# Single Module Simulation

On going work

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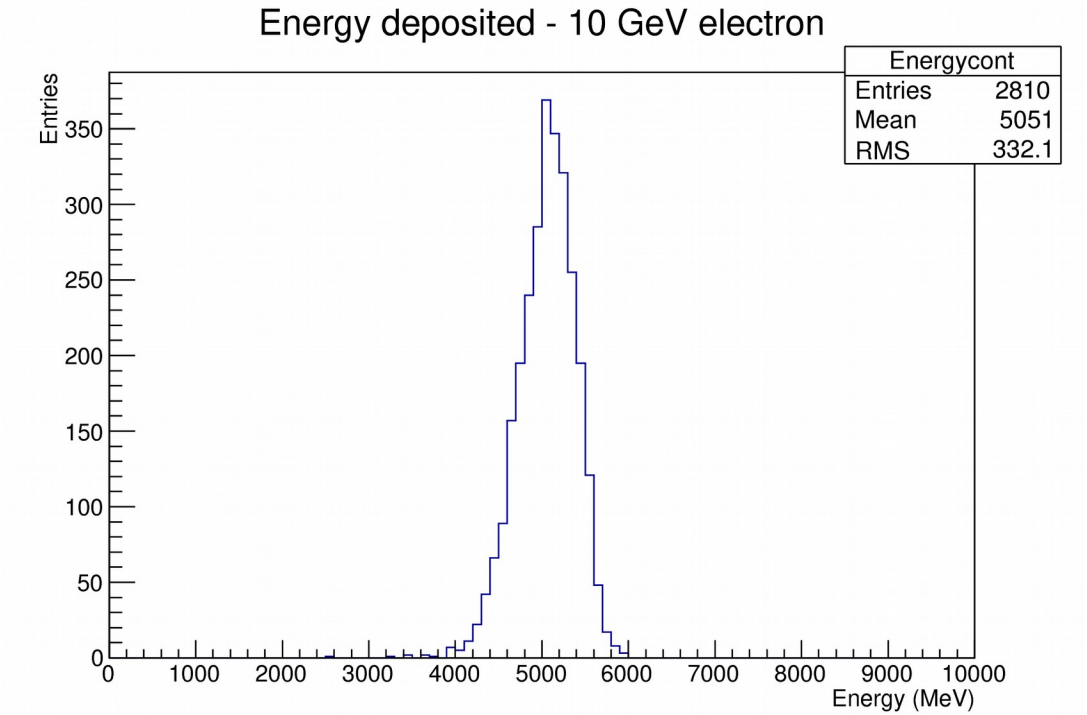
# Geometry and Materials

- Materials: Switched from copper to brass (Cu260): 70% copper 30% zinc.
- Geometry: cross section 1.2 mm x 1.2 mm (8x8 fibres) → fibre to fibre distance is 0.5 mm.

