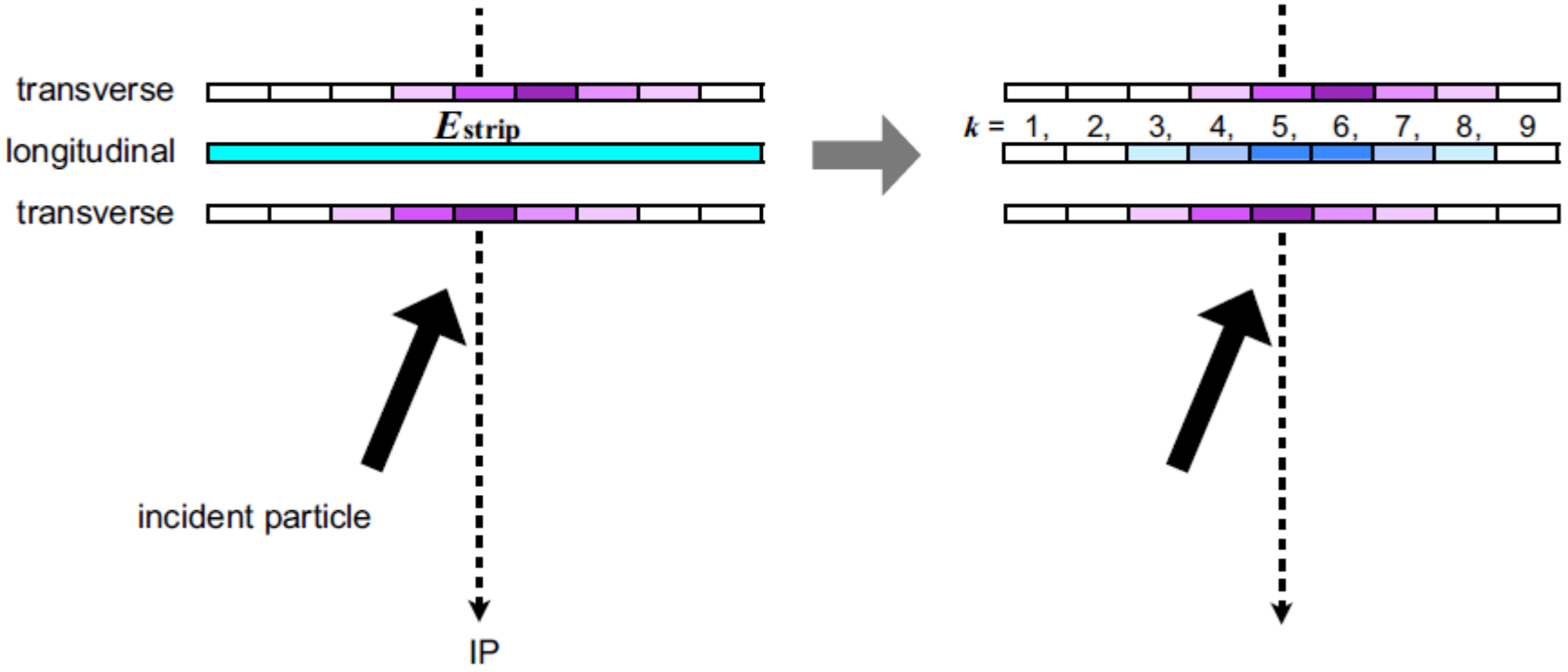
Algorithm



5*45mm Cell -> 5*5mm Cell

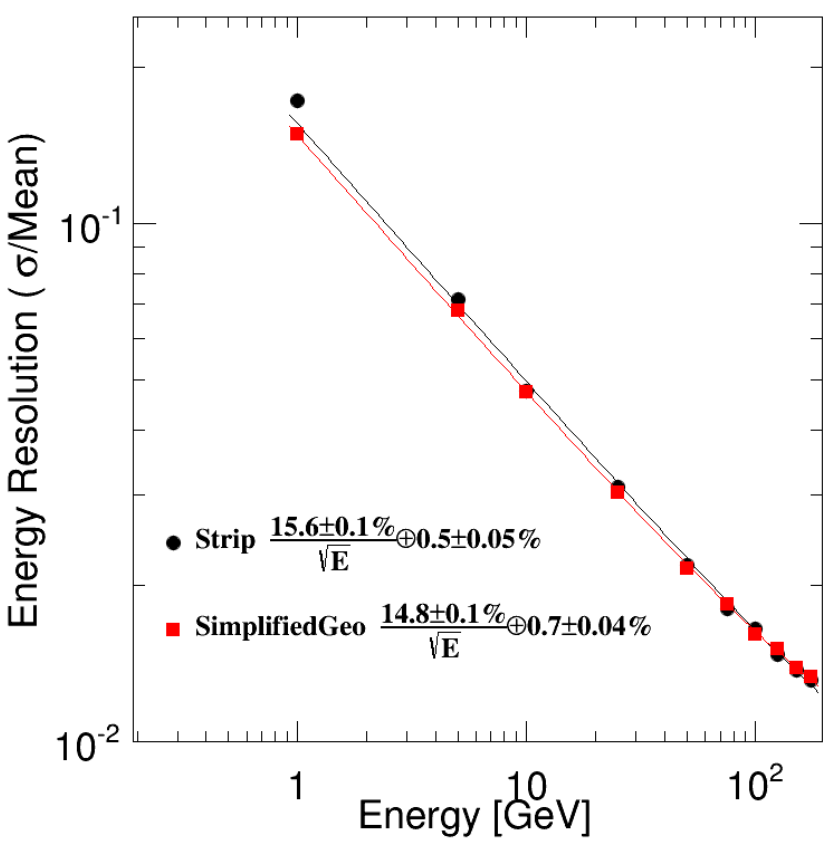
Energies of Neighbor Layer Strips (2*9) are used to calculate the splitting weights

