Radiative Photons Distributions

Maxime Levillain

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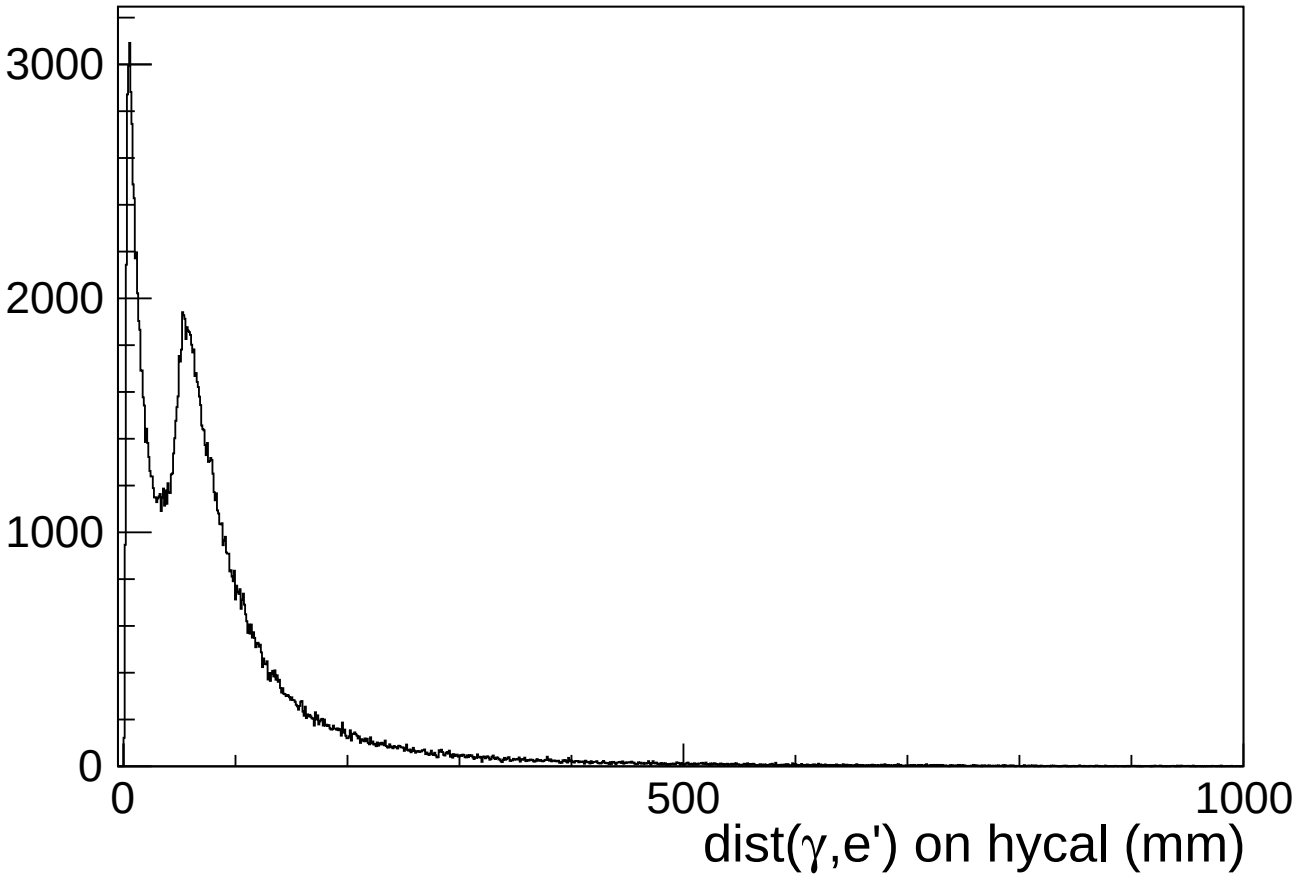
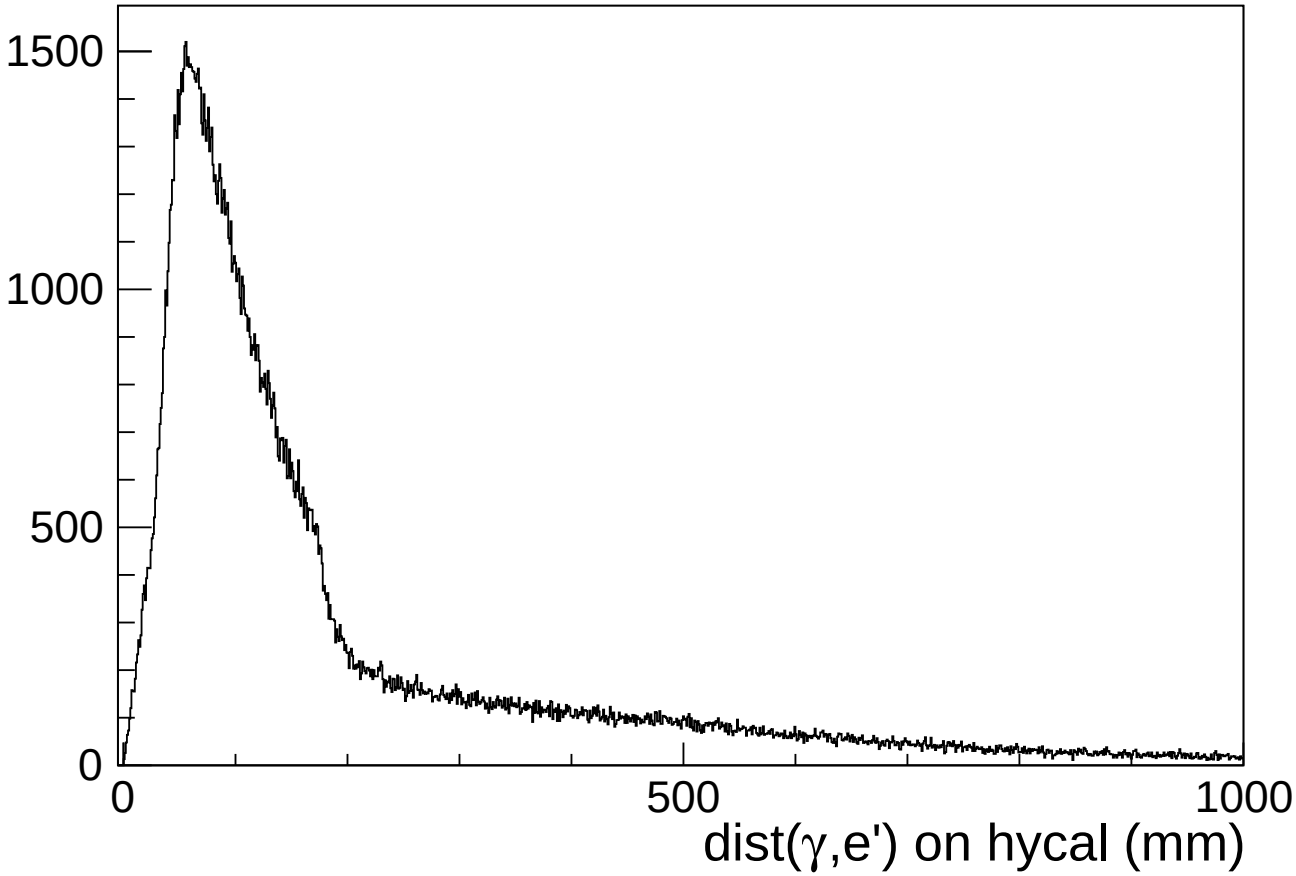
- Using Gramolin MC generator for *ep* and Møller
- 1.1 GeV with photon maximal energy at 770 MeV
- First using only MC generator
- Then using MC generator + geant4 simulation

