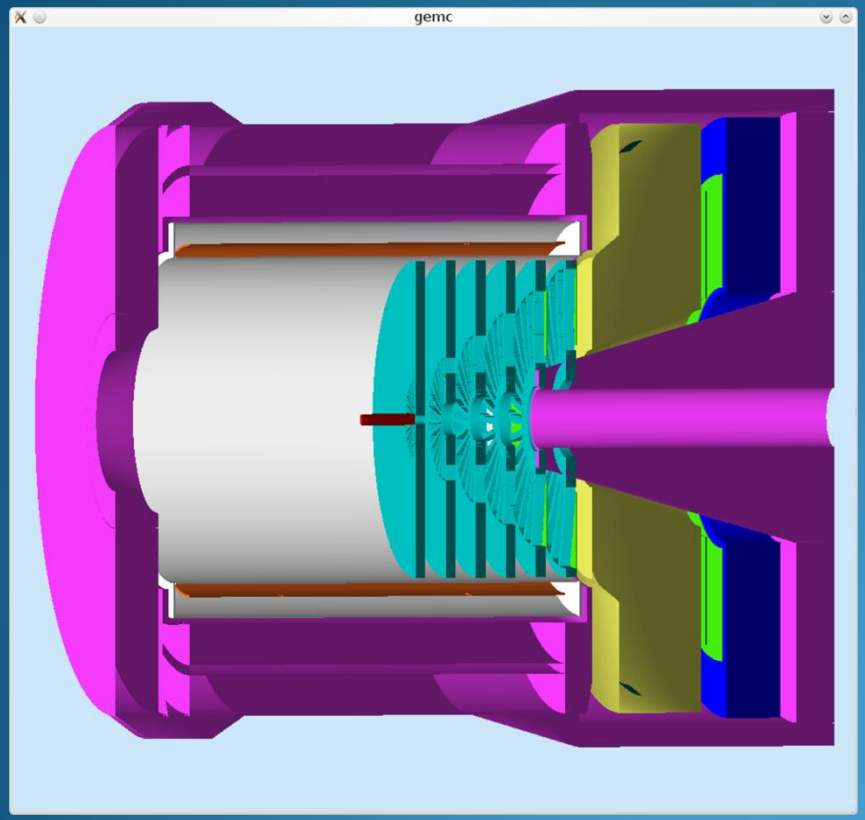
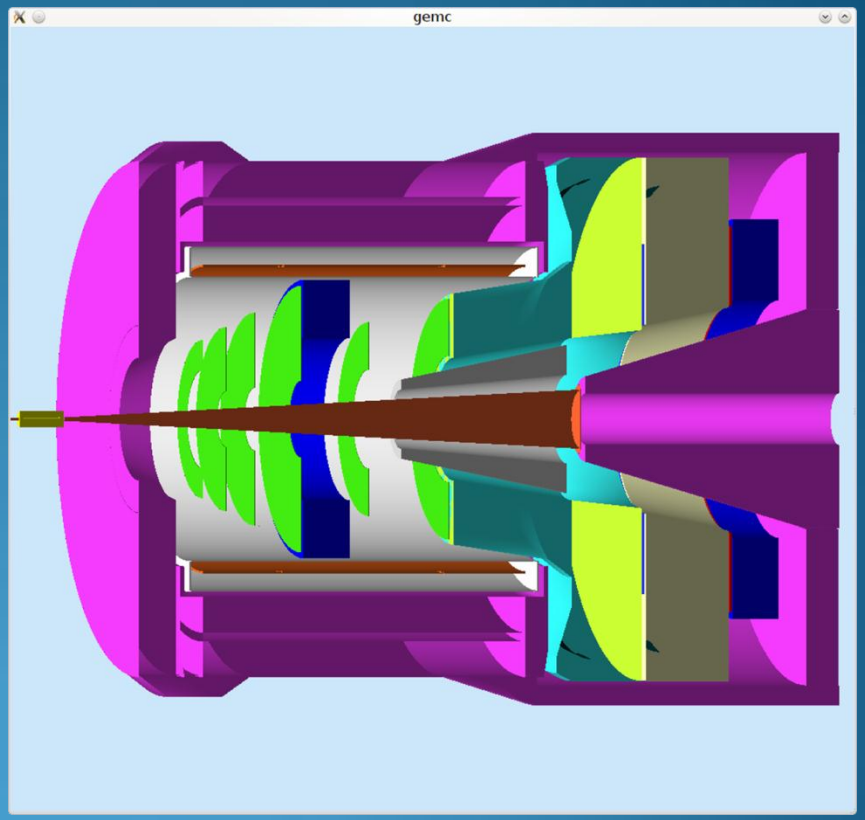
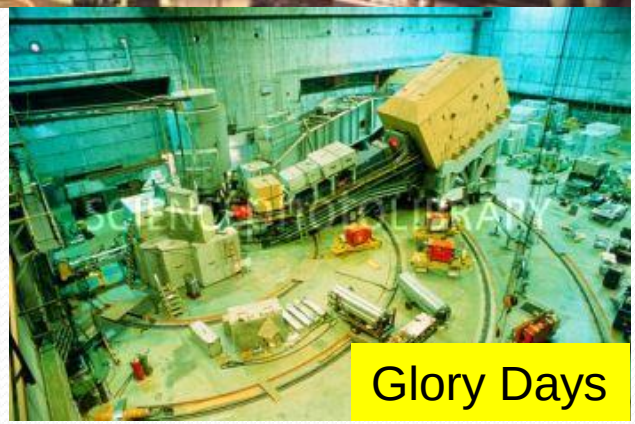
HBD -- BRIEF





