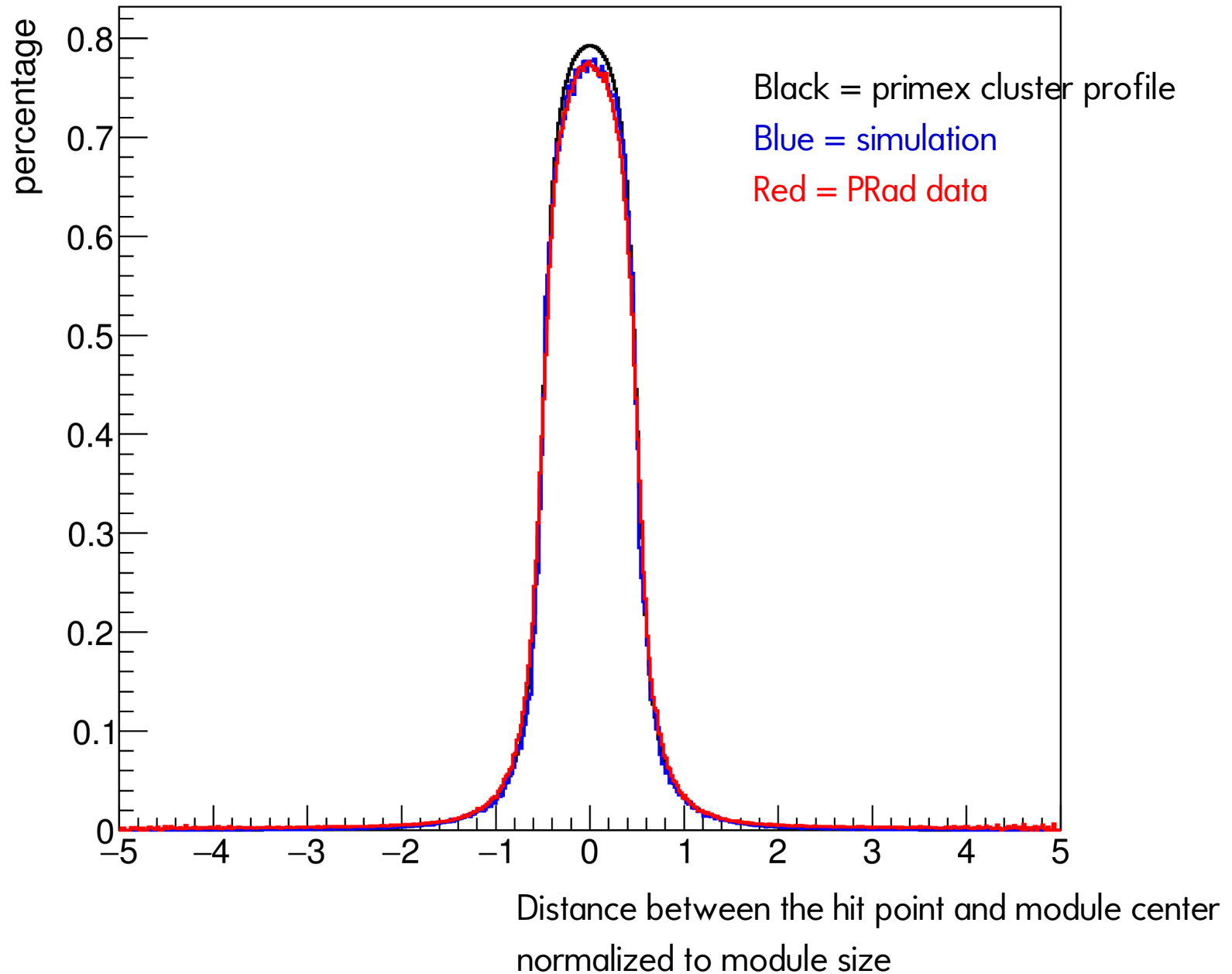


HyCal digitization

Energy deposition in one module
divided by energy of incident electron

cluster profile