Distance photon-electron for 1.1 GeV *ep*



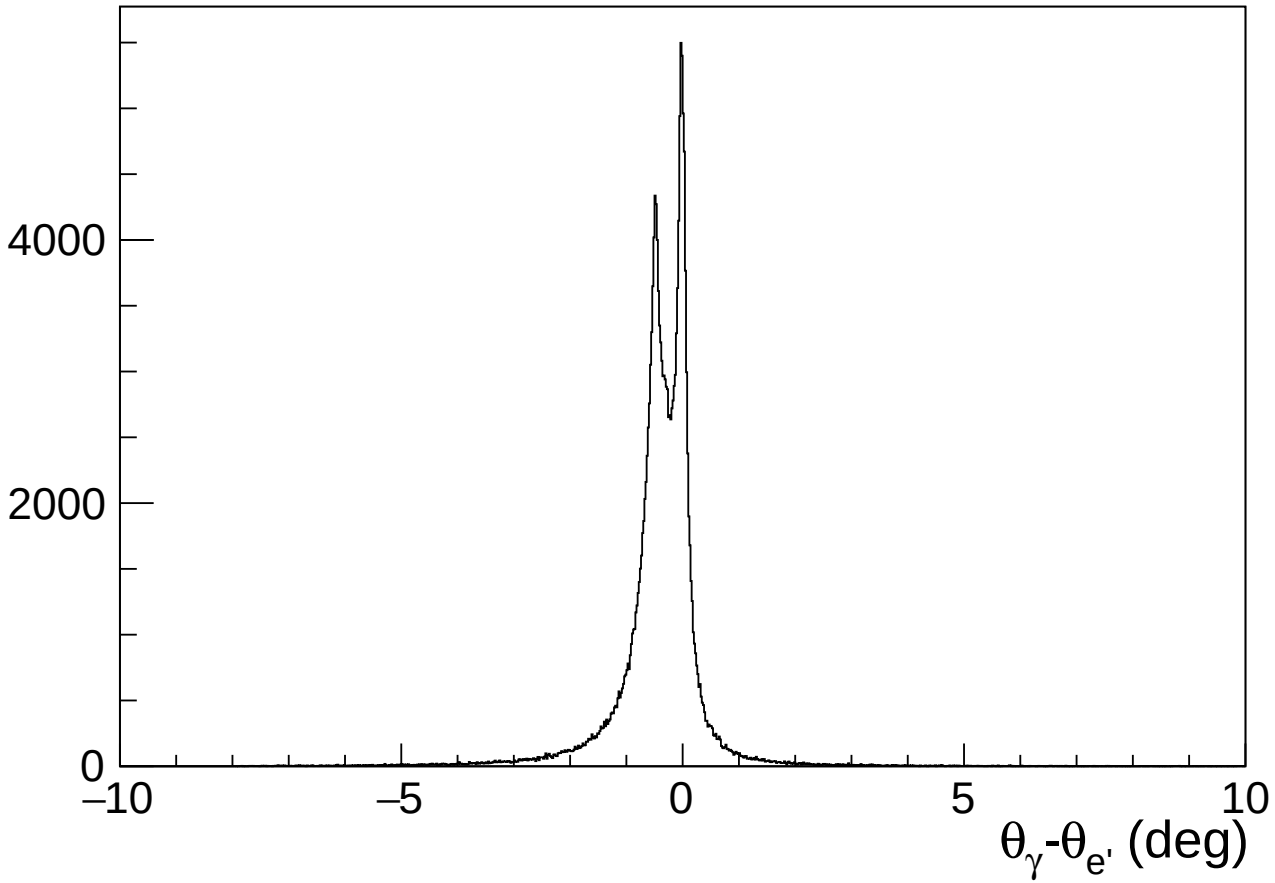
- Two peaks, second one around 6 cm = 3 modules