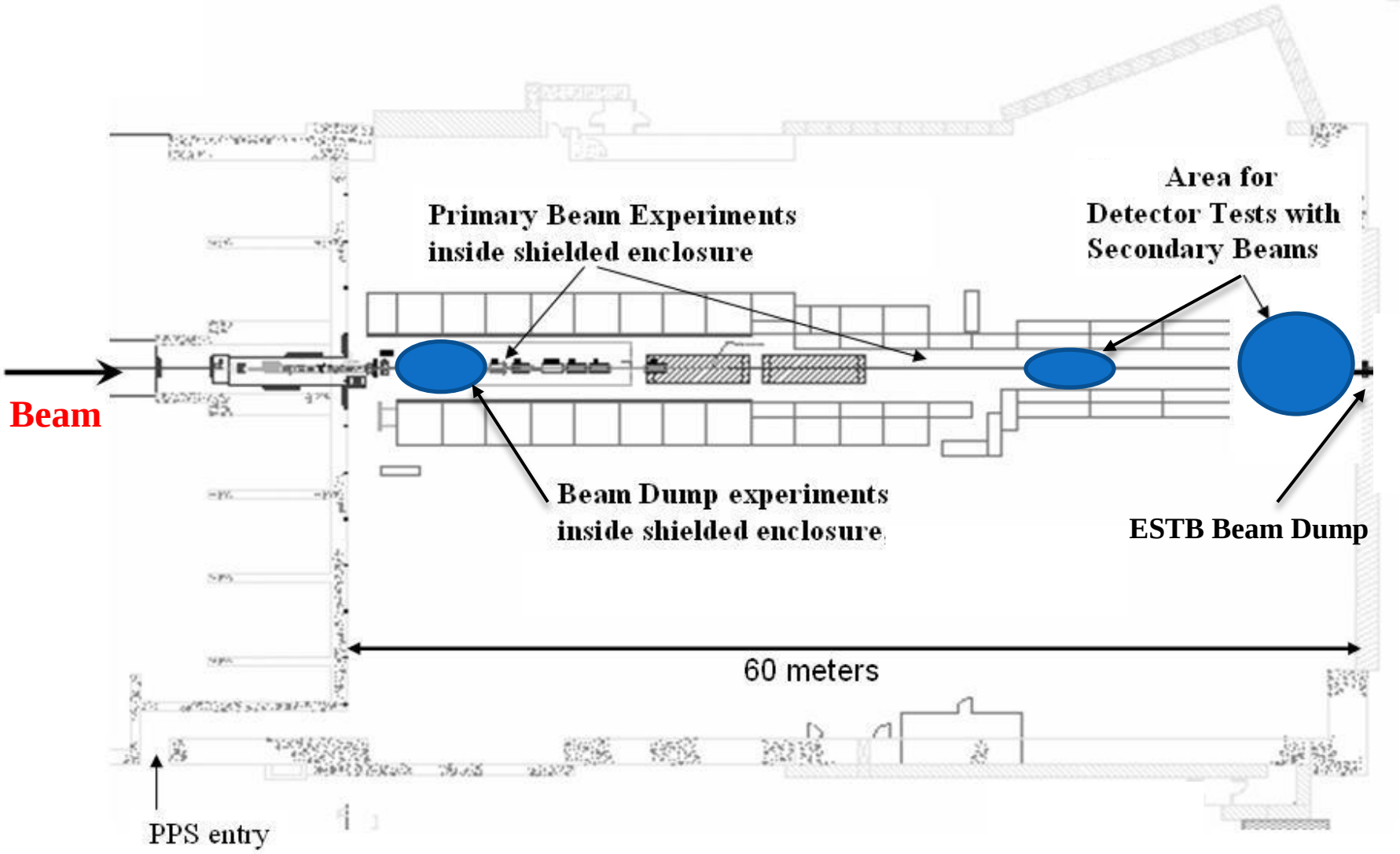
T.K. Hemmick

Preparation for Next Test Beam



- SLAC ESTB (End Station Test Beam)
  - Back ~1/3 of SLAC for light source.
    - 120 Hz
    - "moderate" beam
  - 5 Hz (minimum) pickoff → Target → ESA (~1 e/pulse)