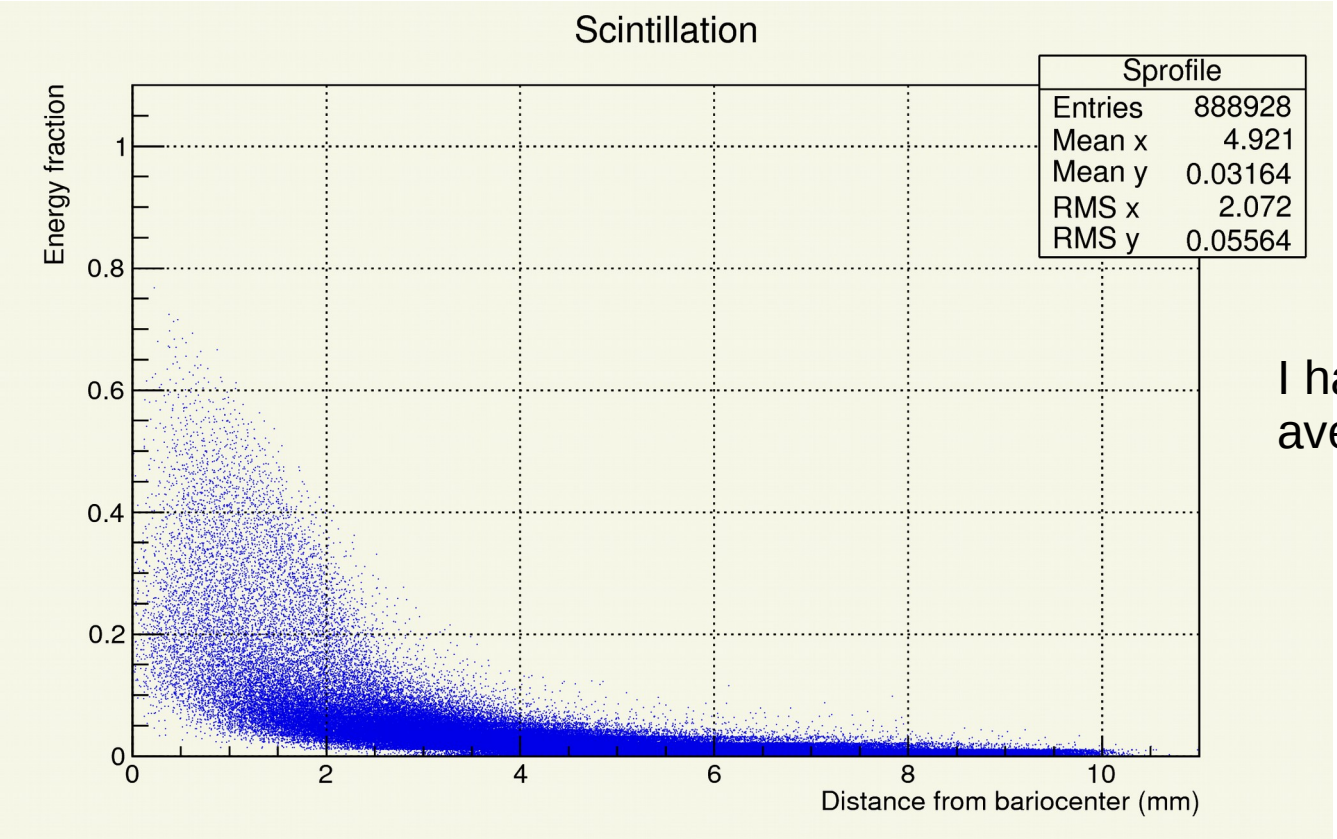



(New) Average Energy containment:

50.5% → Number of Cherenkov photons expected in a full containment calorimeter is slightly reduced.