Distance photon-electron for 1.1 GeV Møller

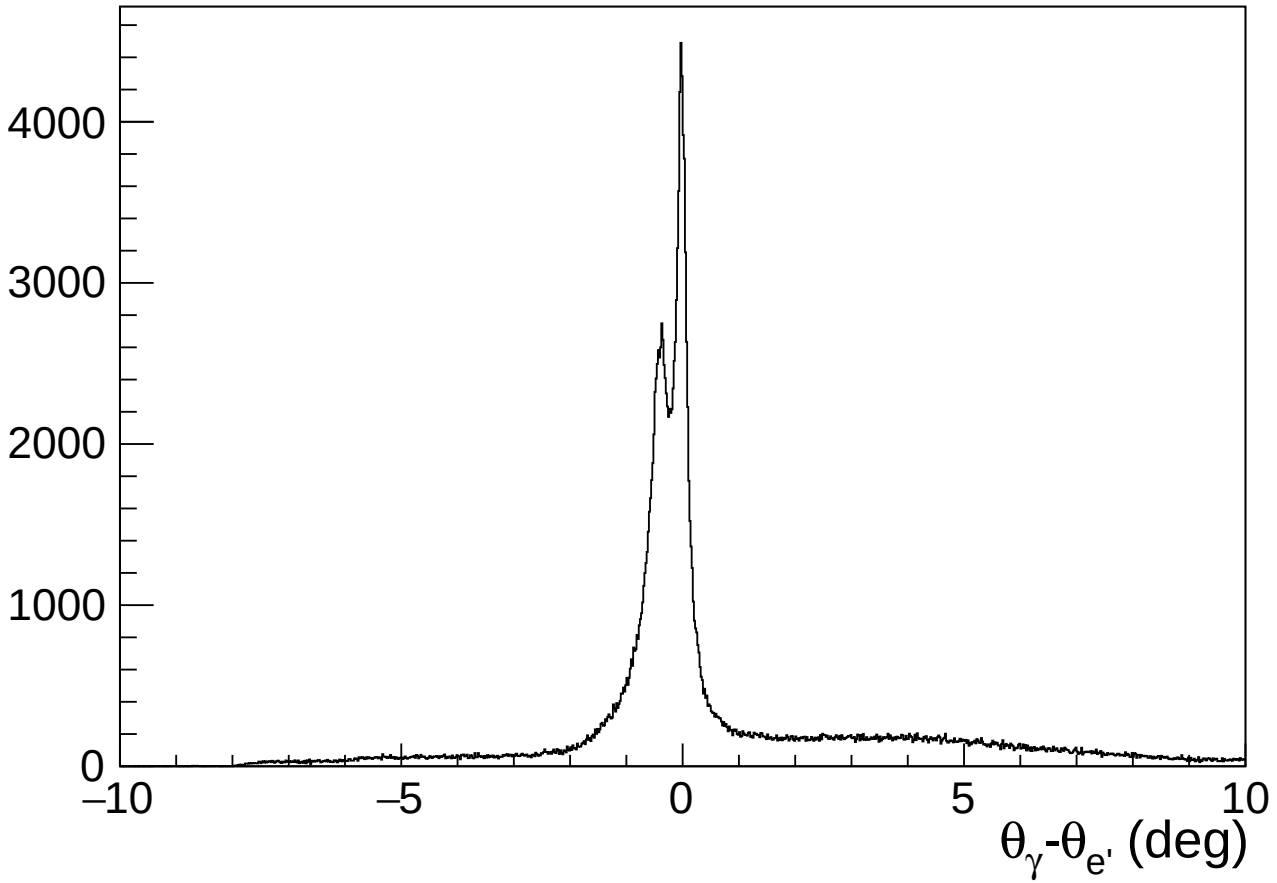


- One peak around 6 cm = 3 modules

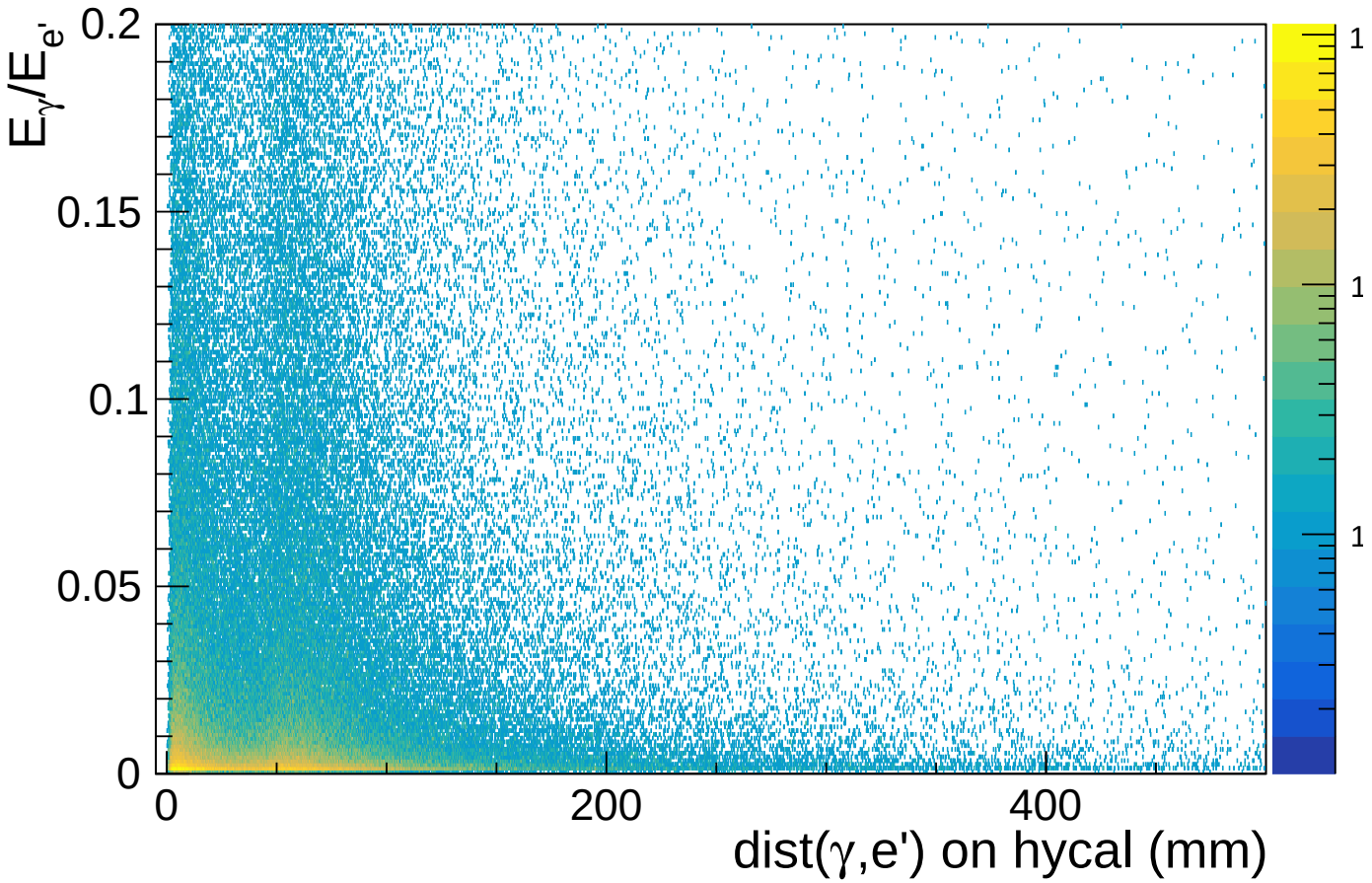
θ difference for 1.1 GeV *ep*



