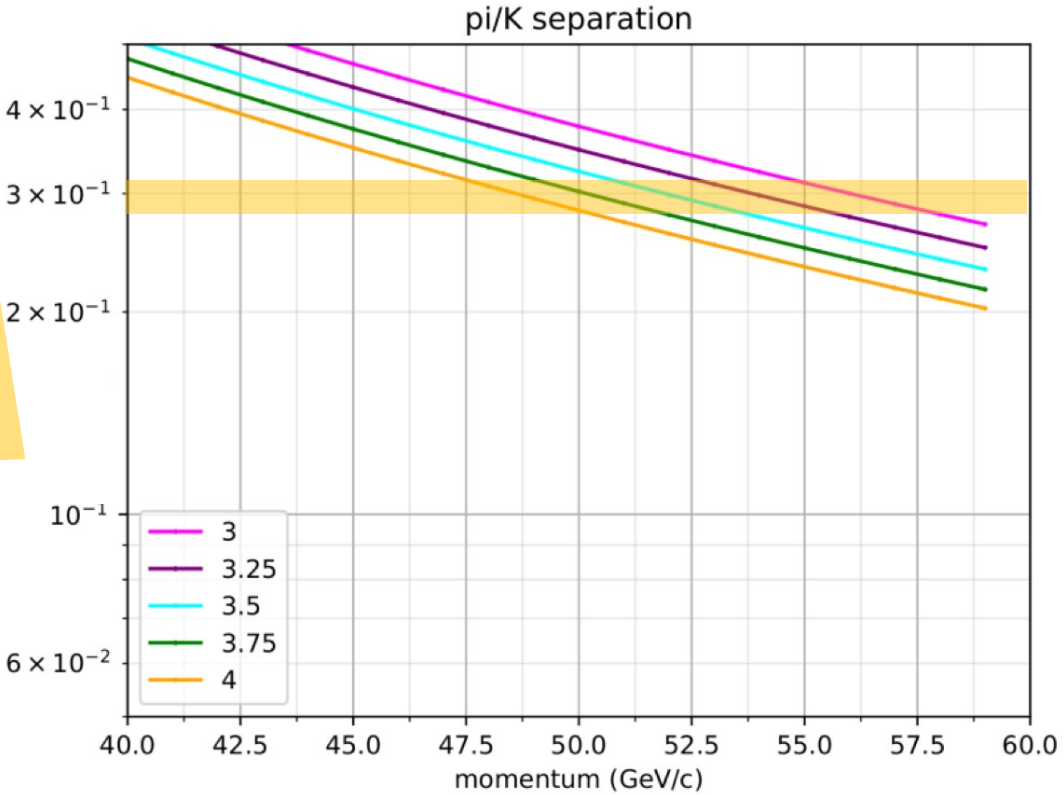


dRICH Performance

Preliminary reshaping provides 0.3-0.35 mrad resolution in the 2.5-3.5 rapidity range