- We are 1st outside users--first beam arrives Tuesday(?)
- Our run = May 1st or shortly thereafter.

ESA Experimental Area

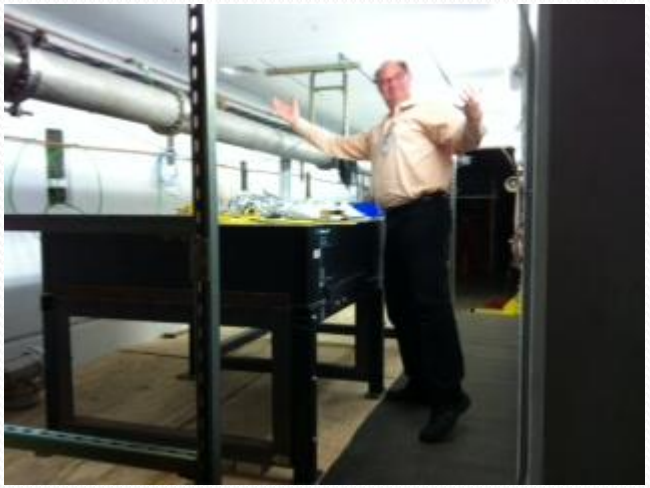


Today…Junk Pile (useful for test beam)

Flexible

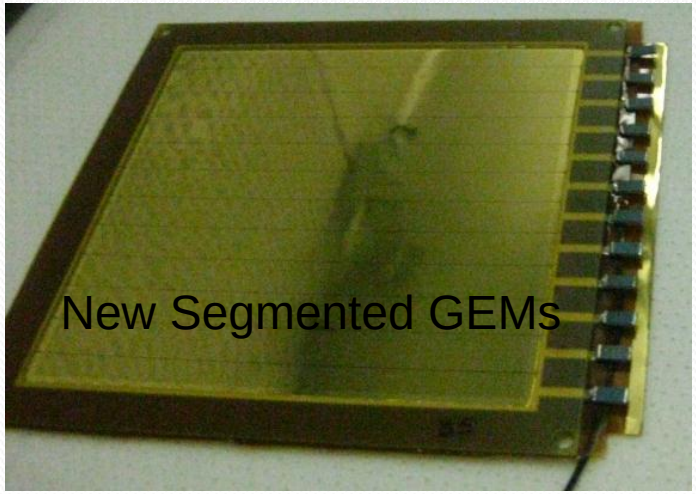
Much old stuff to borrow.