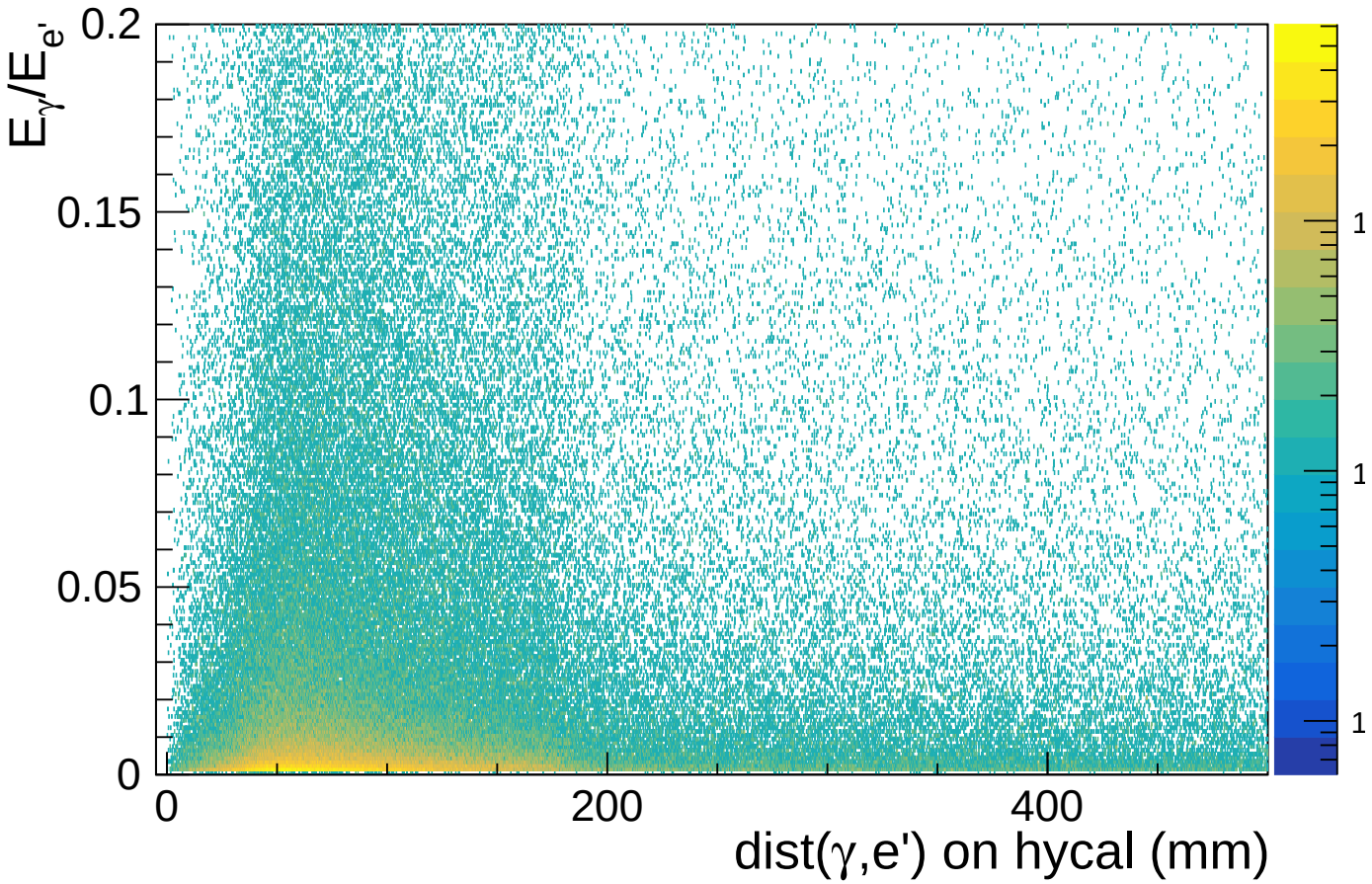
θ difference for 1.1 GeV Møller



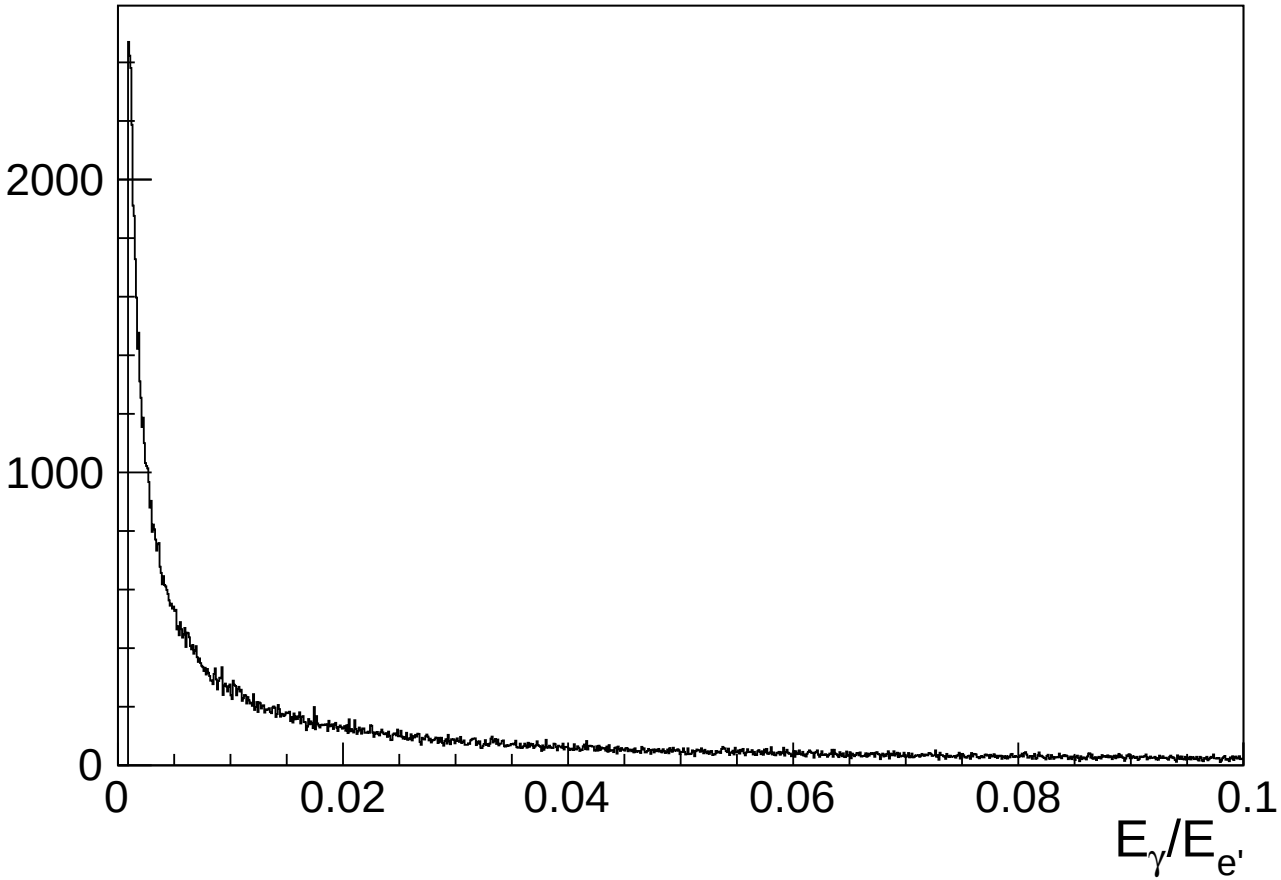
Energy fraction versus distance for 1.1 GeV ep