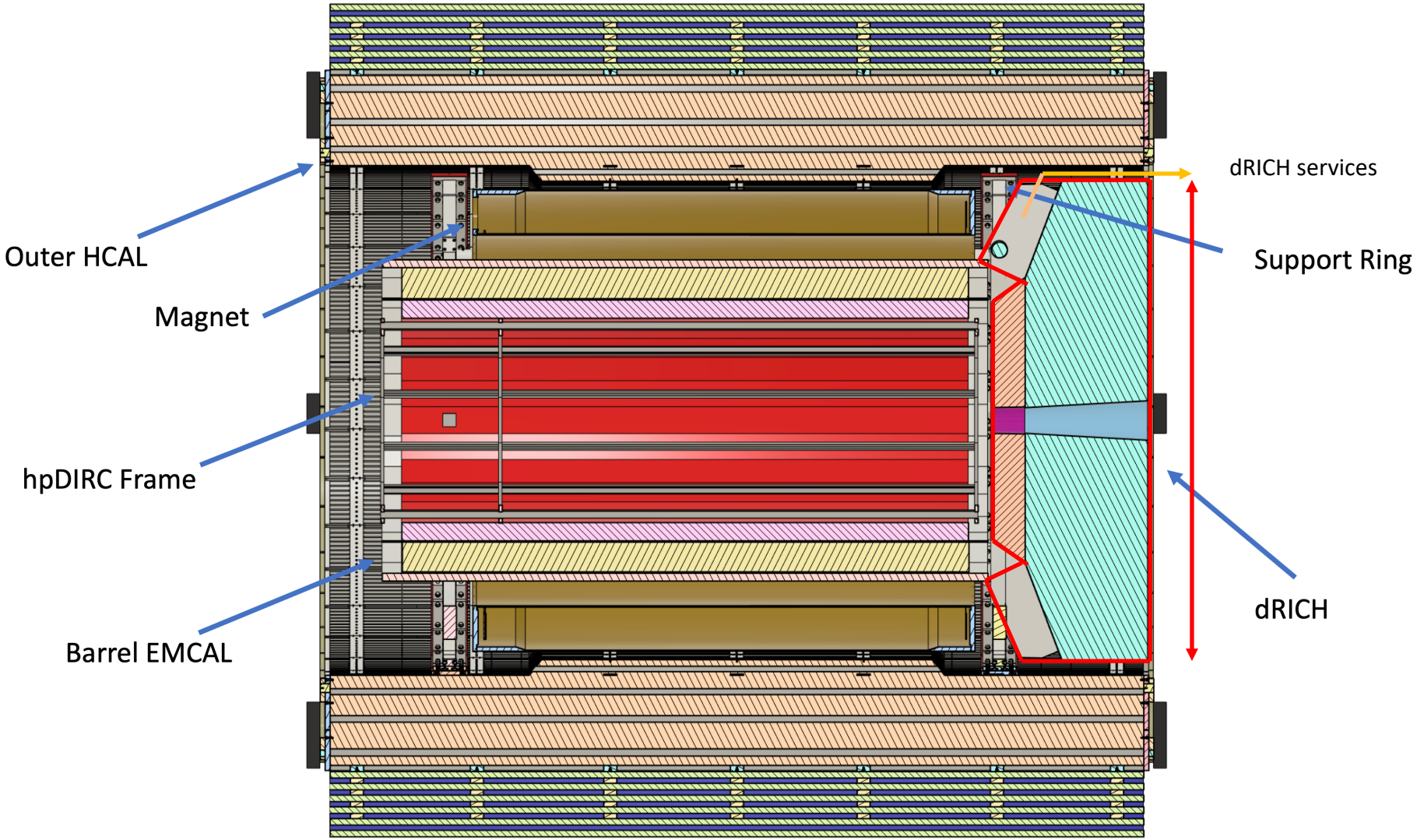
This corresponds to > 3σ separation at 50 GeV/c YR ✓