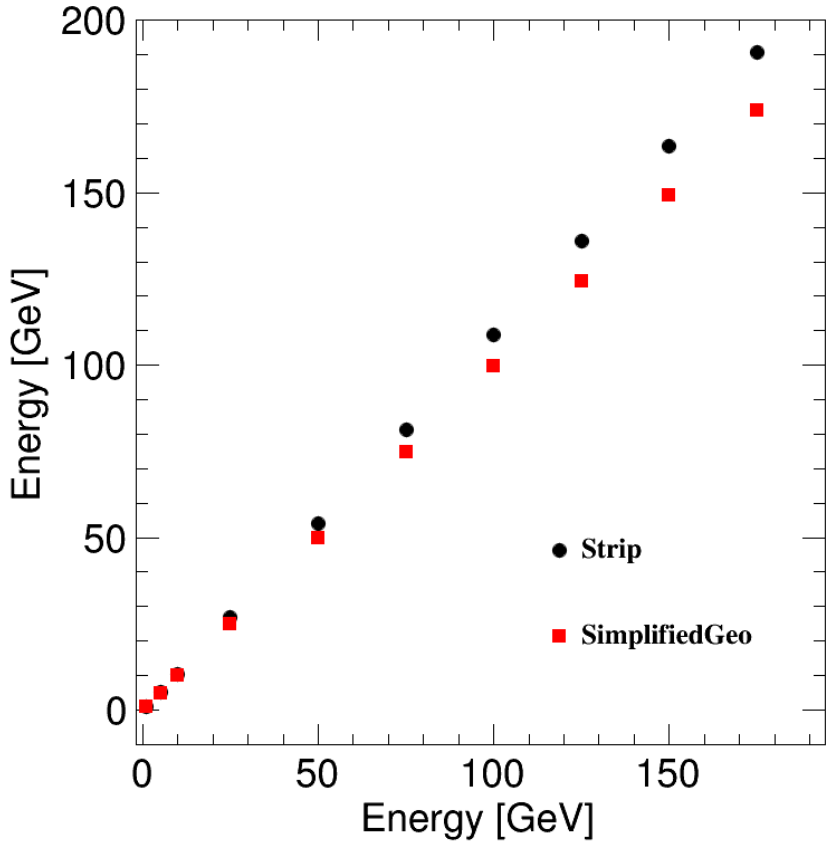
Geometry

Simplified Geometry
30 Layer: W*2.8mm+Scintillator*2mm+PCB*2mm
CellSize: 5mm*5mm

Merge into 45mm*5mm Cell, orthogonal at neighbor layer.