Energy fraction versus distance for 1.1 GeV Møller

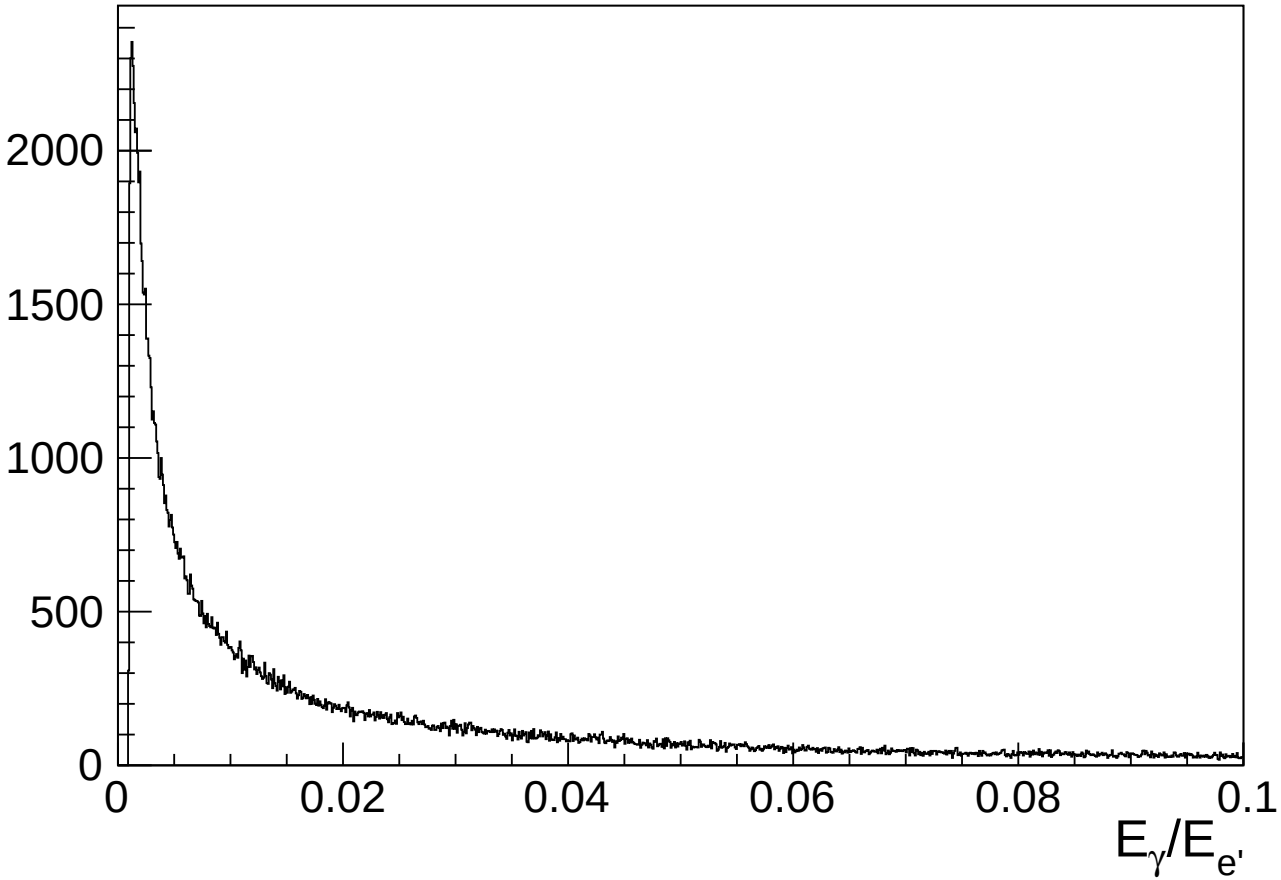


Energy fraction for 1.1 GeV *ep*



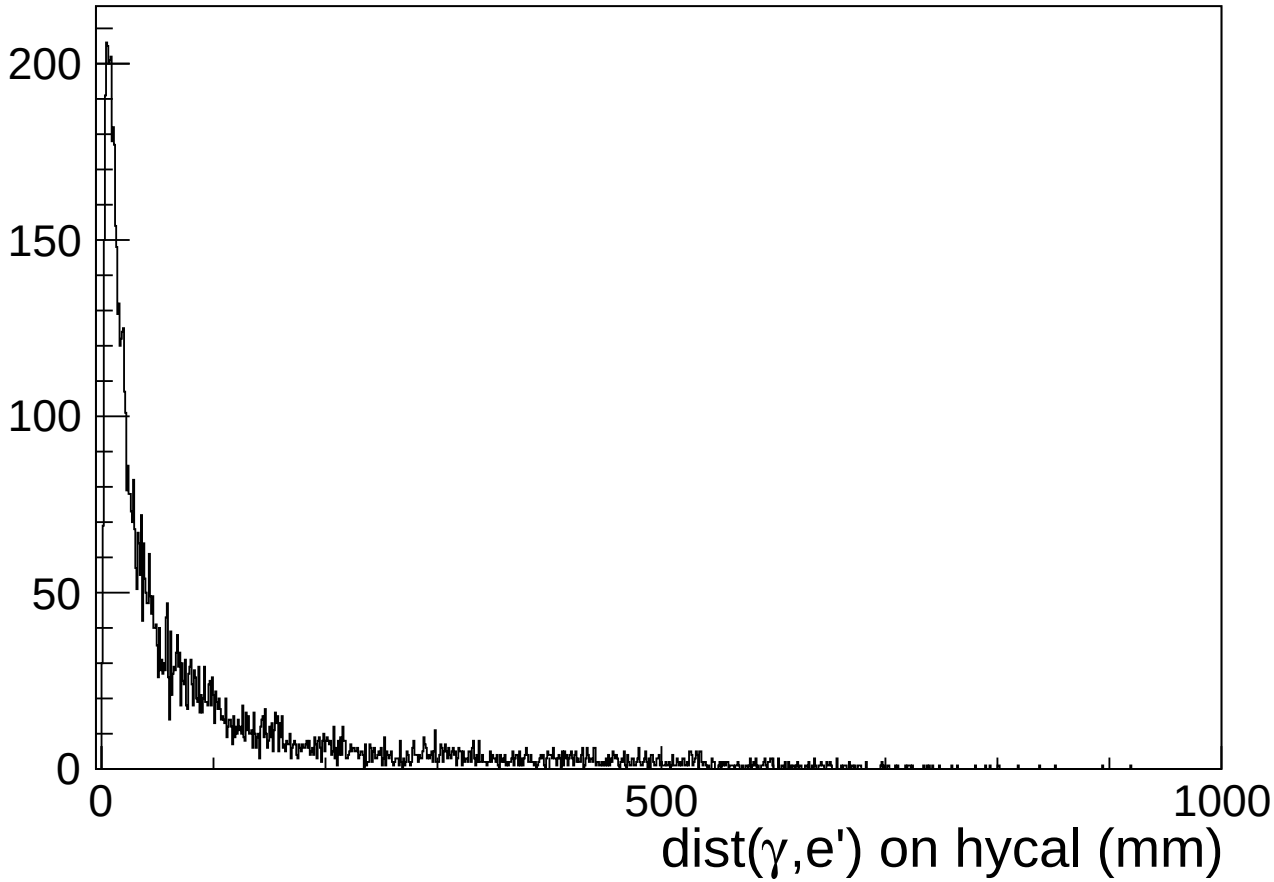
- Deviation from 0 at 2.4% $\sim$ energy resolution

Energy fraction for 1.1 GeV Møller



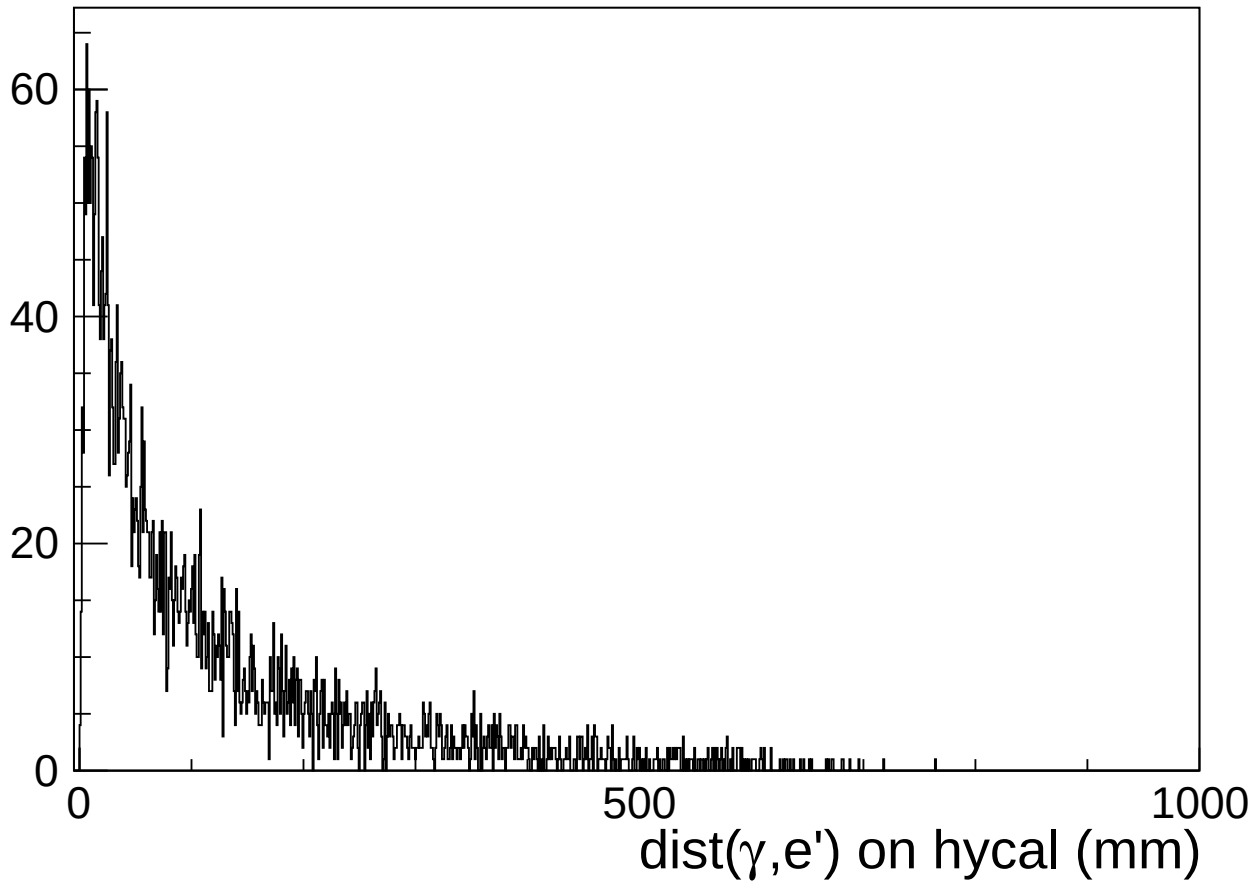
- Deviation from 0 at 2.6% $\sim$ energy resolution

Distance photon-electron for 1.1 GeV *ep* (geant4)

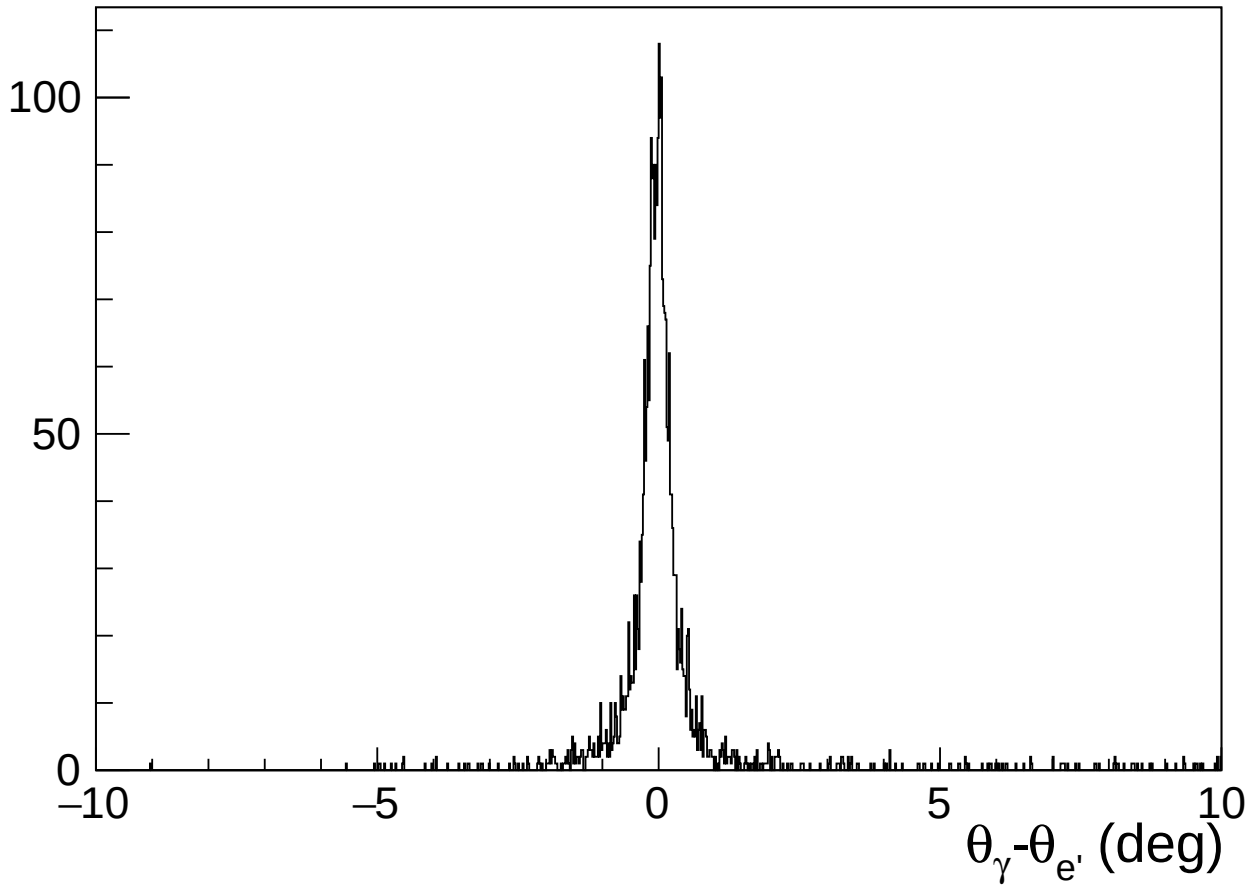


- No peak any more around 6 cm
- Only 1/4 photon reaches HyCal

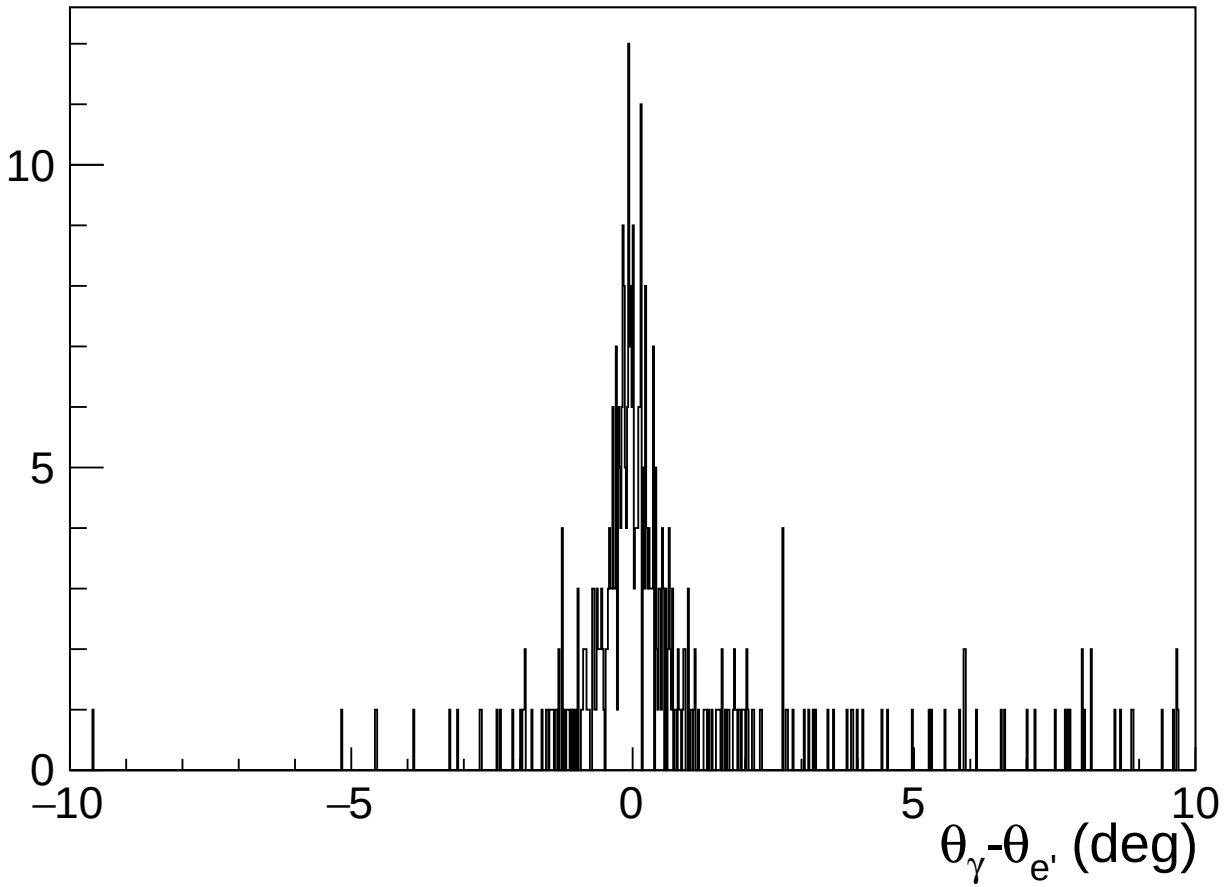
Distance photon-electron for 1.1 GeV Møller (geant4)



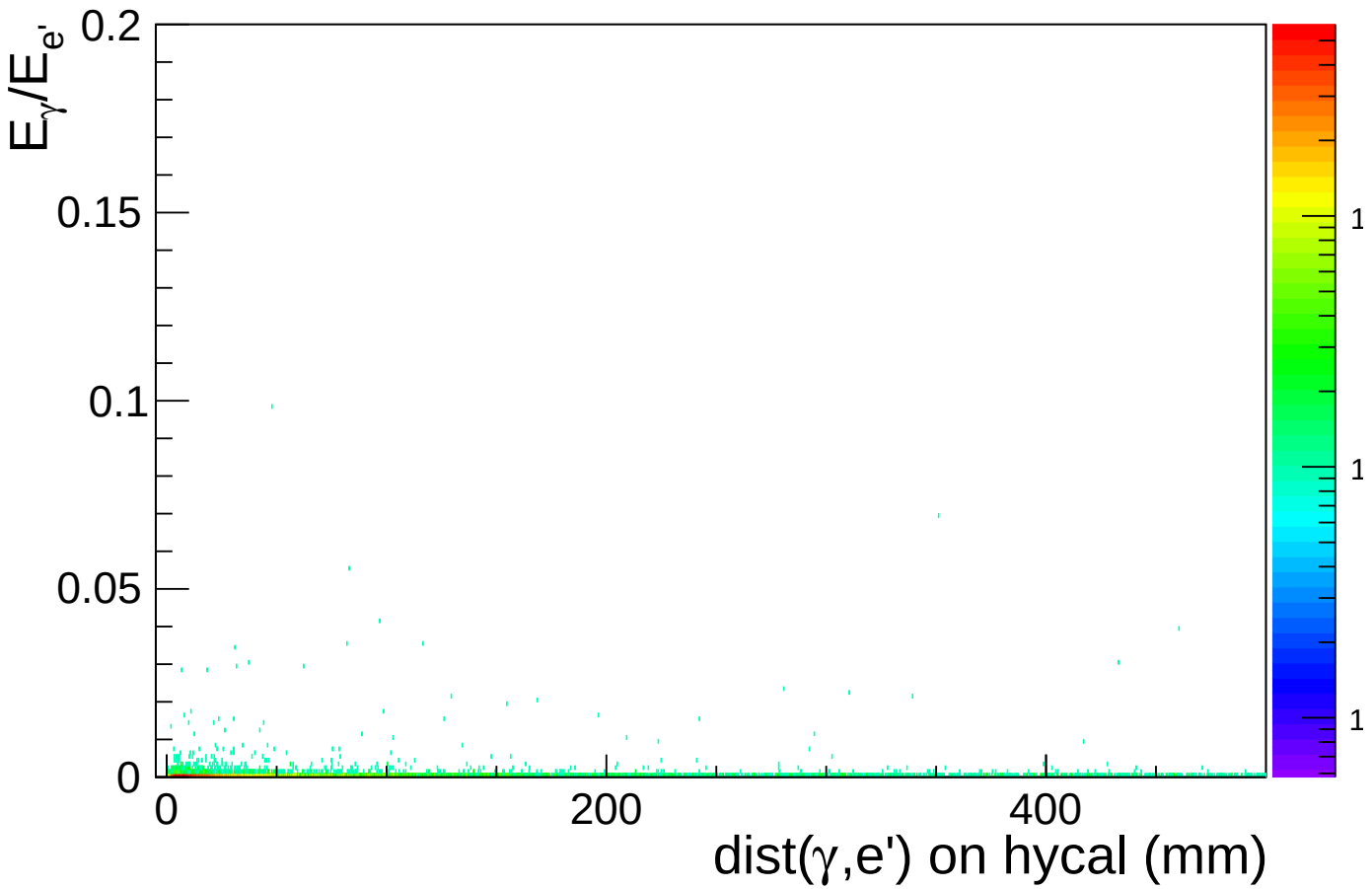
θ difference for 1.1 GeV ep (geant4)



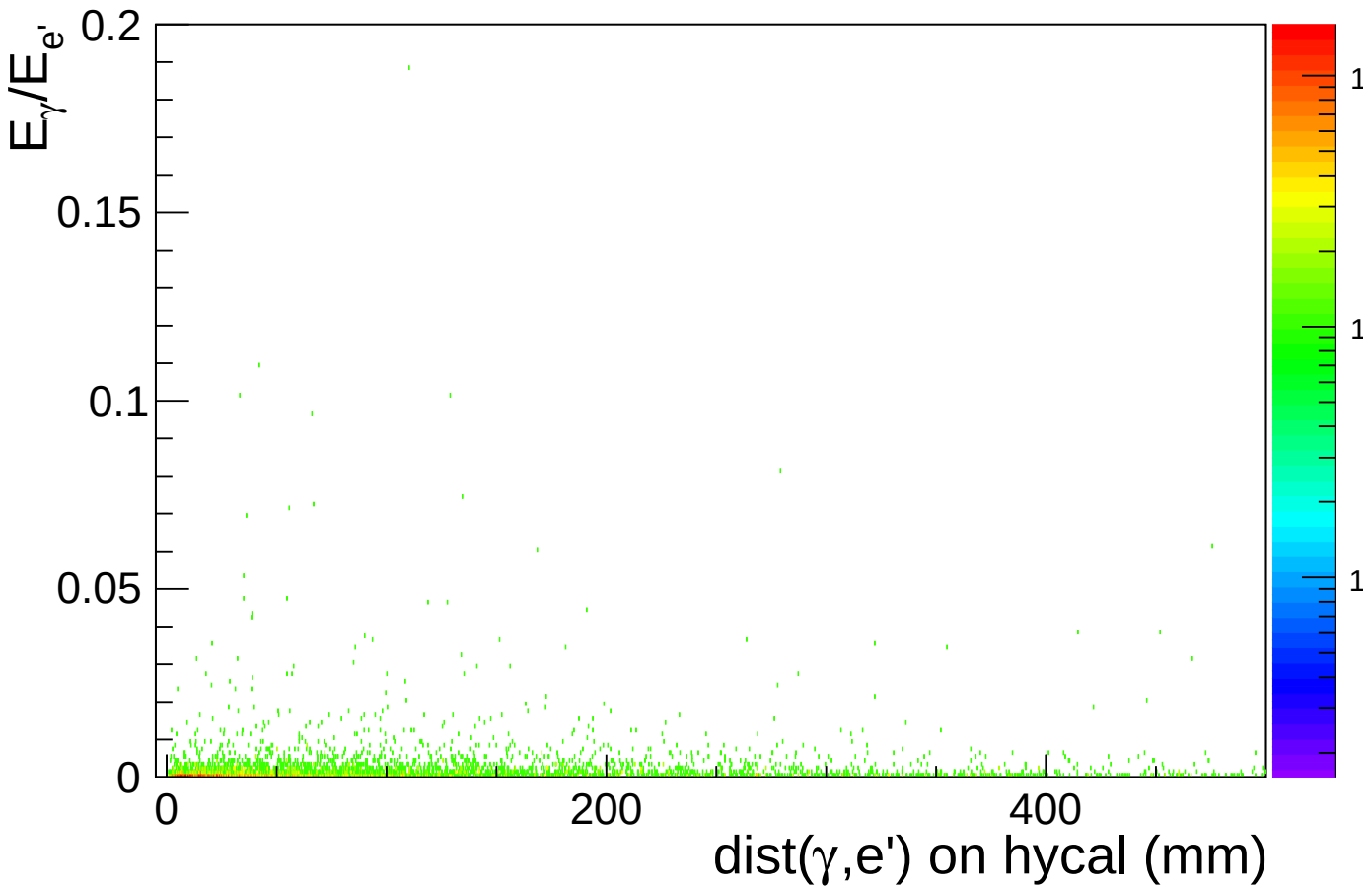
θ difference for 1.1 GeV Møller (geant4)



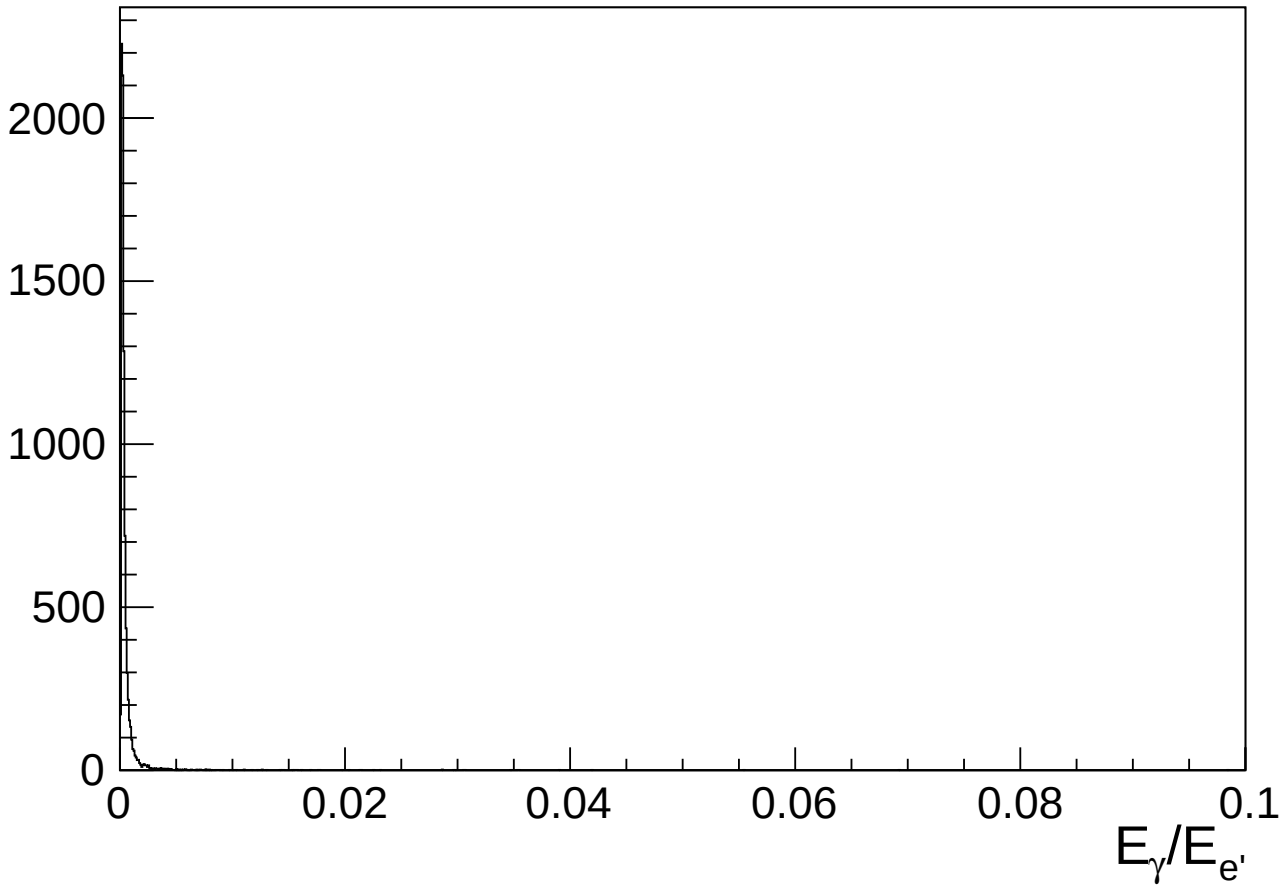
Energy fraction versus distance for 1.1 GeV *ep* (geant4)



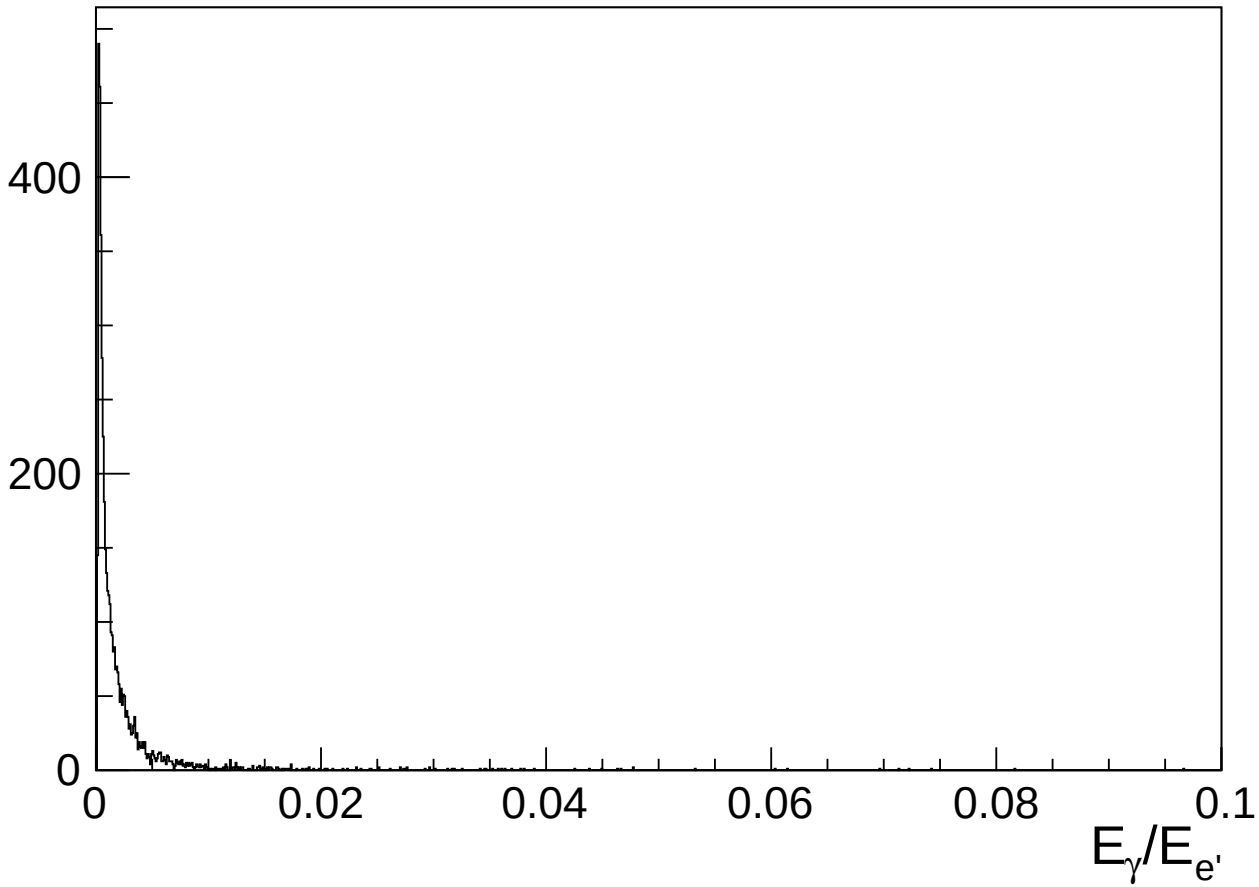
Energy fraction versus distance for 1.1 GeV Møller (geant4)



Energy fraction for 1.1 GeV *ep* (geant4)



Energy fraction for 1.1 GeV Møller (geant4)



Summary

- Possibility to see some radiative photons 3 modules apart the electron cluster center
- Photon energy in the range of HyCal energy resolution

$\rightarrow$ Not much impact on the energy distribution

- Geant4: photons loose a lot of energy in the setup