Real optimization depends on the integration constraints

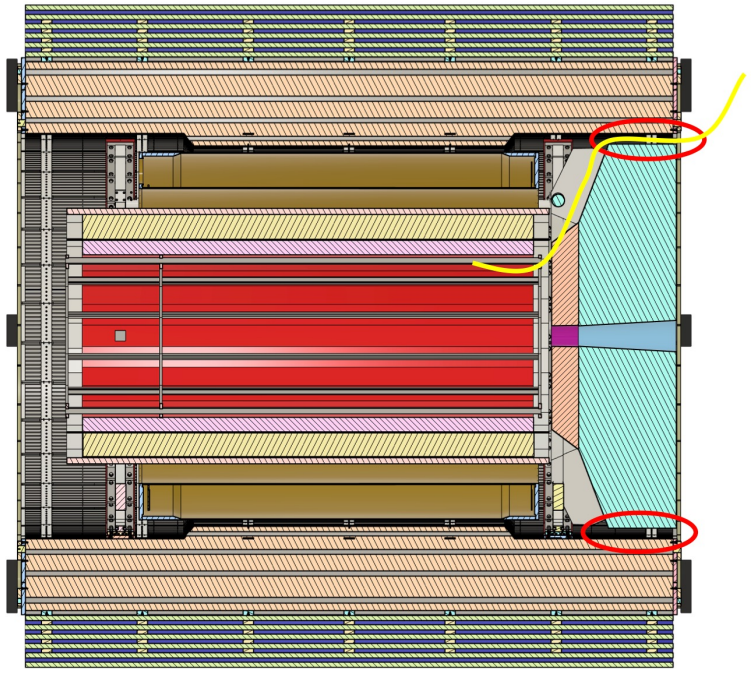
dRICH Integration

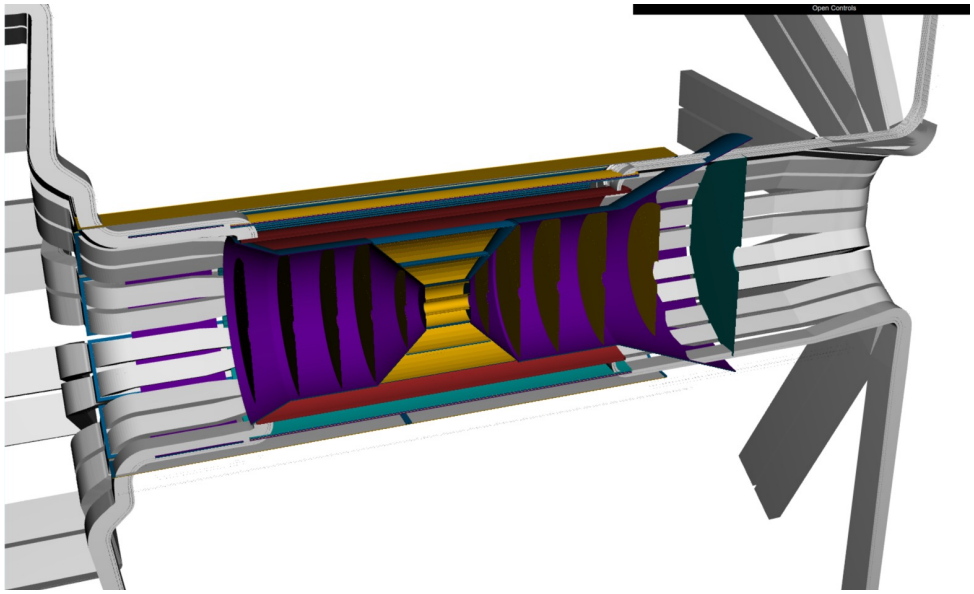


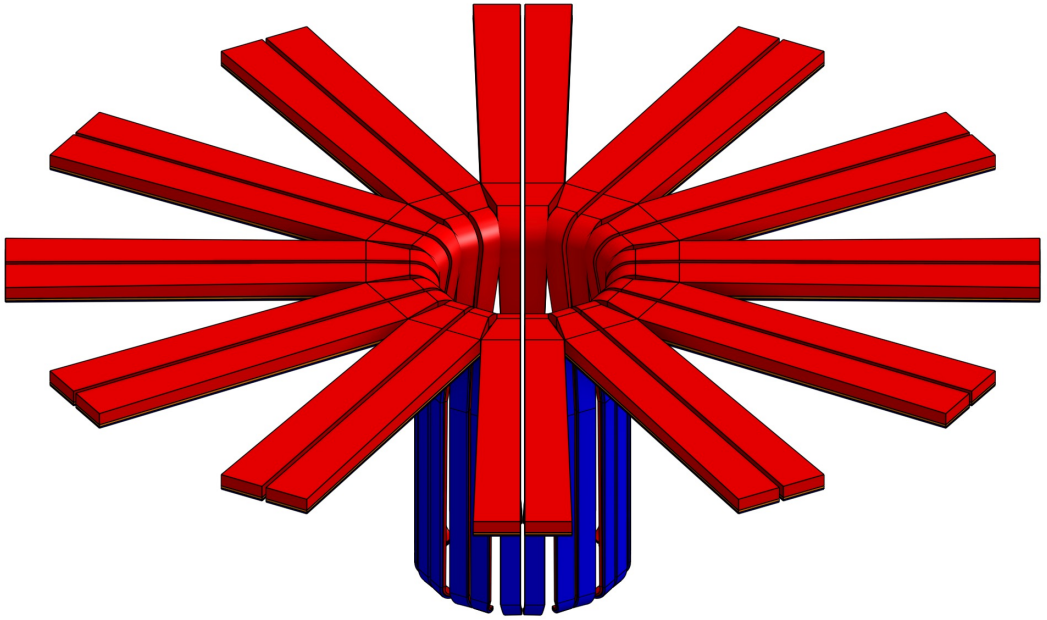
dRICH services from top of detector box and maximum radius reduction seem doable

