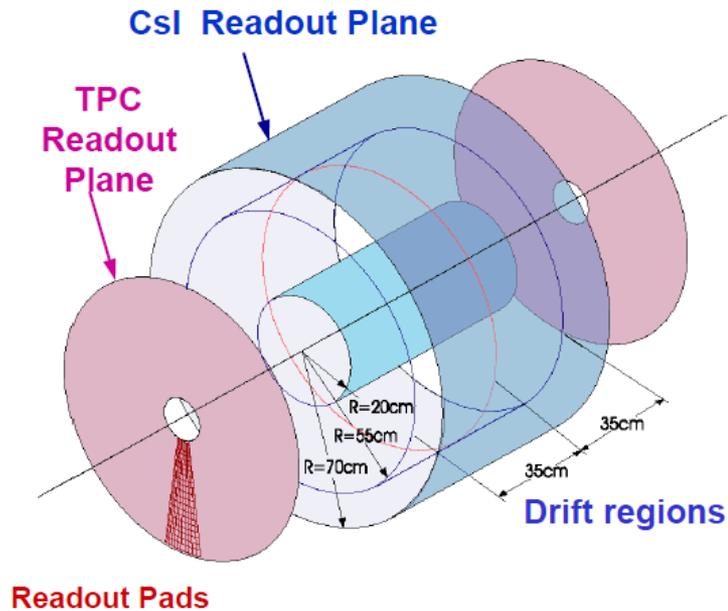


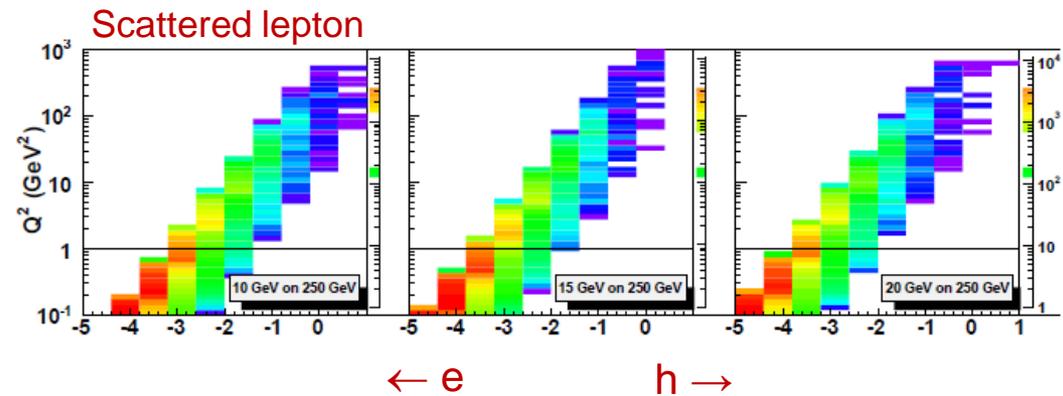
# eRD6 Homework – Question 1

The committee did not understand the physics motivation and the research proposal for the TPC/Cherenkov option.

Originally motivated by PHENIX TPC/HBD concept (circa 2001)

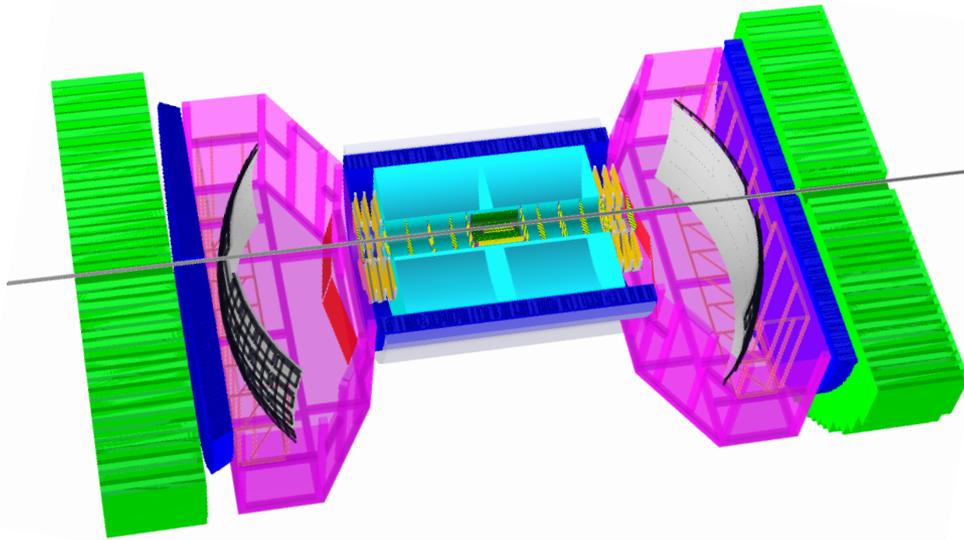


- At EIC, the idea would be to improve electron id in the central region using a threshold Cherenkov combined with the TPC.
- Most electrons are scattered at  $-\eta$  (e-going), some at central  $\eta$ , few at  $+\eta$  (h-going) - and more so with increasing e energy

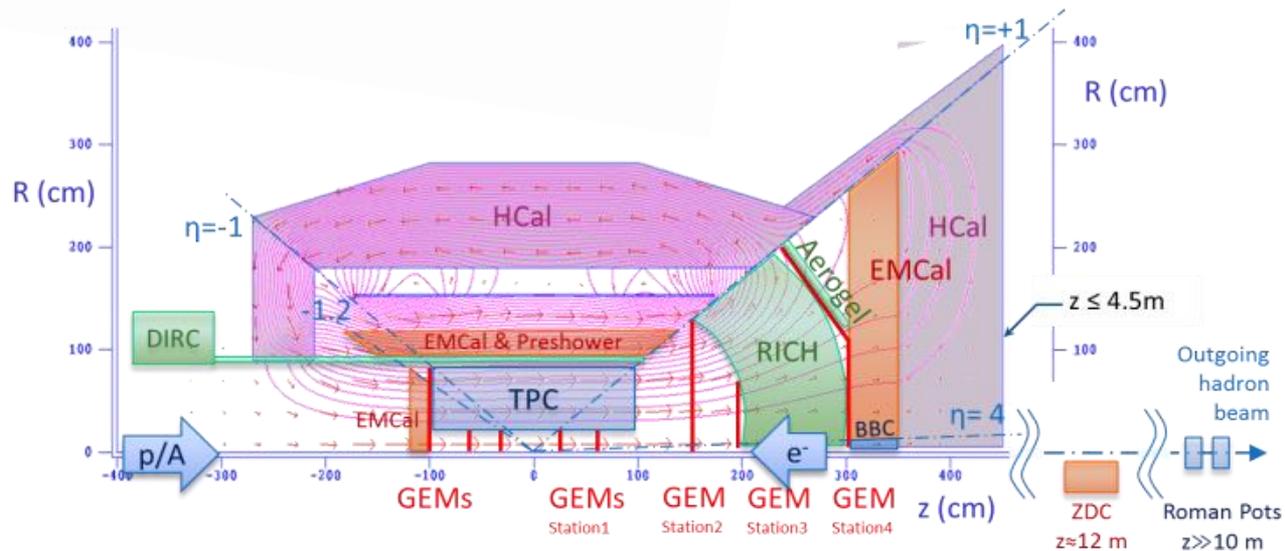


Could also act as a veto against high momentum  $k/p$  (since only  $\pi > 4$  GeV count)

# Other Applications



Could also be used to combine tracking features with a RICH at forward and backward rapidities



## eRD6 Homework – Question 2

Please educate us on how this device will be used in the physics program of the EIC and what the short and long term research plan is.

- Has not yet been incorporated into any specific detector design (ePHENIX, BeAST, JLEIC), but there are several possibilities
- Short term plan is to test the full TPC/C capabilities of the detector in a beam test at Fermilab this April
- After demonstration of proof of principle, further R&D would be curtailed until a more specific application is identified