
Next steps

Aerogel characterization measurements

Tile shape

- Check the presence of menisci along the edges of the tile (that would alter the thickness and create points of fragility). Measure the flatness of the tile surface, that would affect the light propagation by refraction.
- Touch probe system (metrology lab at CERN)

Transparency and forward scattering

- Measure the light transmission (transflectance, reflection) as a function of the wavelength by means of a spectro-photometer (better with an integration sphere).
- Measure the broadening of a laser beam passing through the tile

Refractive index

- Aerogel nominal refractive index can be derived by the density.
- Comparison with direct measurement vs photon wavelength along the tile surface.

2024 plan in Bari

- Setting up dedicated laboratory for Cherenkov detector (strong synergy between ALICE3 and ePIC), in particular for aerogel characterization.
 - Photo-spectrometer with integration sphere already ordered → delivered beginning next year.
 - Setting up system to measure the refractive index (already done here in Bari in the past)
- Start characterization of the larger tiles (15x15 cm²).