Services

Forward services for inner detectors





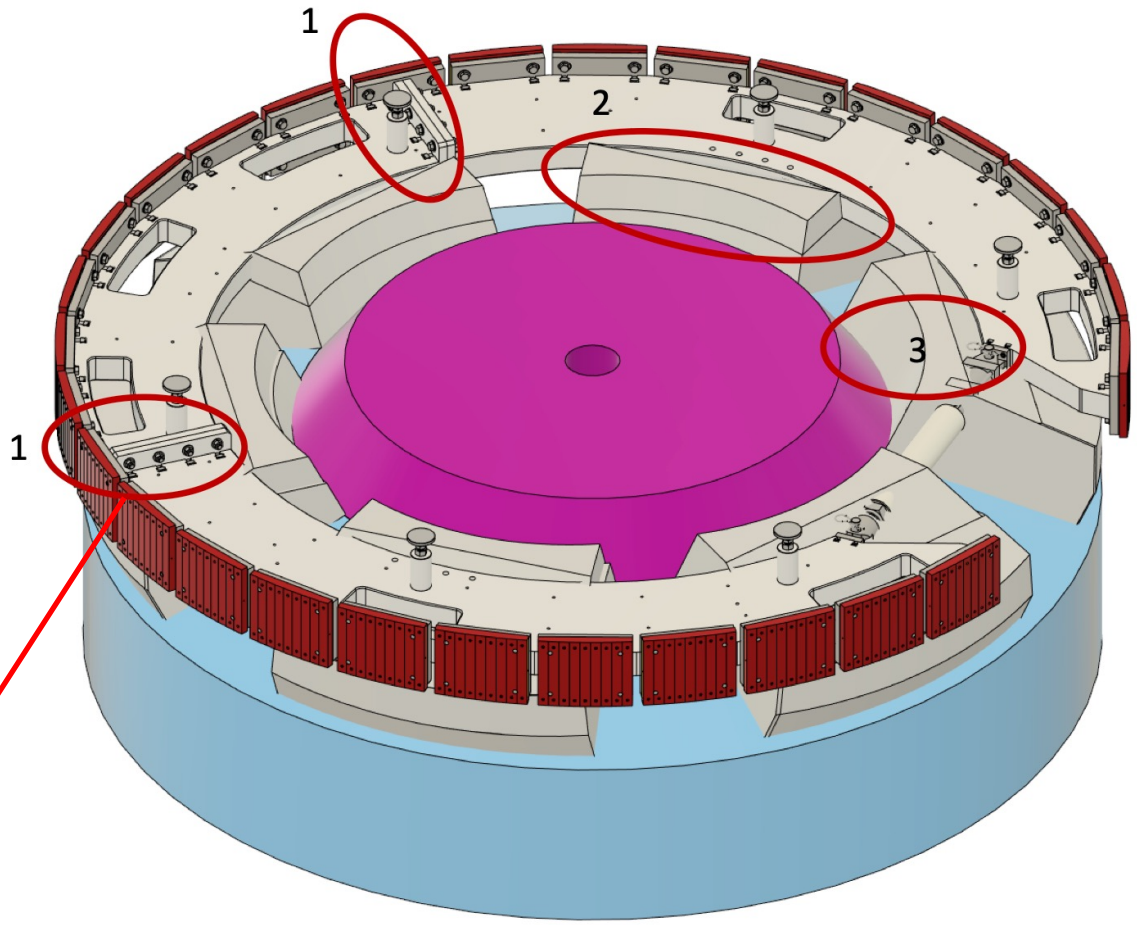


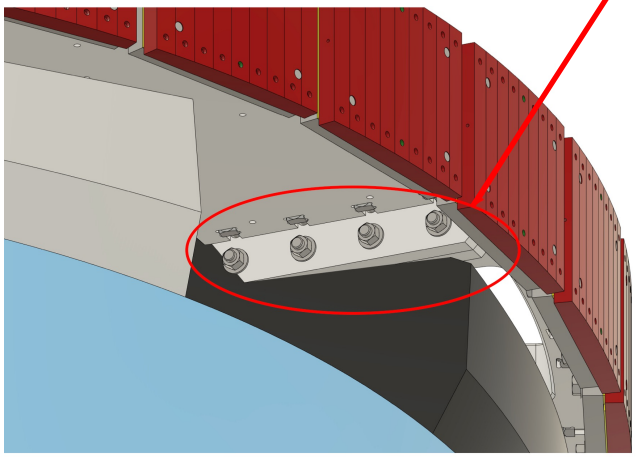
Group into 6 bundles to stay in between dRICH detector boxes ?

