Dual-RICH update 4-11-2016
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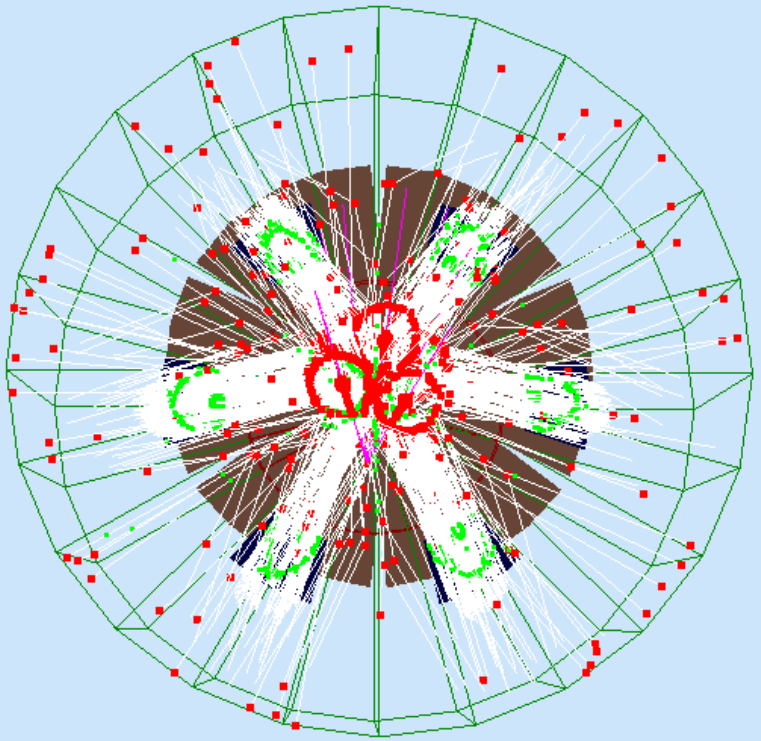
- general R&D Updates

