- IRT functionality is restored in a standalone GEANT4 code

- Under the following basic assumptions:

  - 40cm long expansion volume

  - 80% HRPPD geometric efficiency (tight tiling, but *no flat funneling mirrors*)

  - HRPPD PDE can mimic SiPM one used for ATHENA, but *peaks at 30%* rather than 45%

  - *A single layer 3cm* thick aerogel with n ~ 1.045 – 1.050

  - 70% safety factor

  - Aerogel absorption & Rayleigh parameterizations taken from CLAS12 data (*Russian producer*)

- ... one can reach $<n_{pe}>$ ~ 9..10 and Cherenkov angle resolution ~ 2.2 mrad ...
- ... which meets the YR requirement of 3σ π/K separation at 7 GeV/c (gap ~7.5mrad)

- We may therefore want to stick to such a simple configuration as a *baseline*

- In case anything of the below list happens:
  - Tracker requests some space back (and we end up with <40cm expansion volume)
  - Incom delivers peak PDE well below 30% *[in the future]*
  - Collaboration realizes that 3σ π/K as defined everywhere in the specs is in fact ~1.5σ
  - Collaboration decides that it needs higher momentum reach (or re-evaluates the YR text) anyway

- … we consider *more sophisticated extensions*
  - Dual aerogel configuration
  - Flat funneling mirrors in the acceptance
  - Whatever else fancy we can come up with between now and ~Dec,1