dRICH Interference Points

3 The actuator will not be in place at dRICH installation

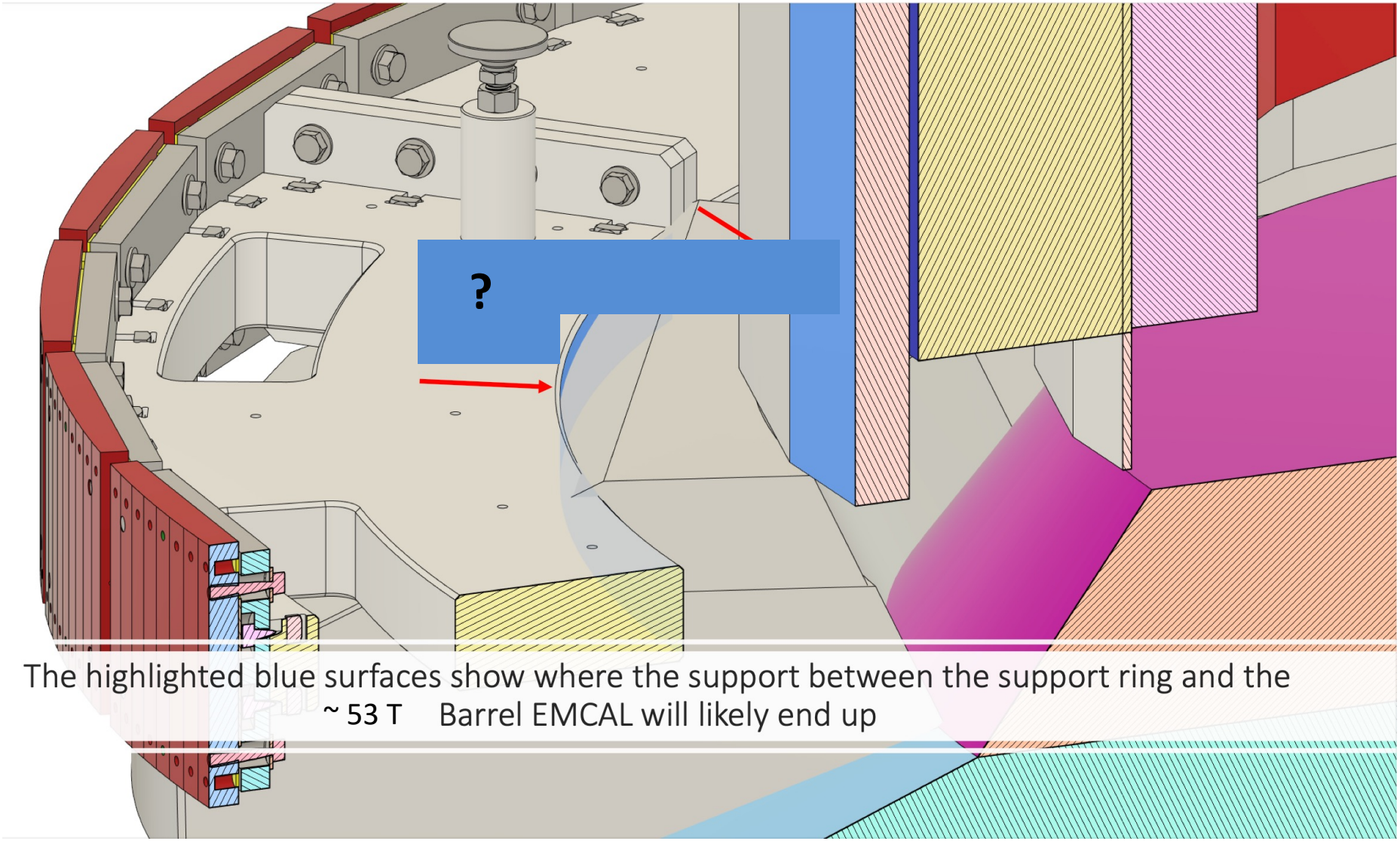
2 The inner radius of the support ring is interfering with the dRICH detector boxes