# Lateral Profile - Scintillation

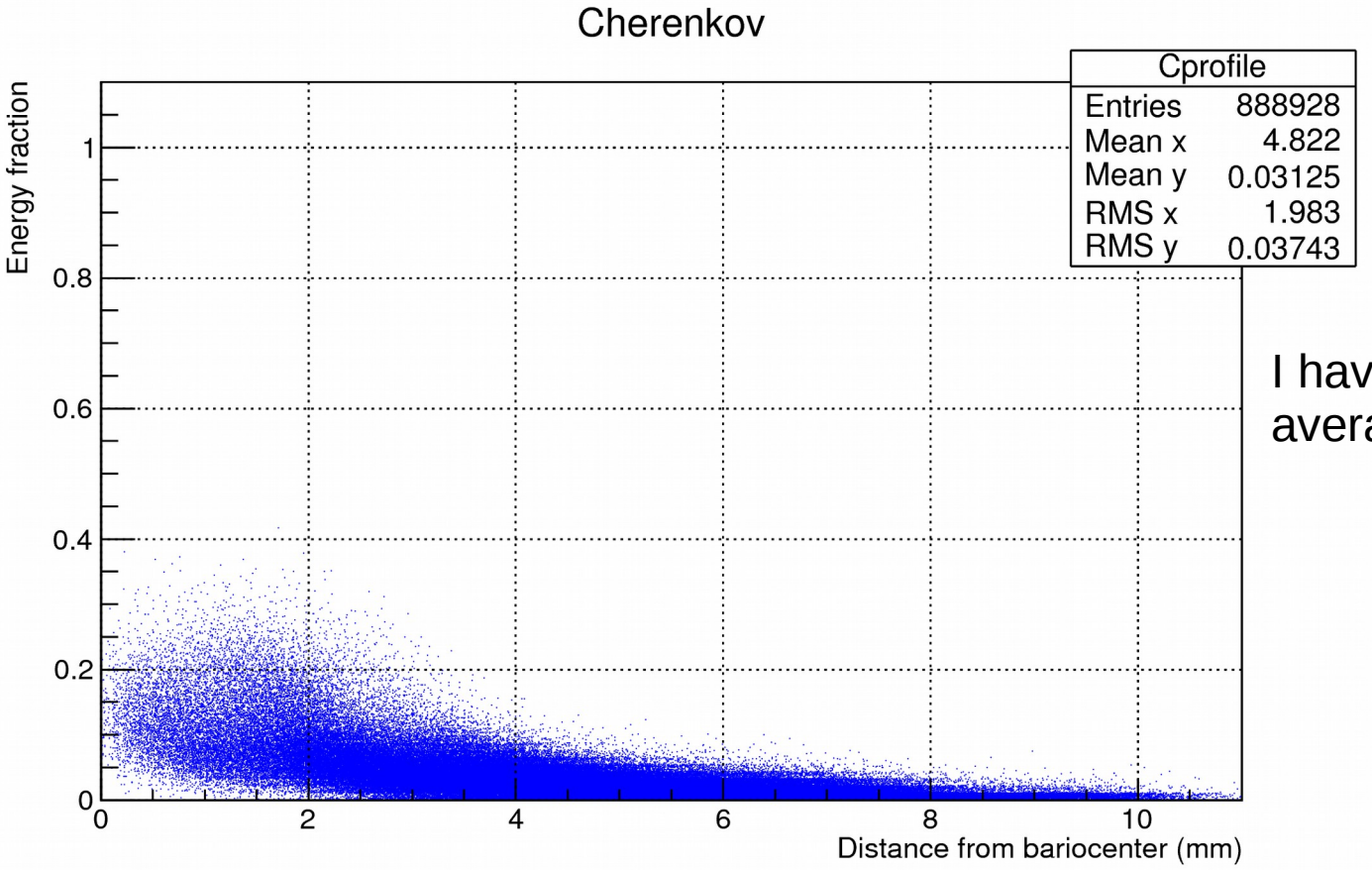
- I simulate the energy deposit in each scintillating fibre and reconstruct the bariocenter.
- Reconstruct the shower profile (following instructions from Como).




I have not calculated average values yet!

# Lateral Profile - Cherenkov

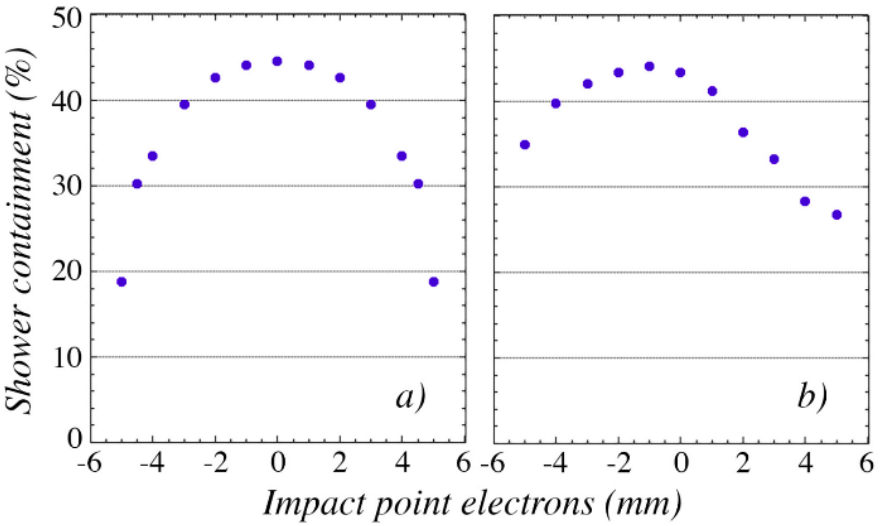
- Same approach for the Cherenkov lateral profile → profile is much less peaked but I don't now how well light propagation is described in simulations.




I have not calculated average values yet!

# (Tell me) What to do

- Study the energy containment with different impact points and rotation angles with the new geometry and materials.




- Compare lateral profiles.
- Check the simulated Cherenkov photon propagation → I will try to propagate light till SiPMs instead of parameterize it.
- Tell me what you need...