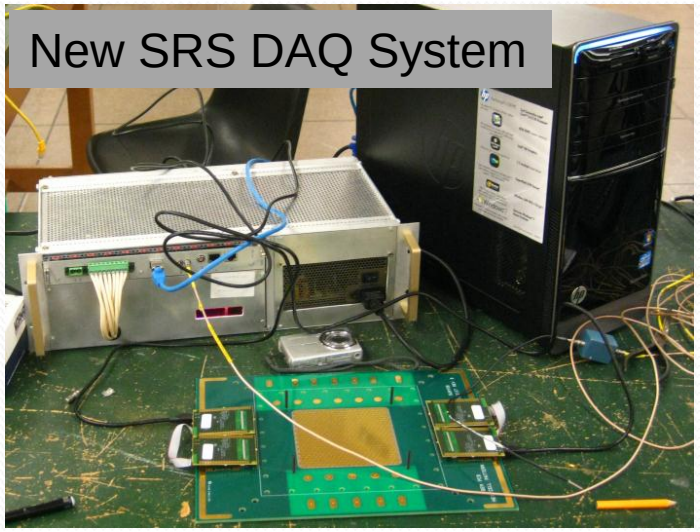
Technical staff



Can I sell you a used magnet?

We're ready…

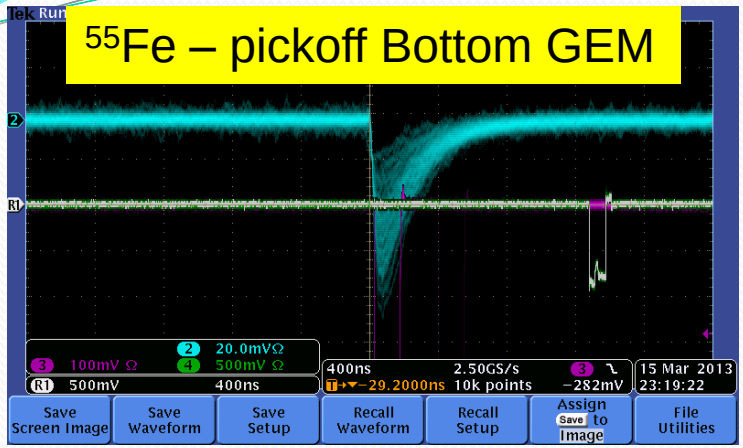


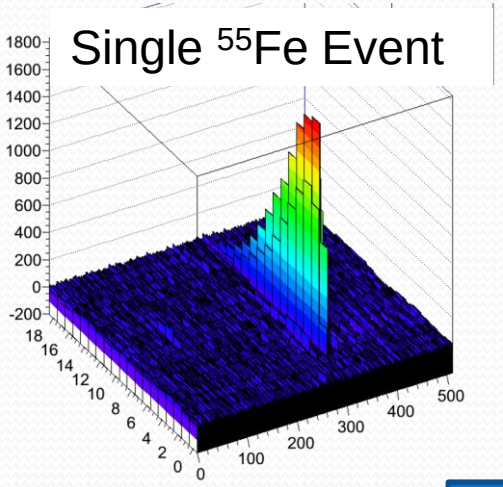


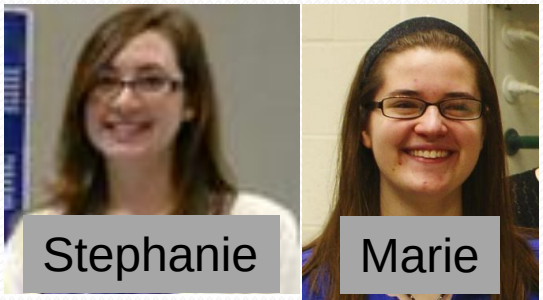
Spark Detection

- GEM stack assembled & running w/o CsI.
- Evaporate mid→late April (effort & $$$ to keep fresh)

Summary – Our Baby is Ready!





