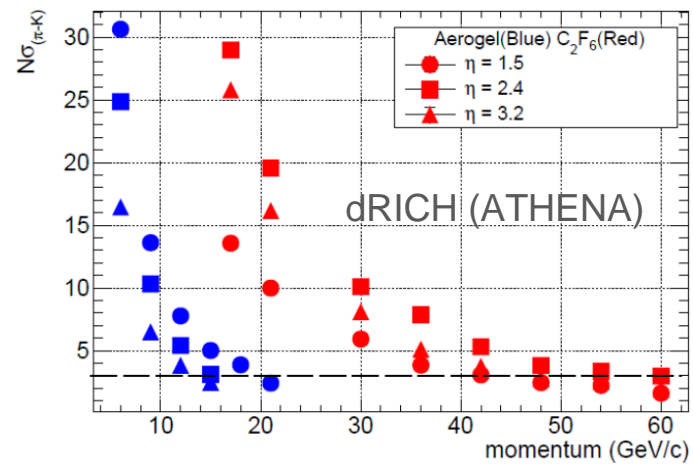
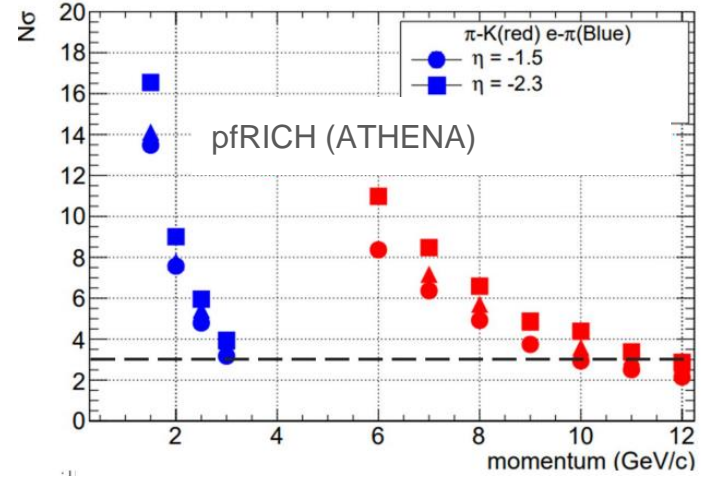
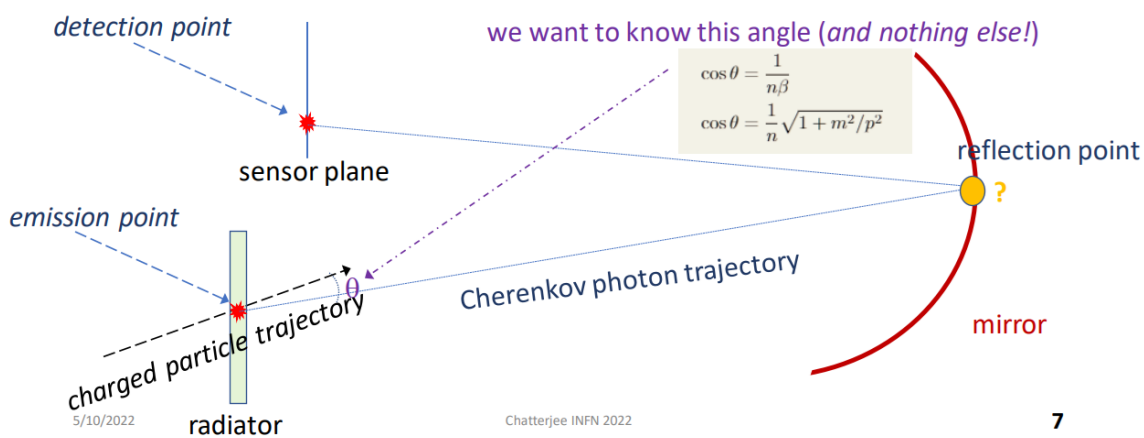


Status of the RICH reconstruction algorithm

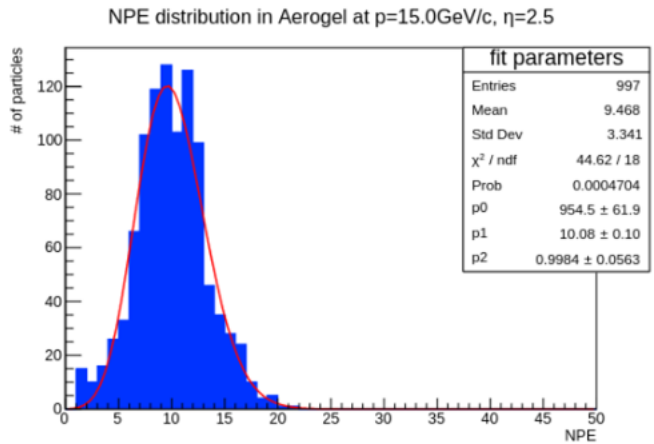
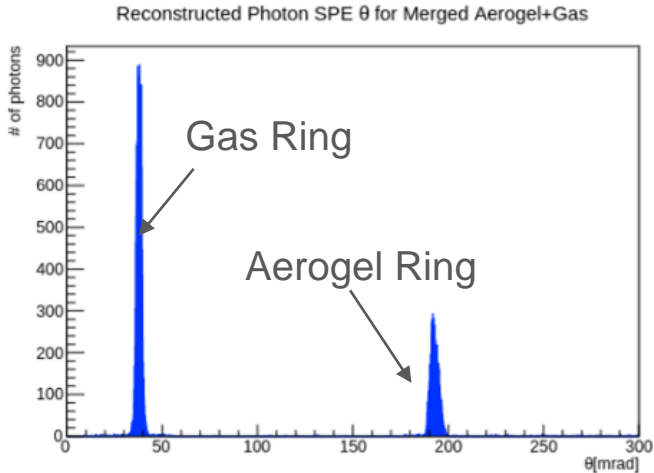
Synergy between pfRICH and dRICH

- ❑ The RICH reconstruction software was started at the ATHENA times.
- ❑ The reconstruction is based on Inverse Ray Tracing (IRT).
- ❑ A baseline reconstruction algorithm.
- ❑ First version evaluate separation power for single particles and few more analysis. Mainly focused to detector optimization.



Situation with ePIC (dRICH)

- ❑ ATHENA IRT is ported to EICRECON (IRT-v1) and is used by dRICH.
- ❑ IRT-v1 works and all cross-checks have been made.
- ❑ IRT-v1 can handle SiPM noise with some tricks.
- ❑ IRT-v1 can even handle multi particle events given they are substantially far away.



IRTV-2

- ❑ A second version of IRT has been developed during backward RICH review.
- ❑ A sophisticated chi-square based PID algorithm is used to handle much more complicated event topology.
- ❑ Tested thoroughly in a Standalone code.
- ❑ Kolja has made an effort to import the stand-alone code to EICRecon. Does not work out-of-the box. Requires, testing and step-by-step debugging.
- ❑ Alexander and Chandra plan to work on it. Will be used in both RICHes.

Standalone code plots:

