First look of pfRICH with aerogel n =1.04,sapphire window and shortened proximity gap.

Changes compared to march review

- Proximity gap has been shortened. 54 cm → 49 cm
- New aerogel type is used. 1.045 → 1.04
- Sapphire window is added. (Effects has not yet been studied)

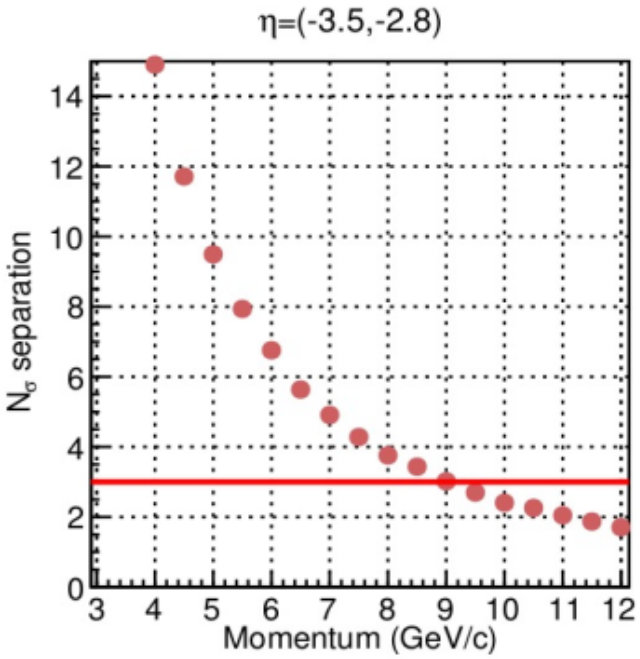
- Comparisons have been made w/ and w/o the pyramidal mirror.

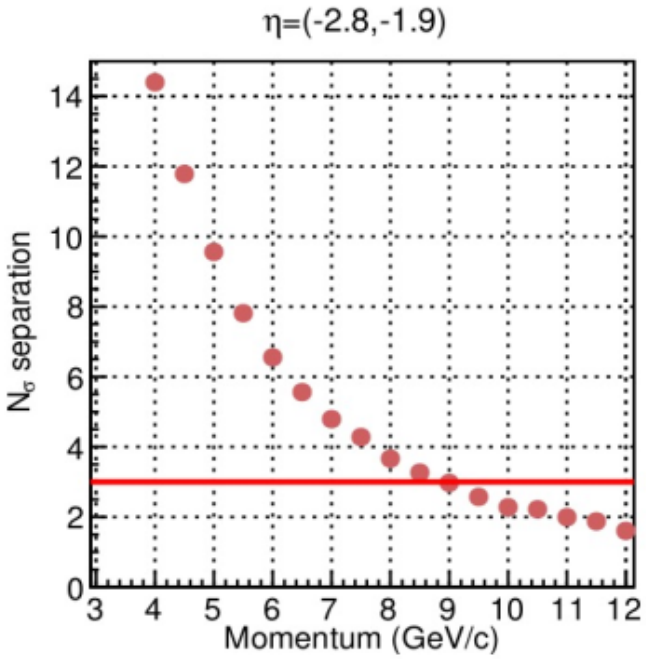
Changes compared to march review

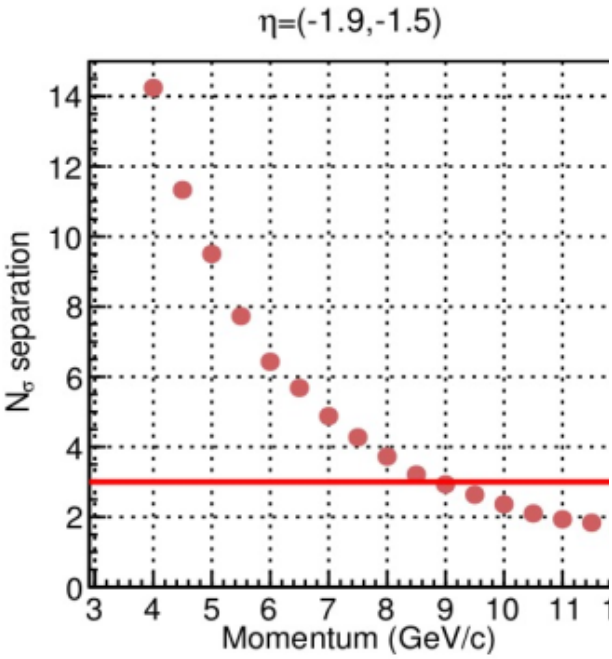
- Proximity gap has been shortened. 54 cm → 49 cm
  → We expect worsen resolution for Single Photo electron
- New aerogel type is used. 1.045 → 1.04
  → We expect saturation angles are lowered by ~20 mrad
- Sapphire window is added. (Effects has not yet been studied)

- Comparisons have been made w/ and w/o the pyramidal mirror.