Single Photon Energy Reconstruction

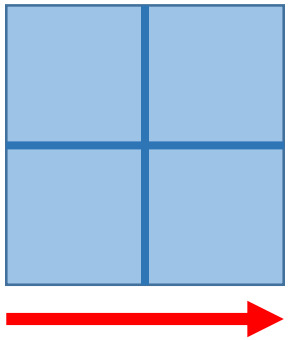


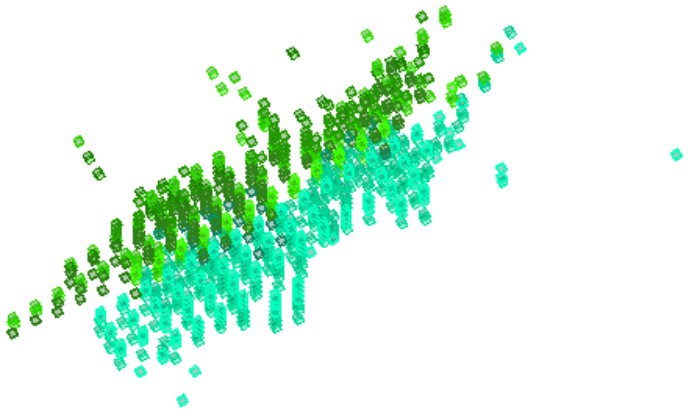


Some hits will be lost, when there is no energy deposition at the 18 cells for weight calculation

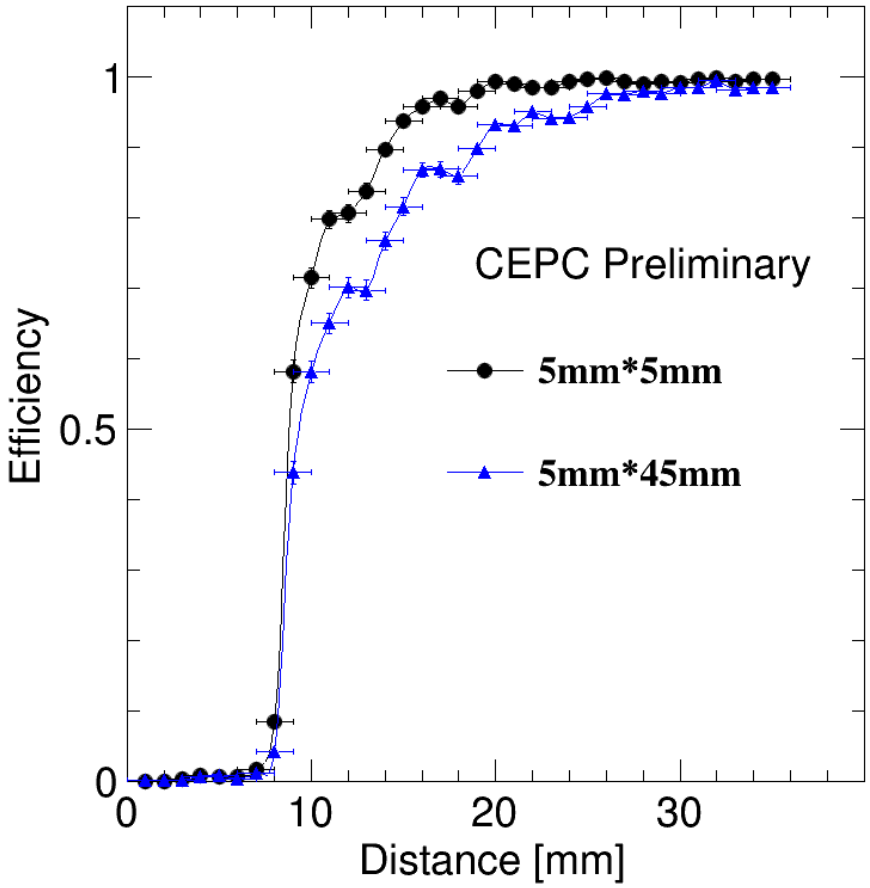
- Energy resolution decrease by ~10% at E<25GeV
- Non-linearity for energy calibration