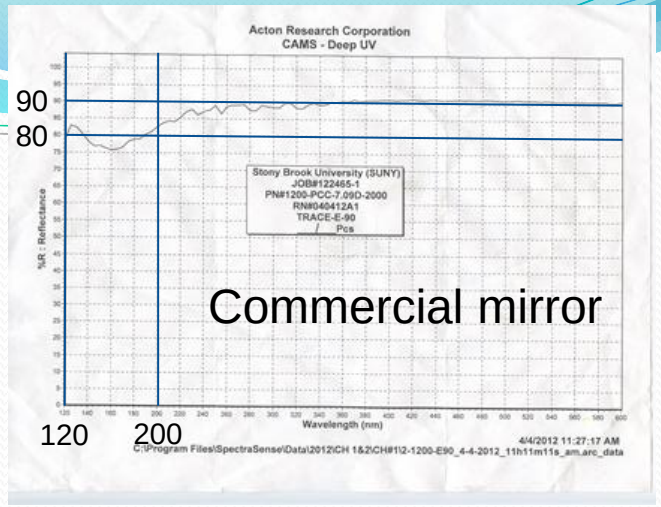


To PhD Program

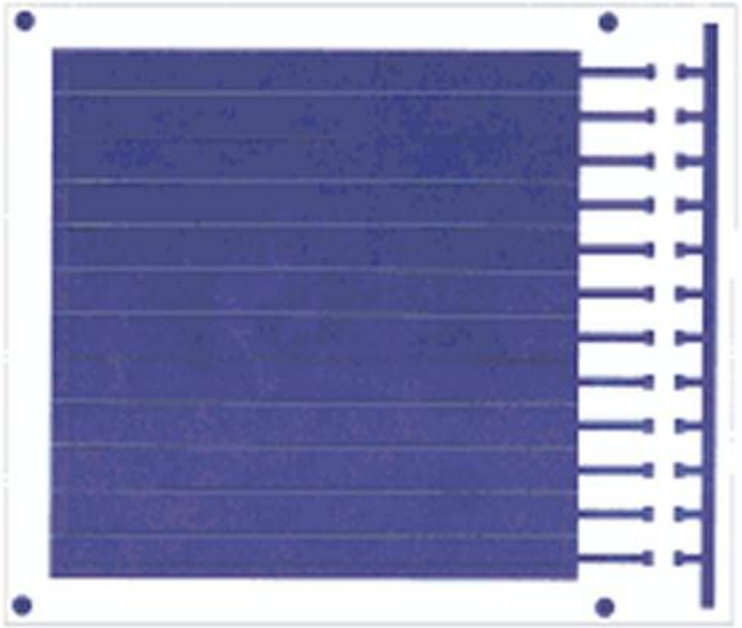
Backups

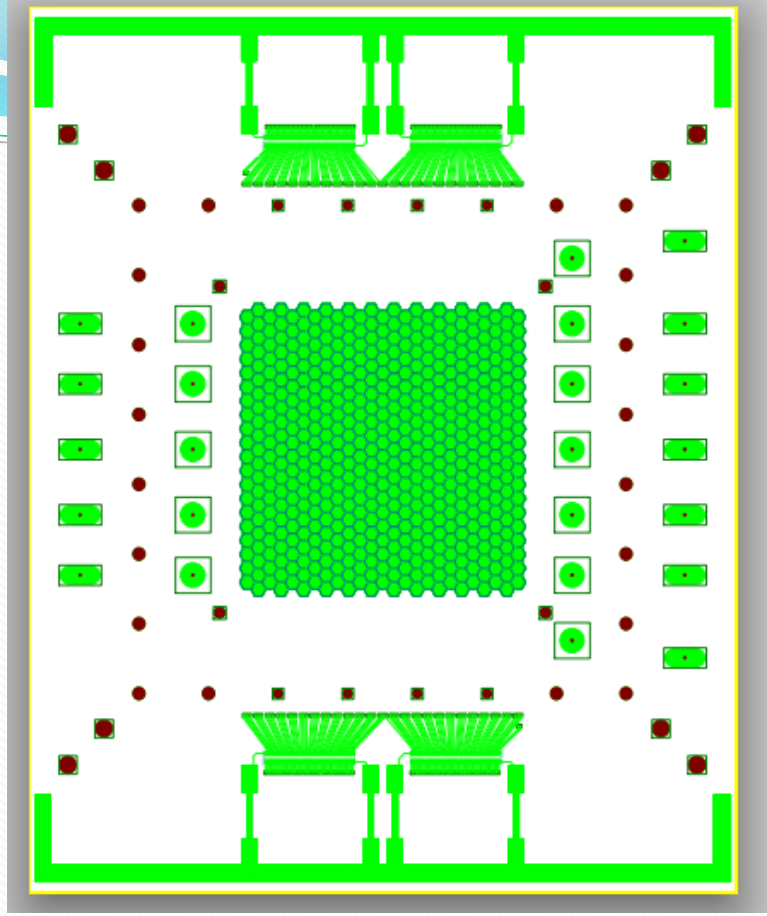
Mirror Developments

- Cherenkov photon yield primarily at small λ.
- Deep UV mirrors use 250 A° MgF_2 overcoat to act as dielectric mirror.
- Plans:
  - Year 1: Develop in-house manufacture of small mirrors.
  - Year 2: Scale up to use Big Mac
- First in-house mirror made!
- Reflectivity tests pending at BNL.



Changes for SLAC

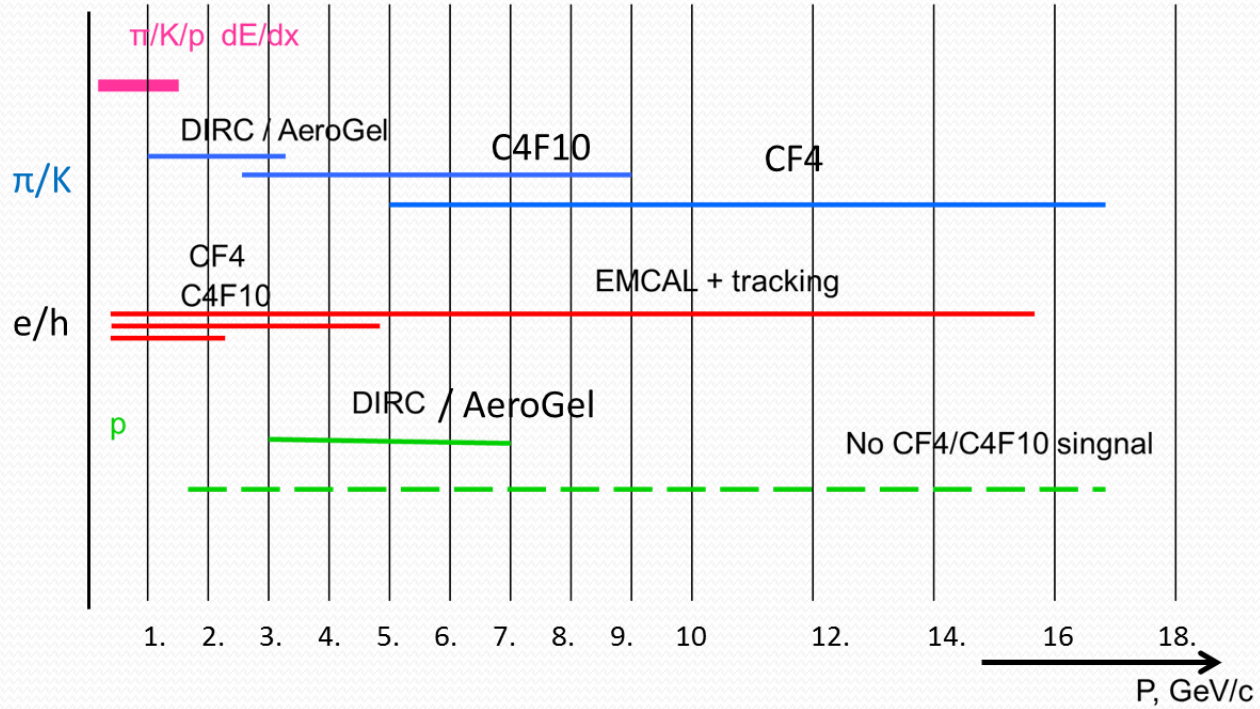




- New GEM foils…multiple strips like PHENIX.
- Second pad plane…hexagons to see rings.
- New trip detection system:
  - Capacitive coupling off resistor chain.
  - Integrated with PHENIX HBD HV relays.

Forward RICH

Electron and Hadron PID



- RICH particle ID involves a limited dynamic range of momenta set by gas index of refraction.
- The highest momenta rely on the lowest n.
- Our R&D targets the highest momenta with a CsI photo-cathode RICH.
- Major Issue: Reflectivity of mirrors deep in the UV.