1 Where the support ring bolts together, there is a flange that protrudes into the boxes. There are two of these flanges on the support ring.

Barrel EMCAL Support

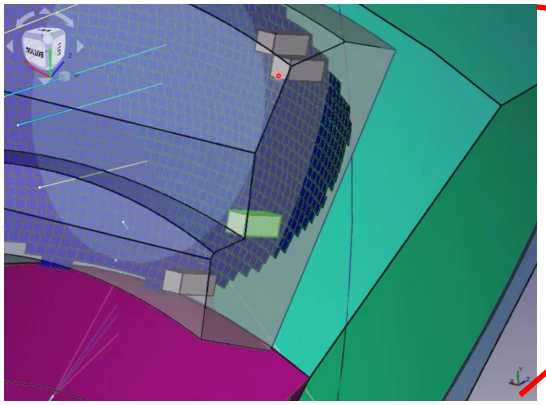


The highlighted blue surfaces show where the support between the support ring and the
~ 53 T Barrel EMCAL will likely end up

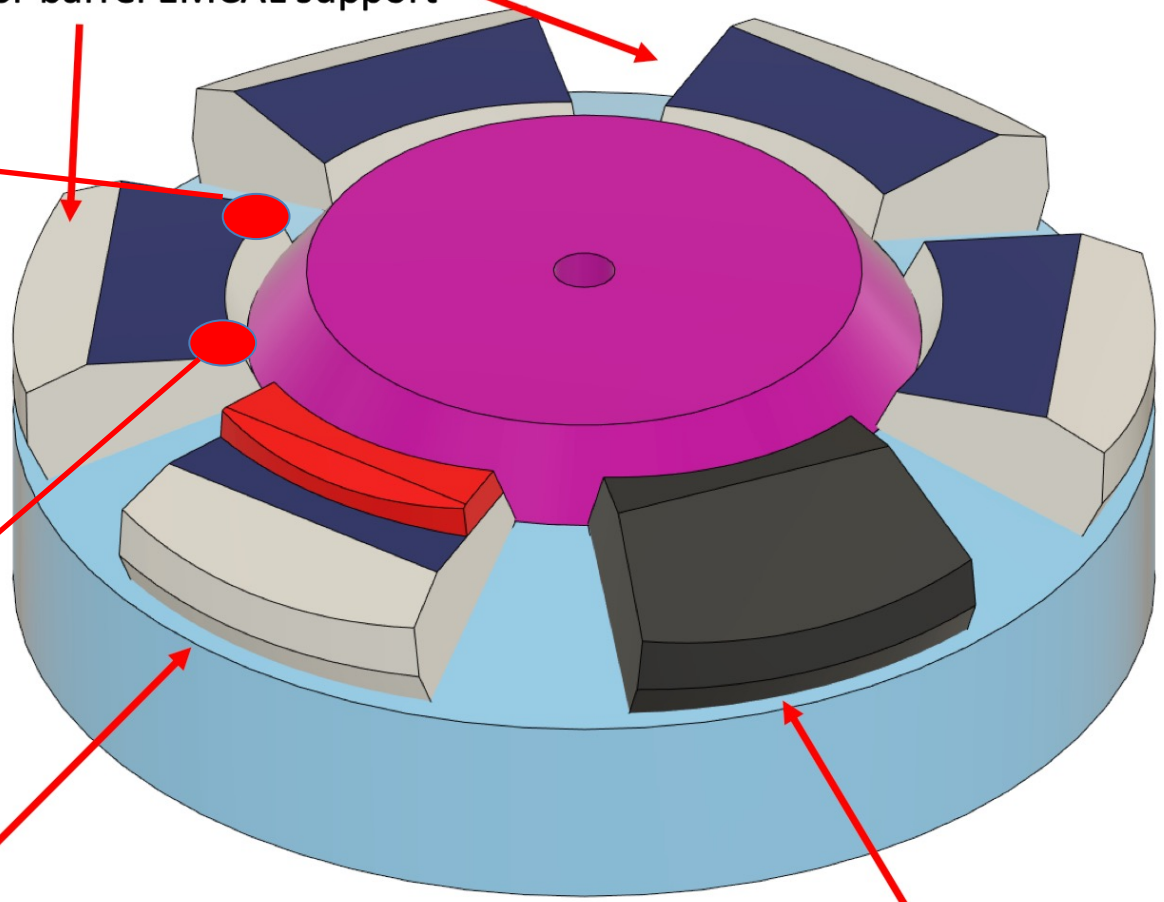
dRICH Detector Boxes

Worse case scenario:

Clearanced for barrel EMCAL support



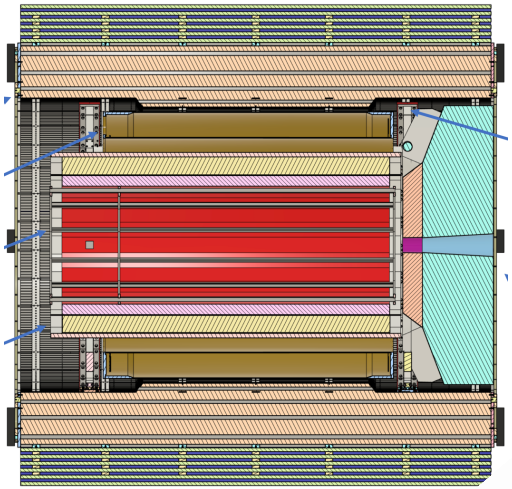
Most critical points

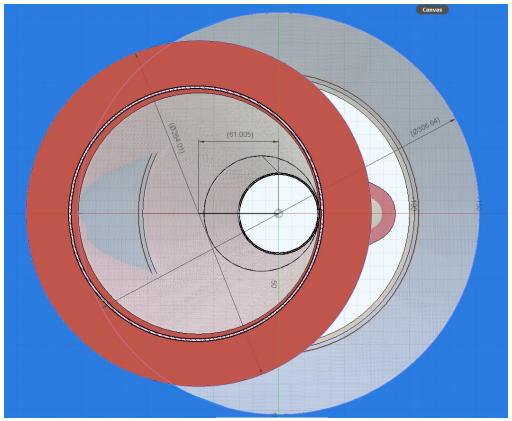


Box with support ring cut-out

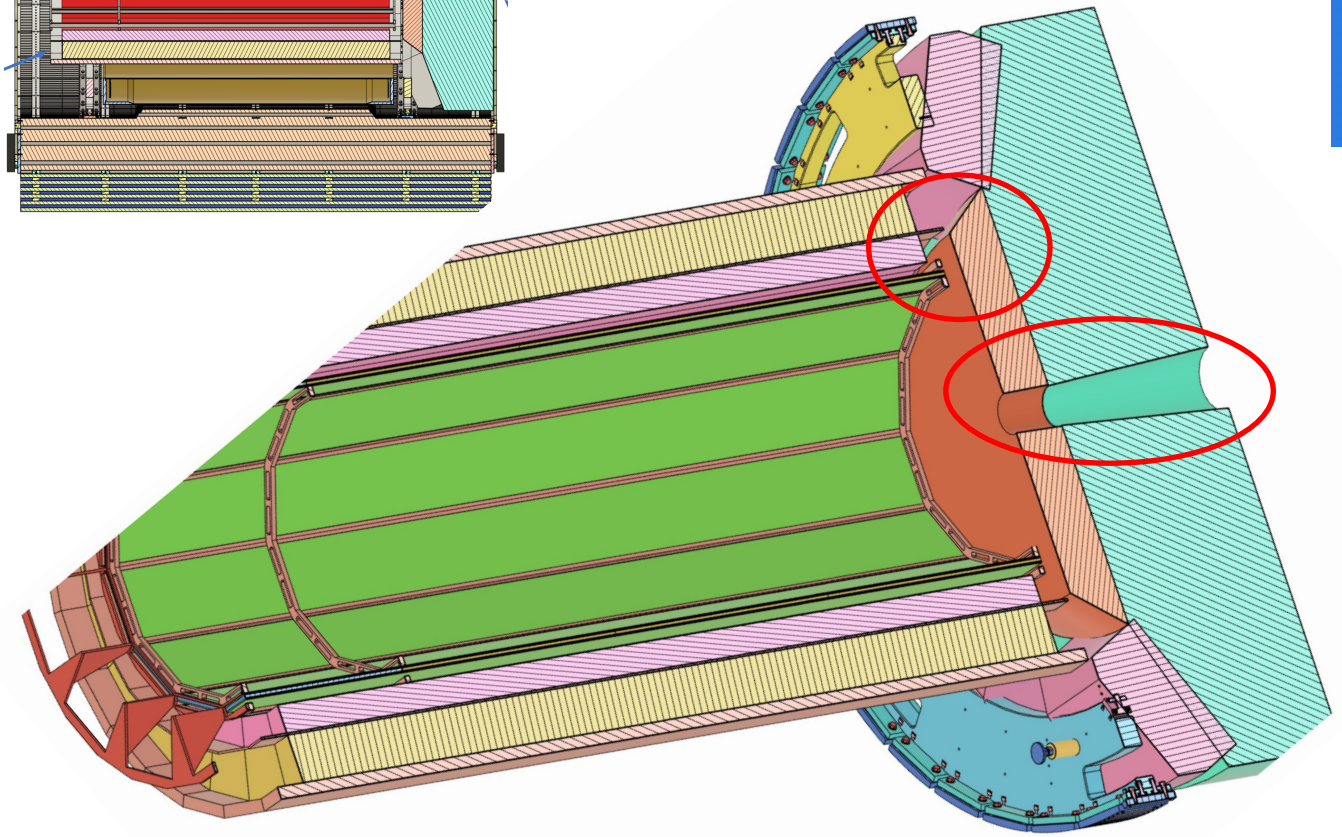
Box size from ~11April23

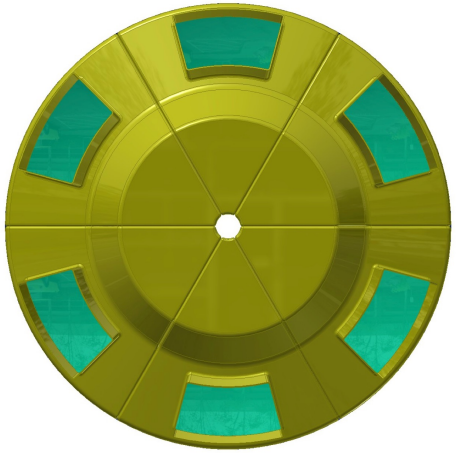
dRICH Integration





Beam pipe projection





Possible segmentation under study

DIRC and FTOF material need to be accounted for. Beam pipe impact should be minimized.

dRICH Integration

The interferences ballpark is of the order of ~10 cm

A few cm forward shift of the dRICH is an interesting idea

dRICH geometry can be accommodated at the price of performance (e.g. acceptance)

Effective exchange between DSS and Project Technical Team is essential

The recent joit dRICH – EIC Technical Team workshop is an excellent example

A public EPIC 3D model is instrumental to engage DSS technical capability

Read only mode ?