Performance comparisons

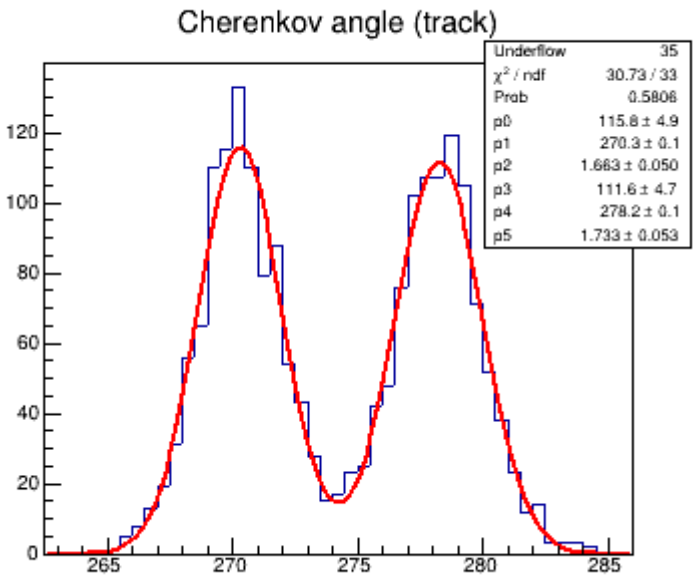




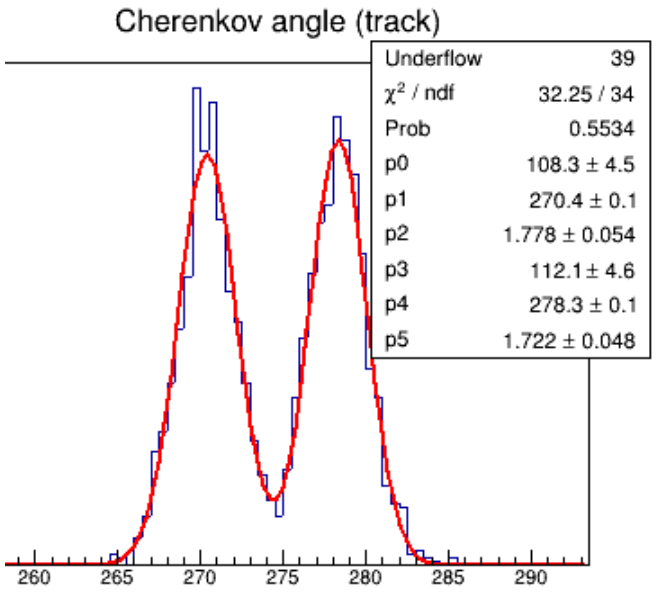


At 7 GeV/c we had had very close to 5 sigma separation w/o pyramidal mirror

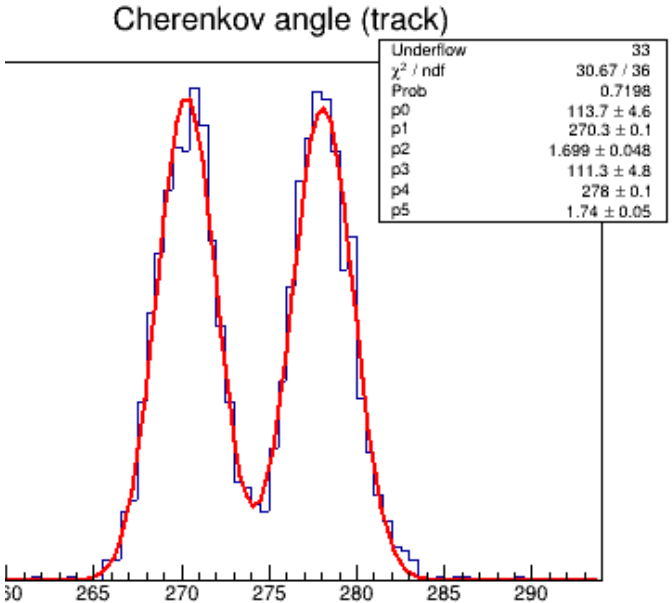
Performance comparisons (almost)



At eta -2.0 4.7 sigma



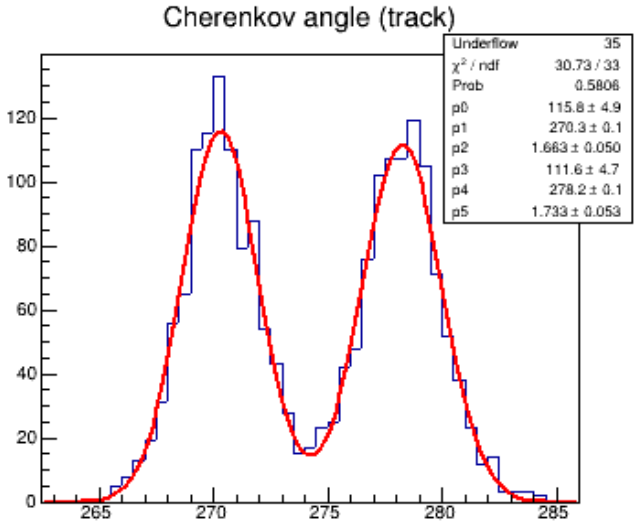
At eta -2.5 4.5 sigma



At eta -2.0 4.5 sigma

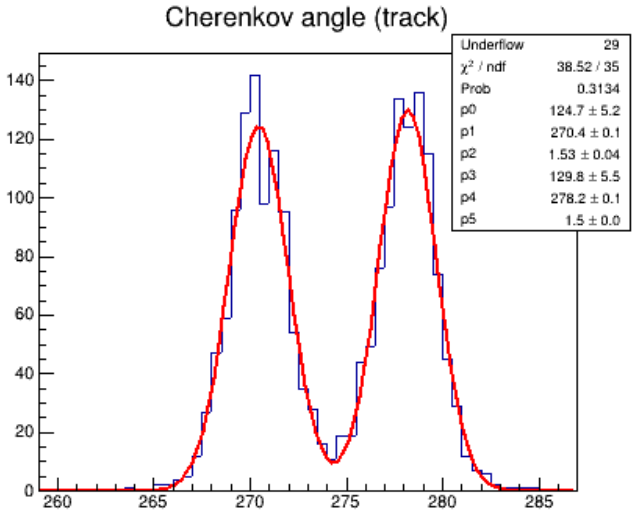
w/o Pyramidal mirror

Performance comparisons (almost)