Rayleigh scattering

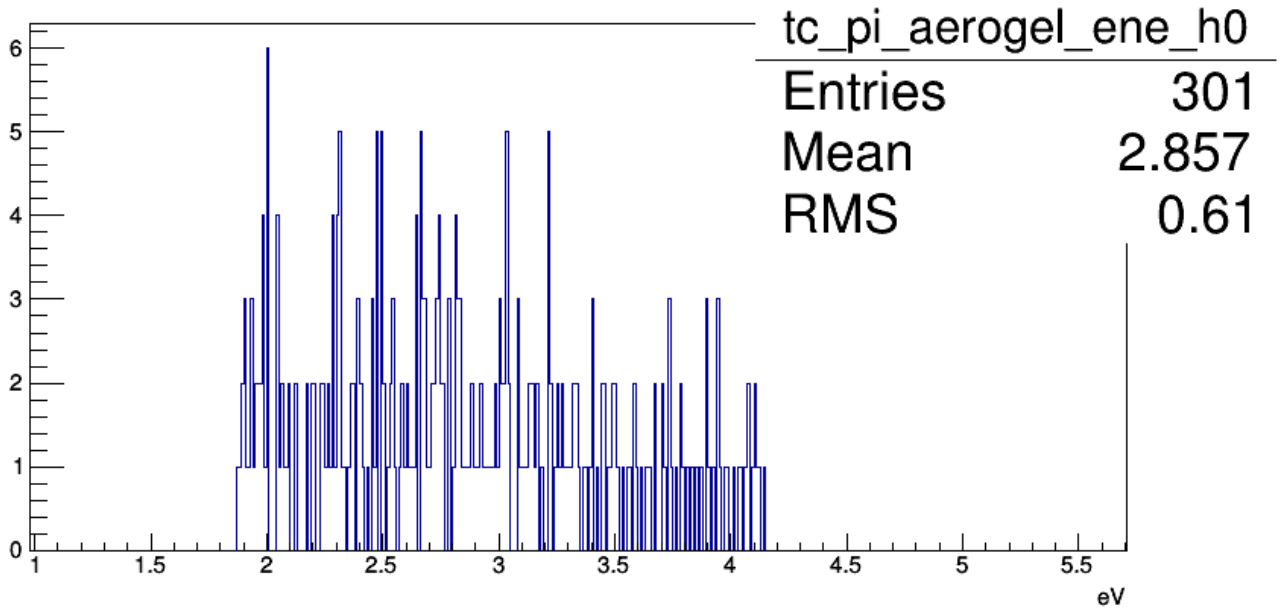


Using Marco's Parameters for Aerogel

Most of the scattered photons do not hit the detector planes

Distribution of the detected photons - preliminary result

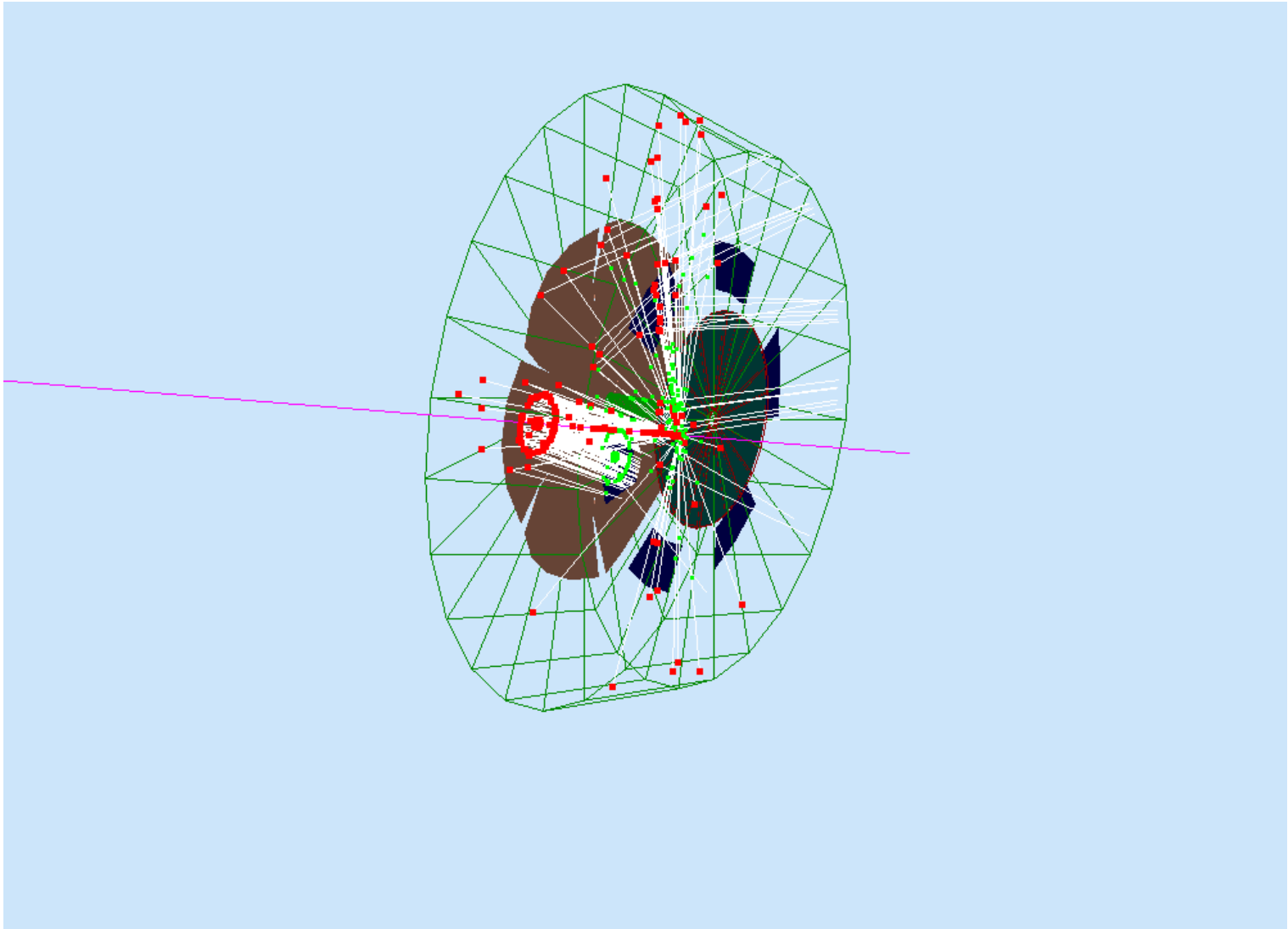
pion 10 GeV/c
at 5°



Without an achrylic shield the Rayleigh photons seems to not effcts significantly the distributions of the photons in the detector planes.
most (all in this case of 20 tracks) of the scattered photons are reflrected outside the detector plane region!
But there is a reduction of the total number of detected photons!

This have to be studied also using a shield of Acrylic
LHCb papers suggests to avoid direct contact of CF4 gas and Aerogel!

