

dRICH simulations are running within ePIC framework

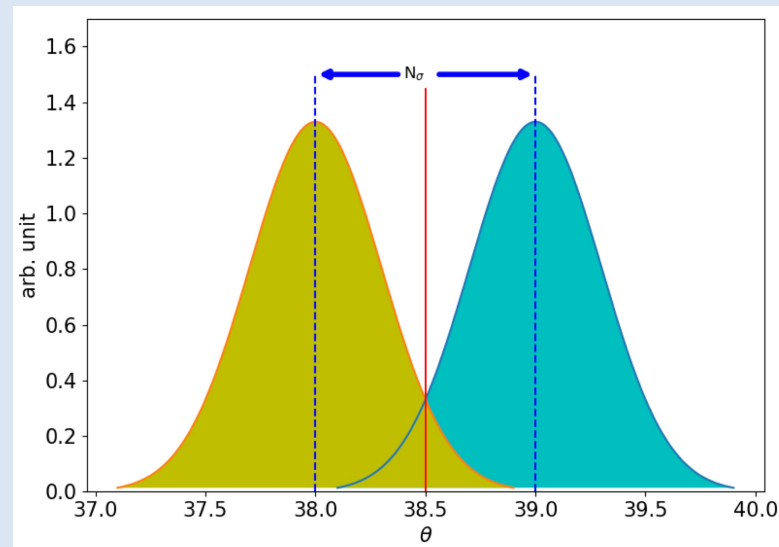
Generation of LUTs is therefore time consuming

Present LUTs are templates

- Nominal aerogel (not yet optimized)
- Nominal dRICH geometry
- No noise (expected negligible at beginning of ePIC and for gas)
- Single particles
- Only 3 eta bins
- Averaged on phi (azimuth)
- Separated radiators
- One file for e/π and one for $\pi/k/p$
- No real PID

LUTs will be refined while the full ePIC simulation/analysis chain is commissioned

Using Delphes to create LUTs (thank to Brian)

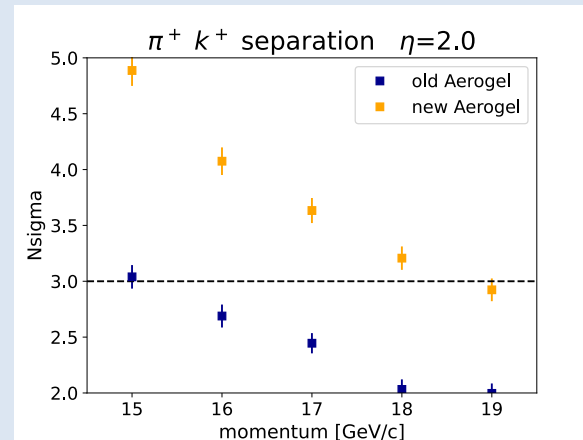
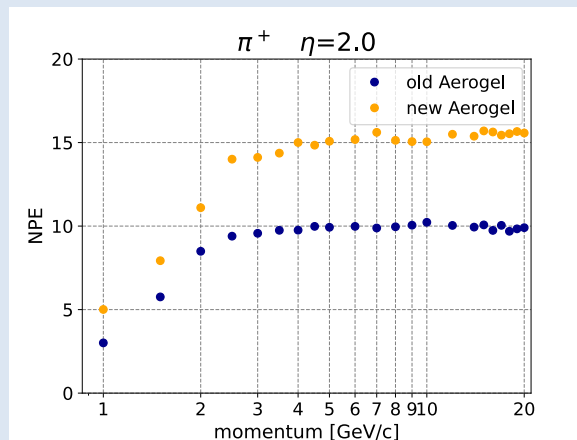


From ePIC simulations: refractive index
sigma values

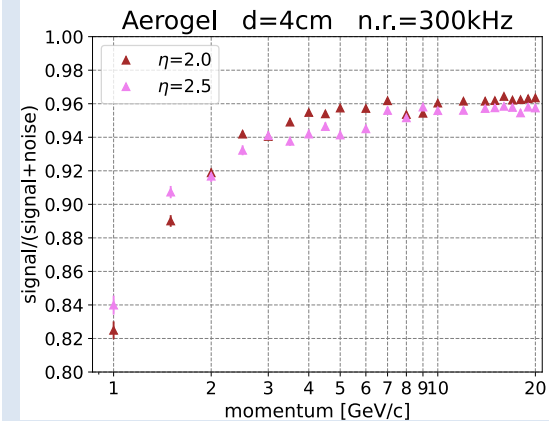
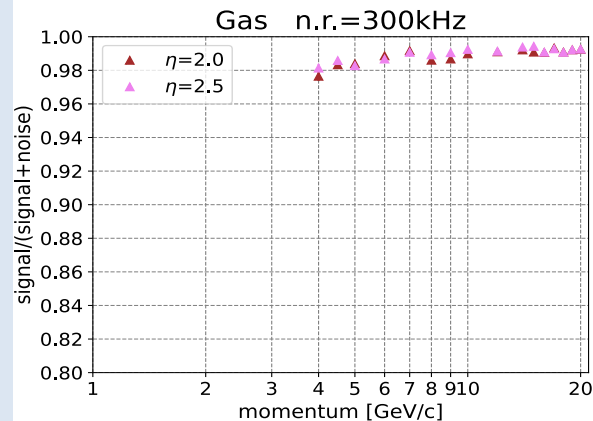
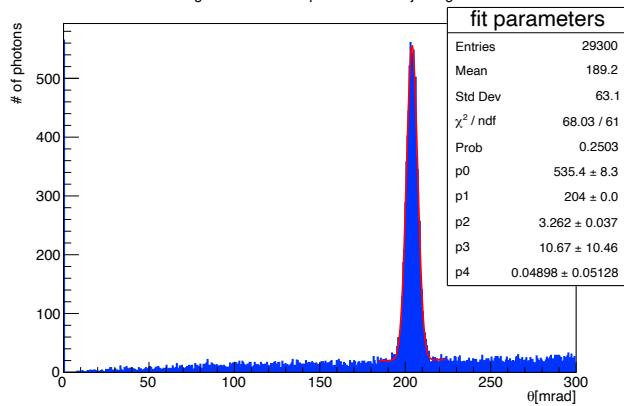
Delphes: separation at mid-point
efficiency & mis-ID probabilities

Optimization study ongoing
for aerogel refractive index

Study of “worse case” DCR
background impact on resolution



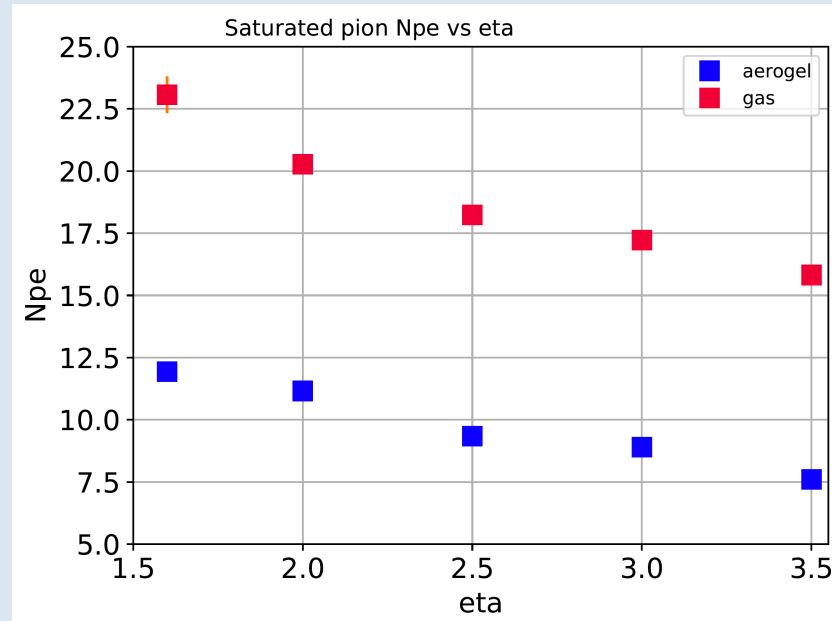
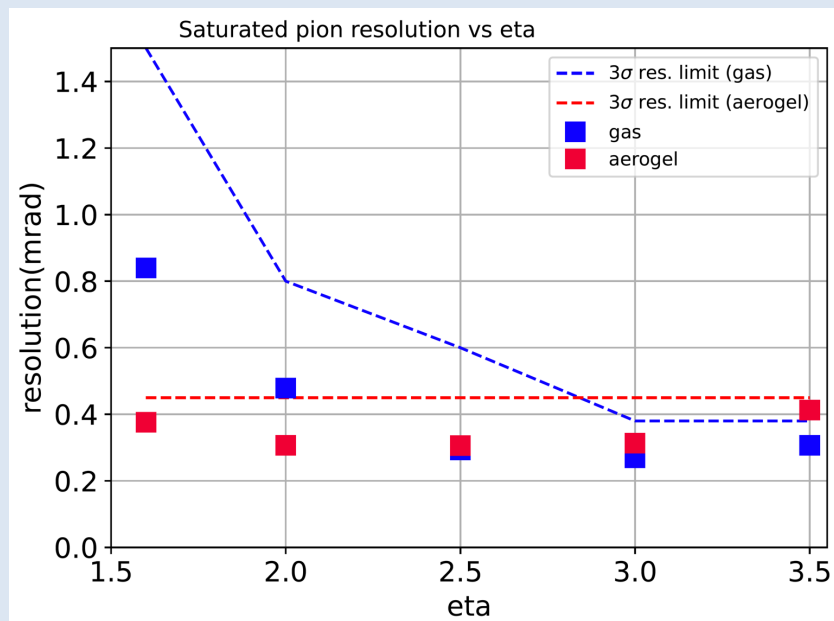
Cherenkov Angle distribution at $p=01.5\text{GeV}/c$ injecting n.r.=300kHz