At eta -2.0 4.7 sigma

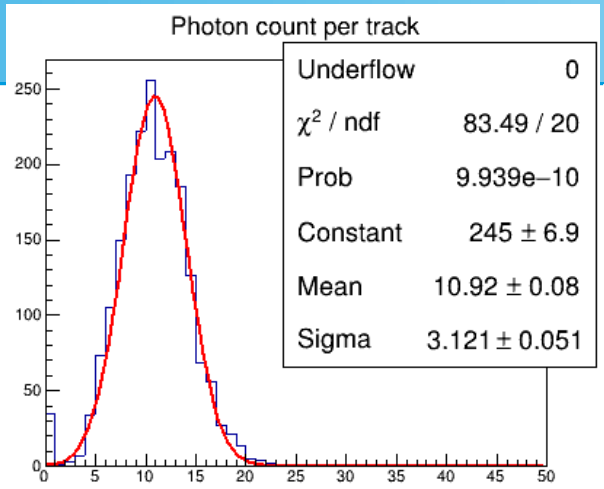
w/o Pyramidal mirror

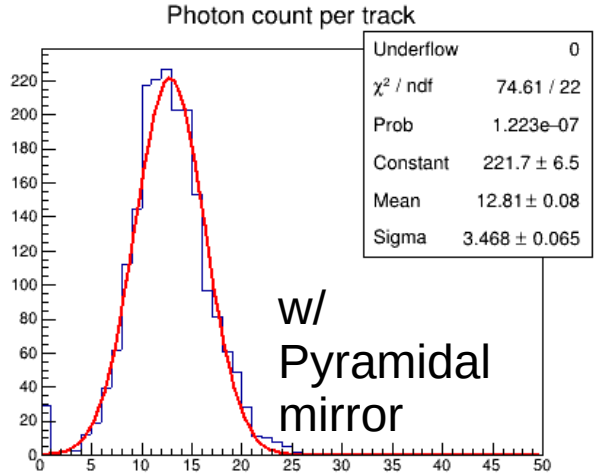


At eta -2.0 5 sigma

w/ Pyramidal mirror

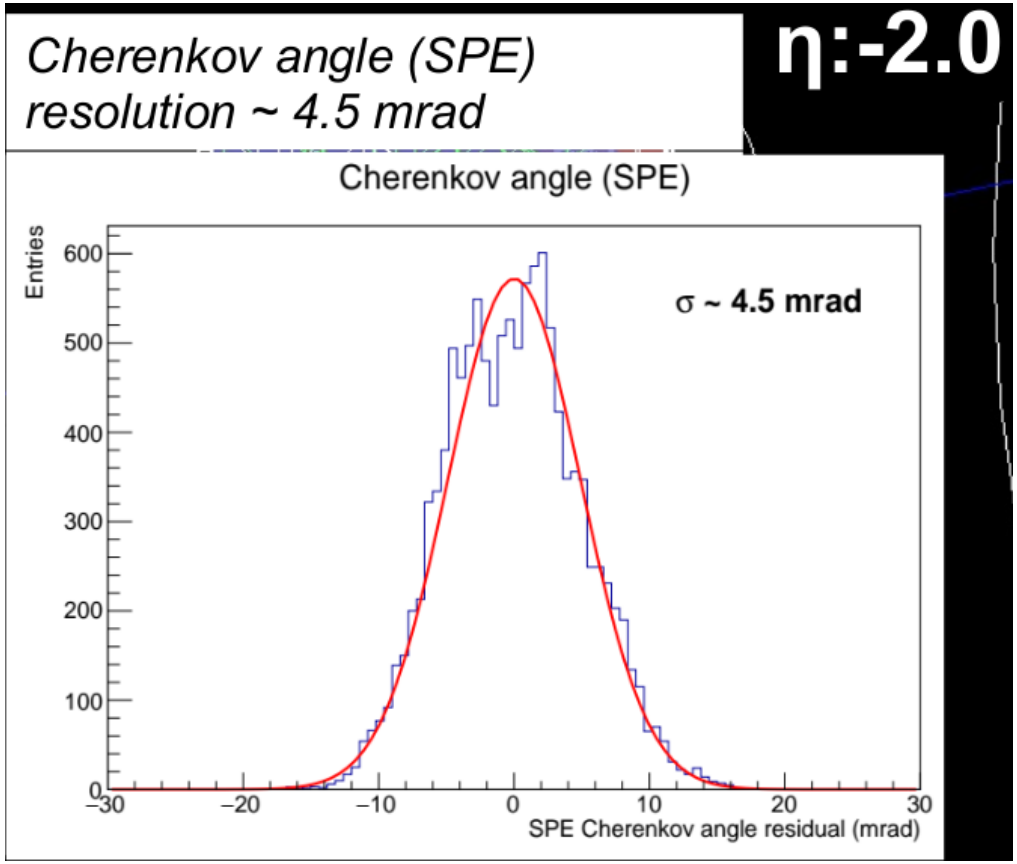
w/o Pyramidal mirror

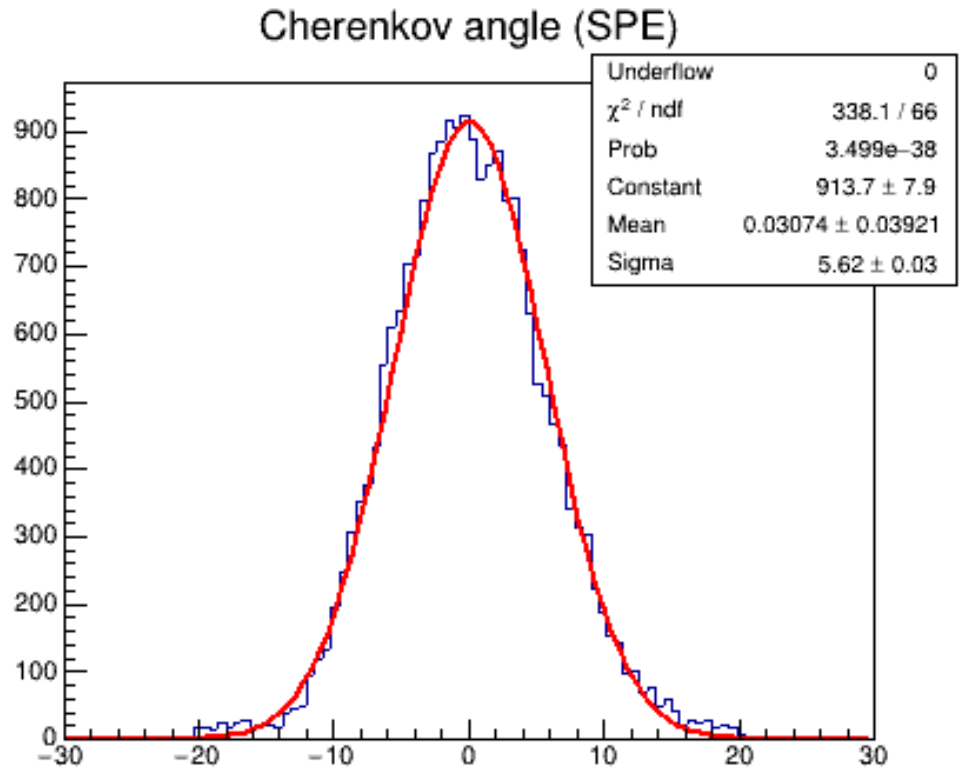




w/ Pyramidal mirror

Single photon resolution