Di-photon Separation

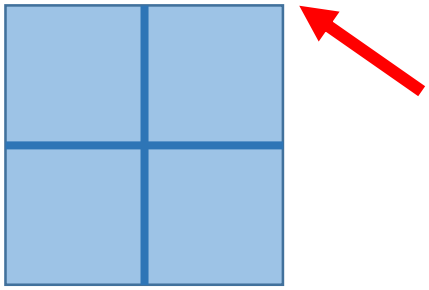




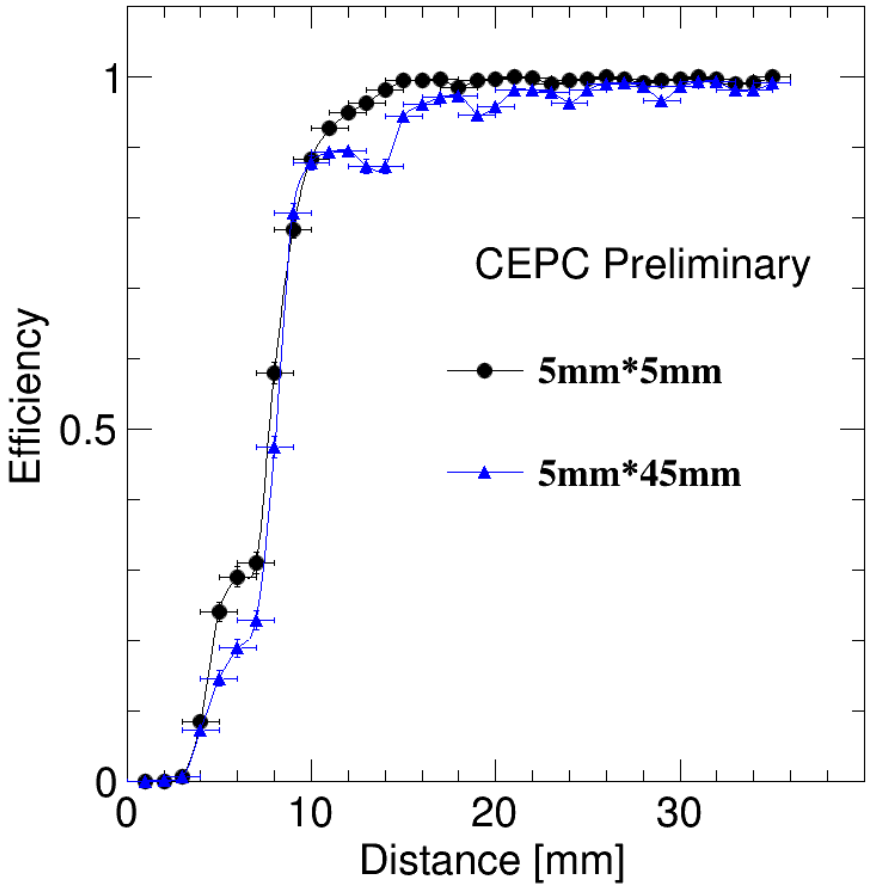
Distance = 15mm



Di-photon Separation

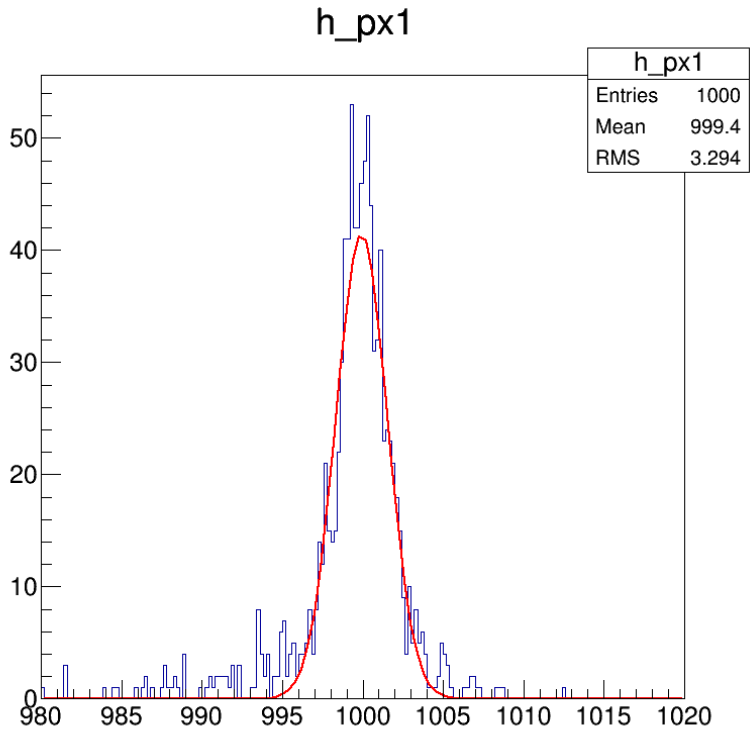


Distance = 15mm*sqrt(2)

