pfRICH prototyping software / computing tasks

- GEANT Monte-Carlo
  - Choice of the mirror geometry (now) -> done (Chandra)?
  - Modeling in various sensor geometries (spacing, etc) matching the Fermilab beam test data
    -> do we want it standalone or in dd4hep?
- Data Acquisition & Co -> AK
  - Linux driver for RCDAQ
  - Raw data decoding
- HGCROC3 calibration
  - Thresholds, latencies, delays, …
  - Interface to the DAQ
  - Interface to the offline codes
- Data crunching computing configuration / maintenance
  - DAQ PC itself (?), an FTBF Linux PC in the Control room (?), RACF (?), our own custom PC (?)

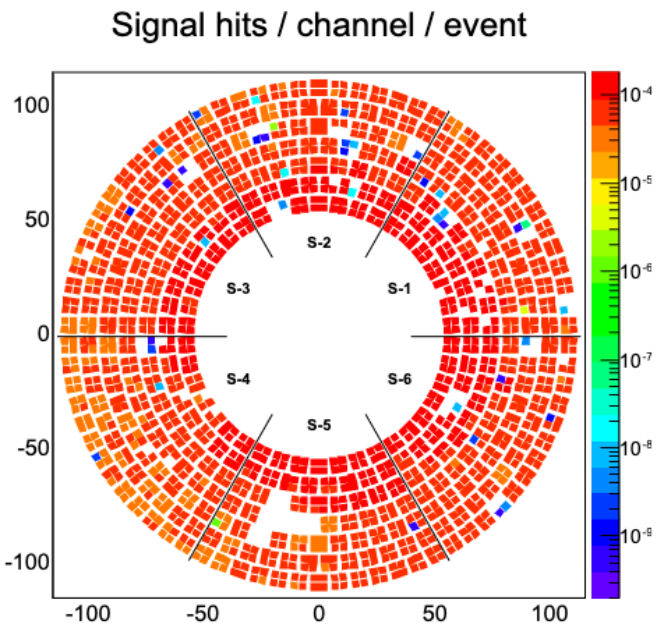
pfRICH prototyping software / computing tasks

- Online monitoring
  - Event display per se (visualization of the sensor plane + track projection)
  - HRPPD hit maps (accumulated and event-wise) -> recycle codes by Sanghwa
  - HRPPD gain maps
  - GEM tracker information -> resurrect codes by Barak
  - Interface to the beam line Cherenkov counter
  - Timing plots

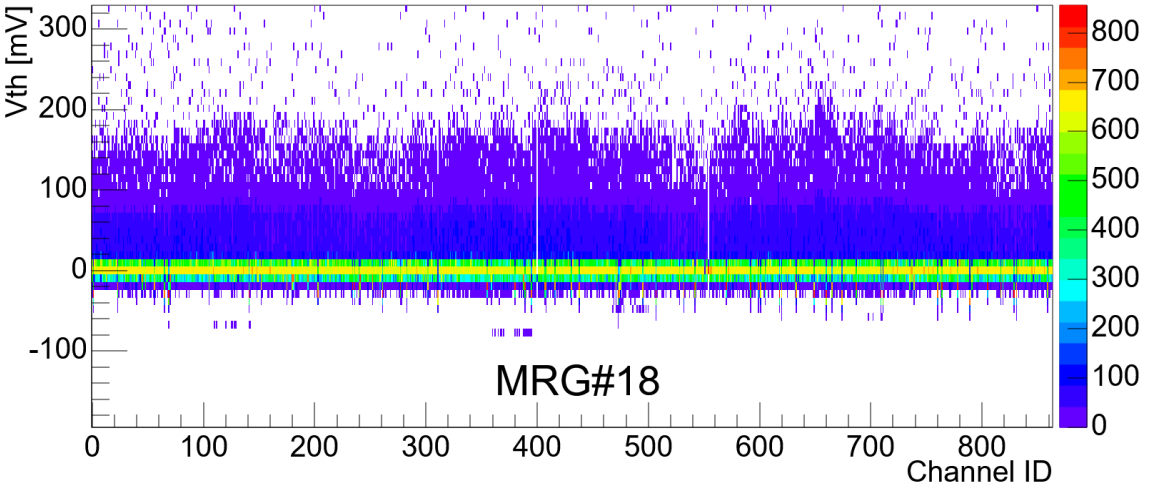
- Offline reconstruction
  - Connection to IRT
  - HRPPD PDE tuning based on real data, aerogel transmission data tuning, etc
  - Component alignment (aerogel, mirrors, HRPPDs)
  - [Data analysis between June 2024 and FDR in Fall 2024]
  - [Shaping results up for a paper?]
- Online reconstruction (at Fermilab)
  - What do we actually want to see online, at a minimum?