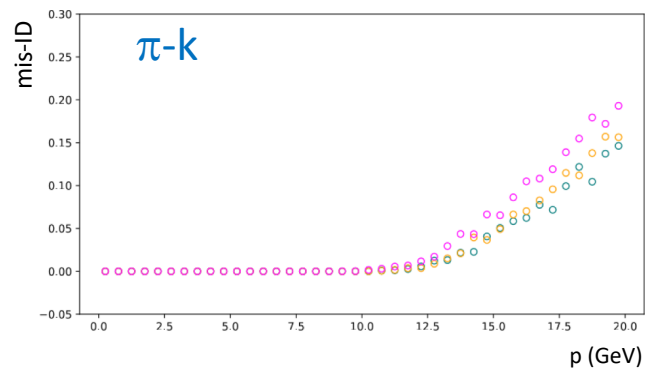
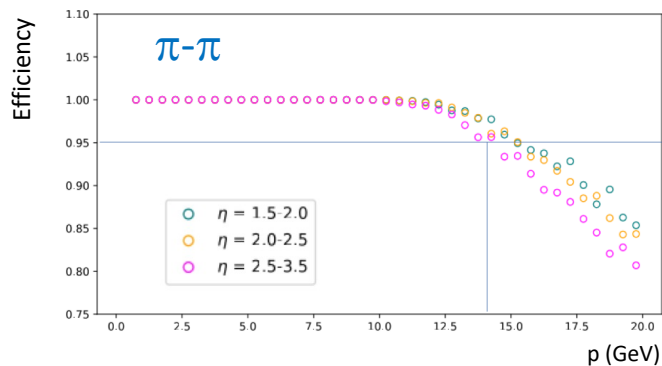
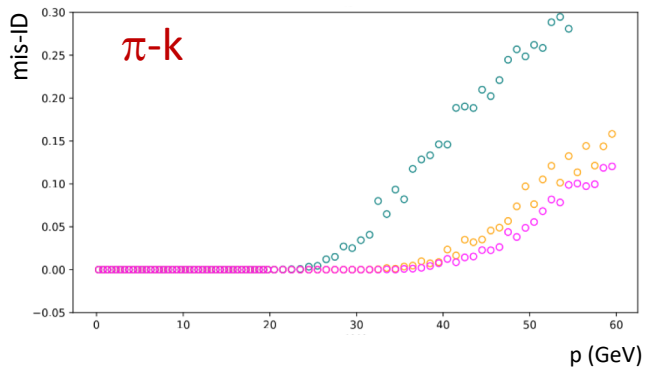
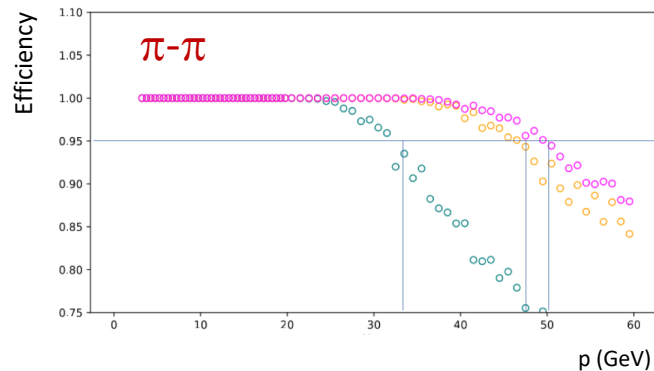