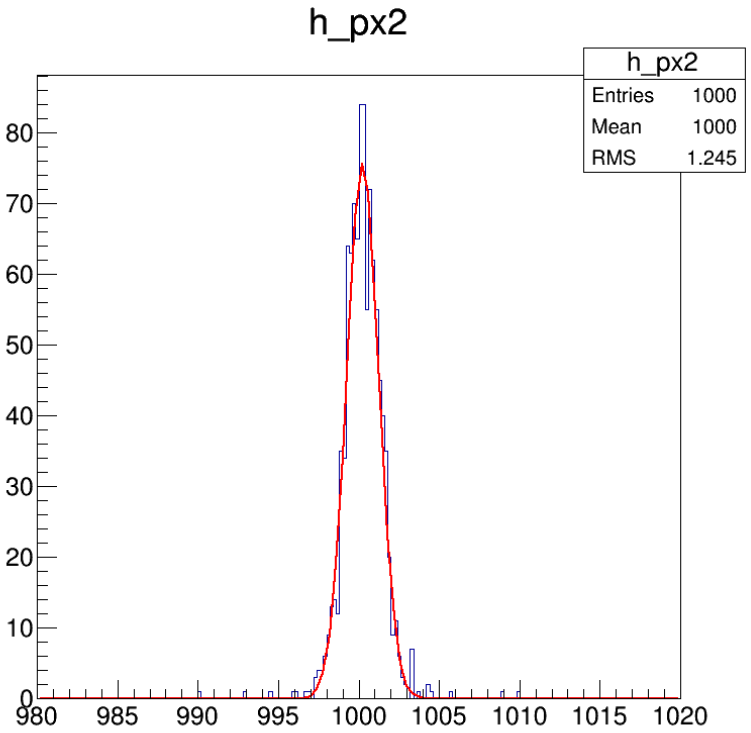


Should be Distance/sqrt(2)

Single Photon Position Reconstruction



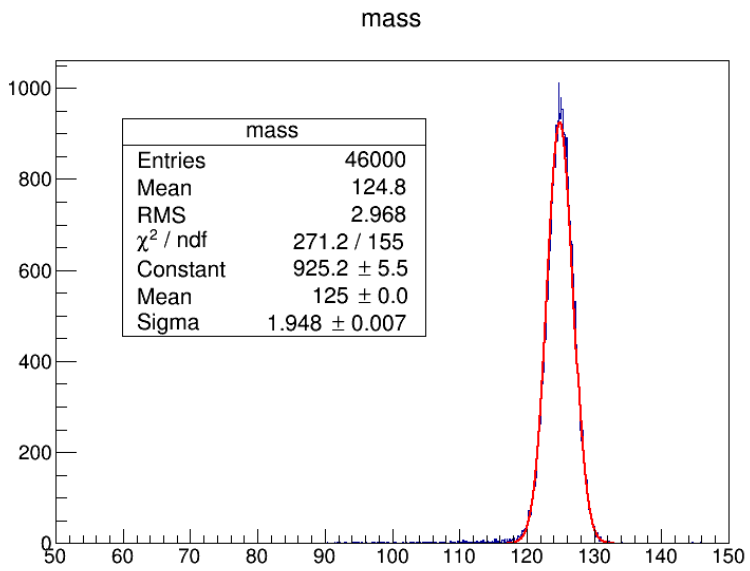
5mm*5mm



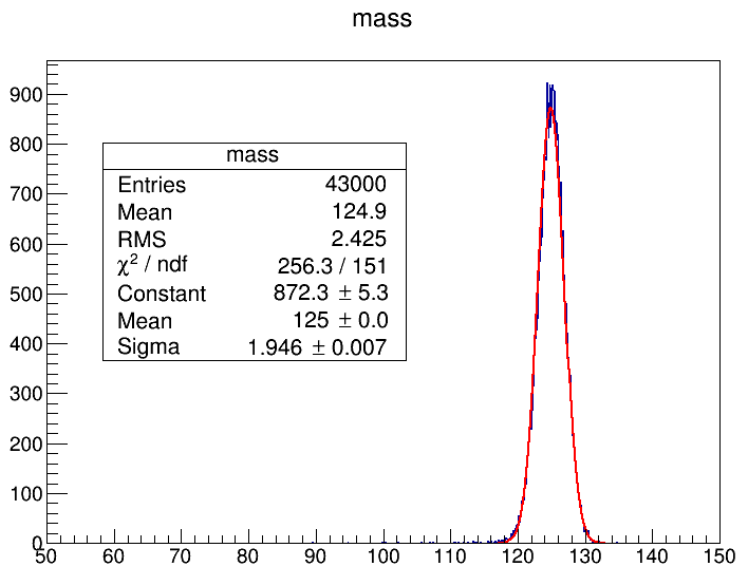
5mm*45mm SSA

For 5GeV photon
Better position resolution

vvH->γγ



5mm*5mm



5mm*45mm
SSA

AHCAL @ CEPCv4