Online monitoring plot examples

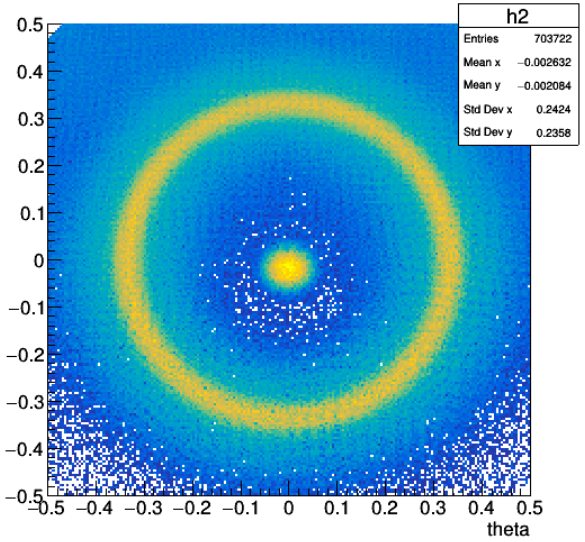
Plots from Samo's Belle II slides

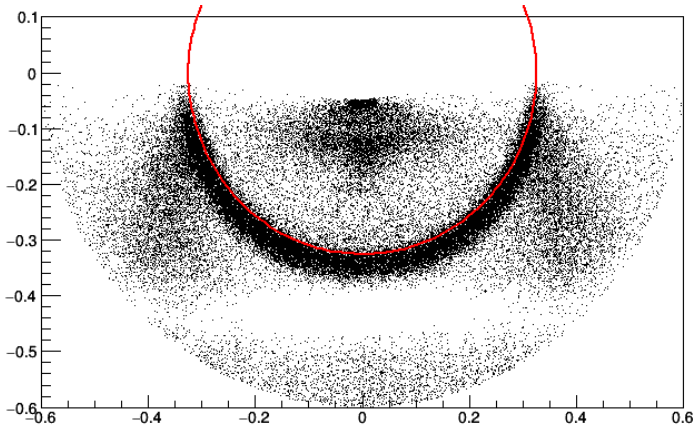


Hit map (will be 5*1024 pads in our case)

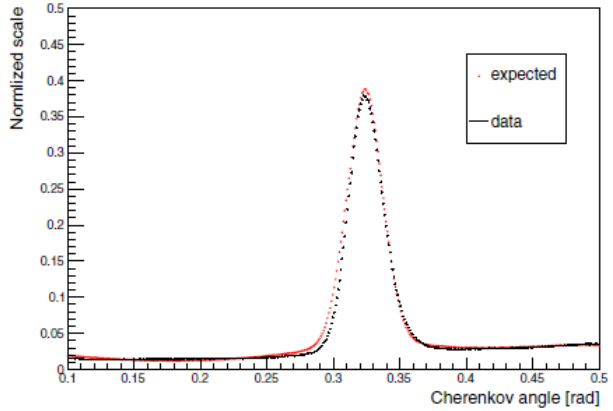


Pedestal noise (can be similar)





Hits + a nominal ring position



Ideally want to see a π/K picture