With optimization of the dRICH optics inside EPIC

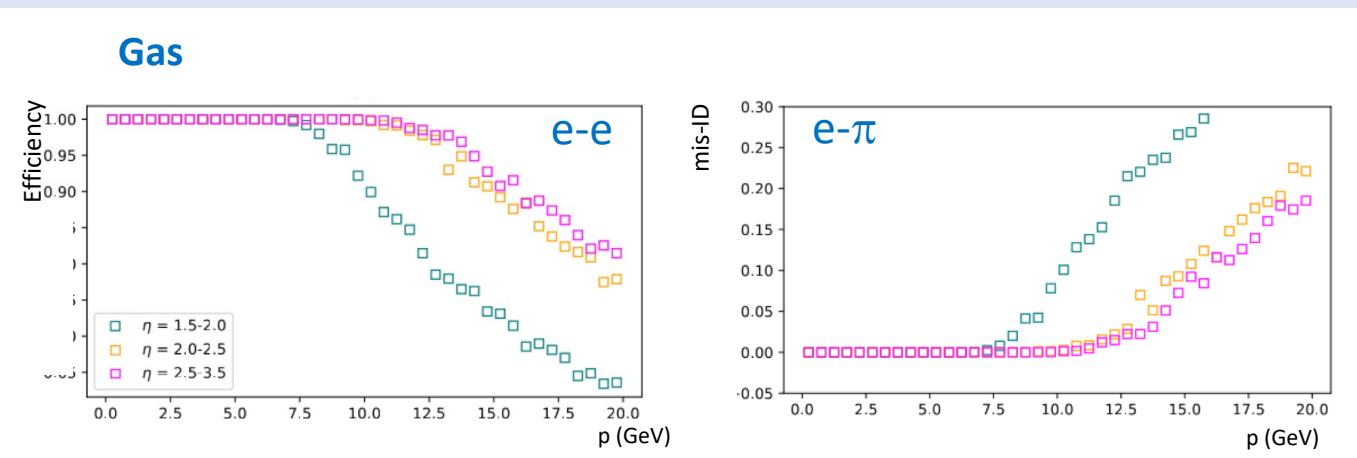
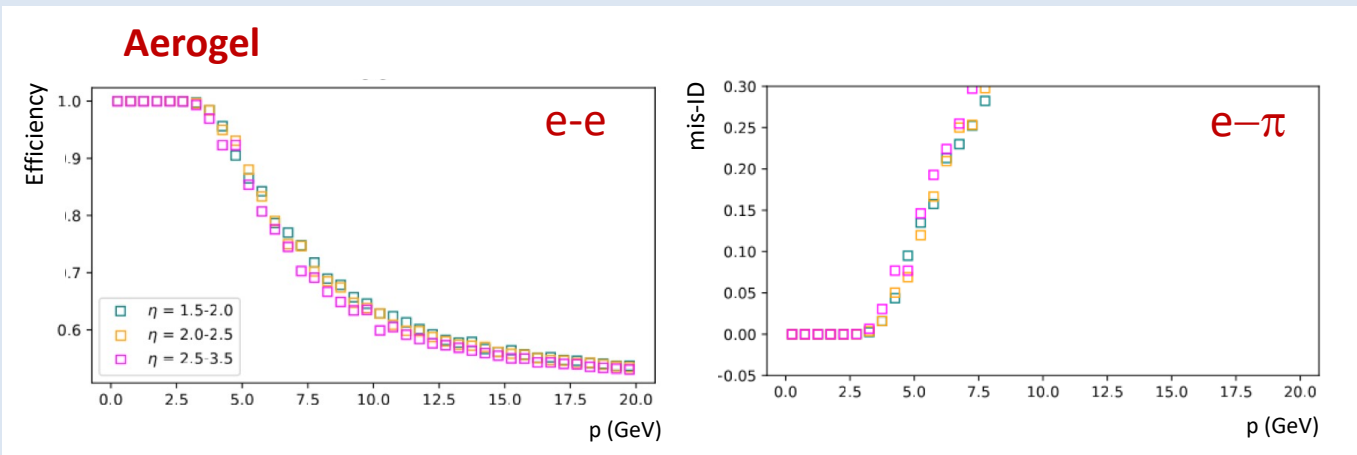
Magnetic field and track resolution accounted for, results averaged over azimuthal angle (ϕ)

TDR Scope: $> 3\sigma$ separation in the wanted momentum range (i.e. at maximum momentum)



Combined
plot**Aerogel****Gas**

Combined plot



+ event display