Acrylic shield



Additional background comes from cherenkov photons produced in the acrylic shield

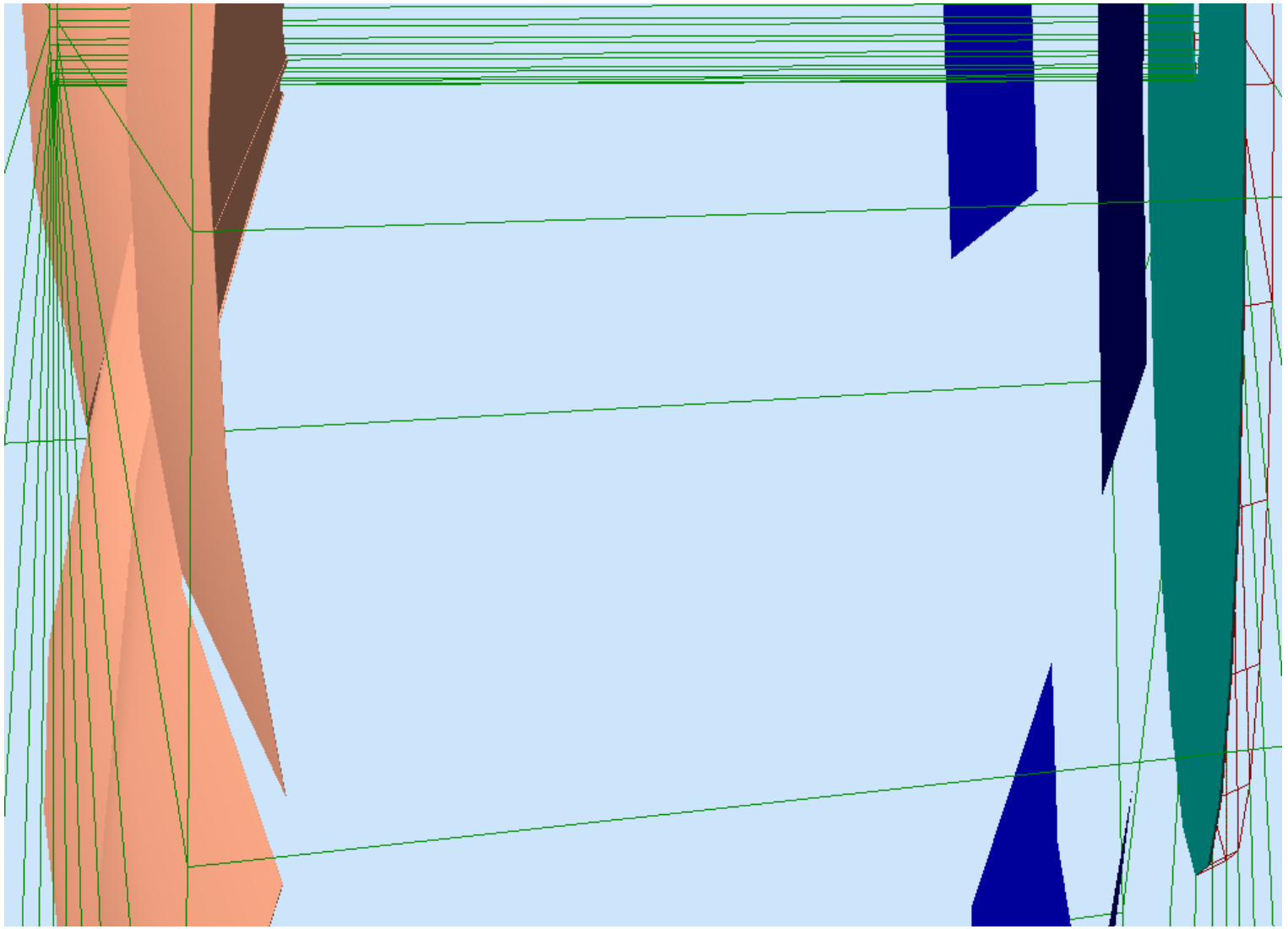
To be studied in detalis as a function of the Tilt (with respect to Aerogel) of the shield

Shield not parallel to the Aerogel?

To do Next

- Study of the signal vs bg distribution in the detector plane
- Find e/pi separation
- Do plots/tables of the error contributions in a comparable format

Acrylic shield



An acrylic shield has been added In front of the Aerogel

Thickness 3 mm

Absorption length About 5 m above 320 nm, about mm Below 320 nm