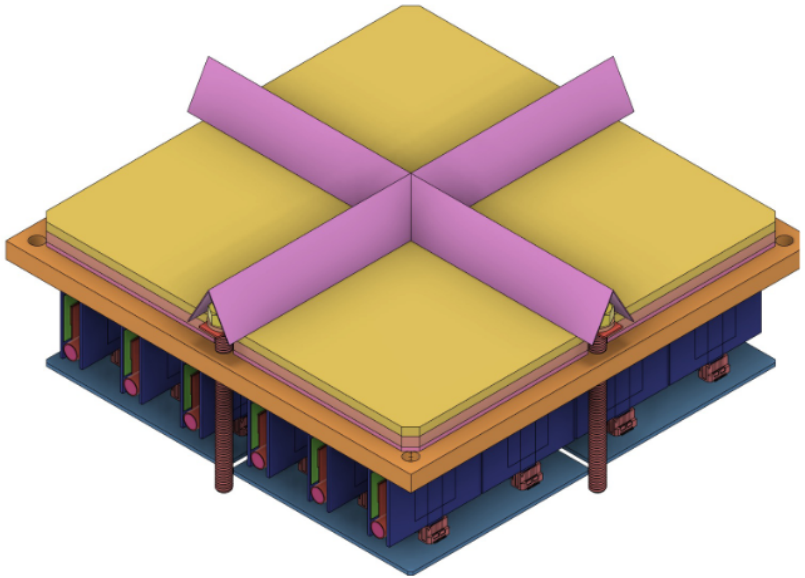


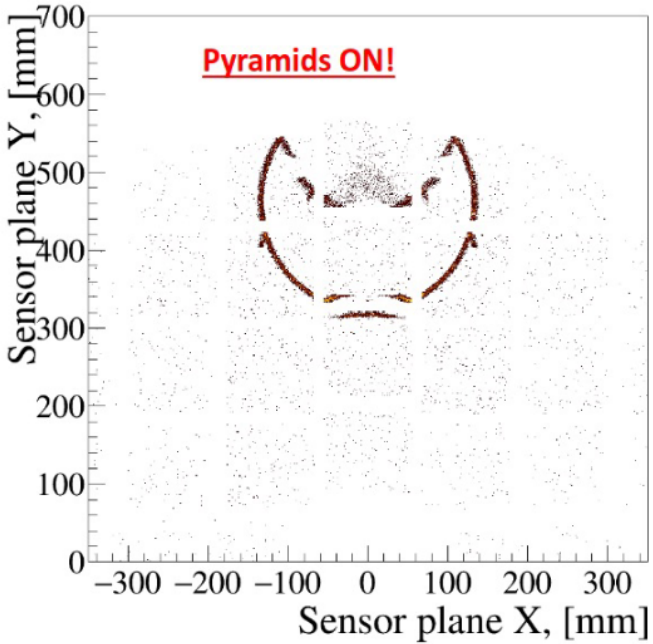


Now resolution has worsen by a mrad

Studies that can be ‘quickly’ done

- The pyramidal mirror can be beneficial.





We need to validate and optimize its geometry.

To check deliverable performance at 7 GeV/c w/ tuned and w/o the pyramidal mirror.