Only with elasticity cut: 4 sigma

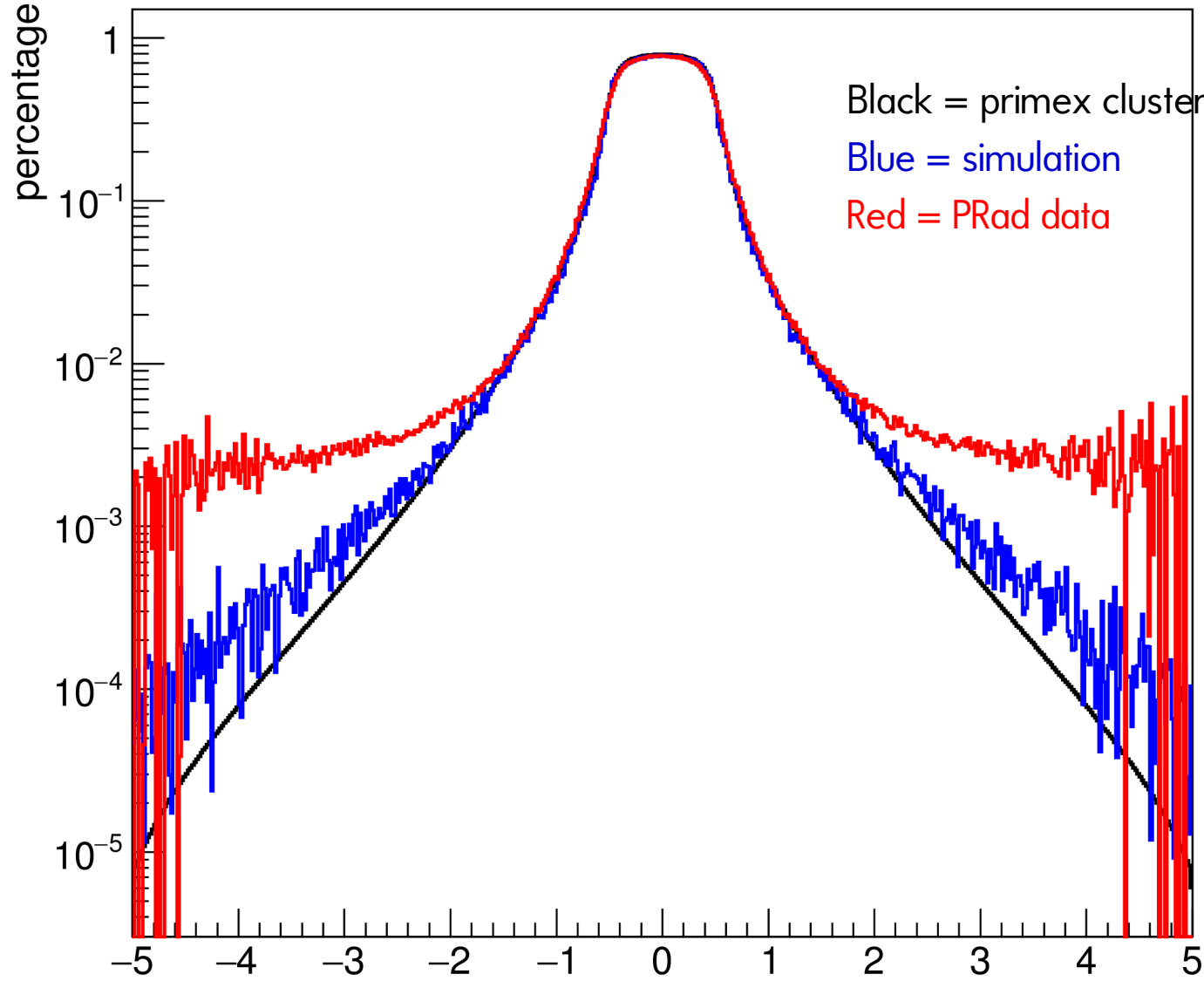


HyCal digitization

Energy deposition in one module
divided by energy of incident electron

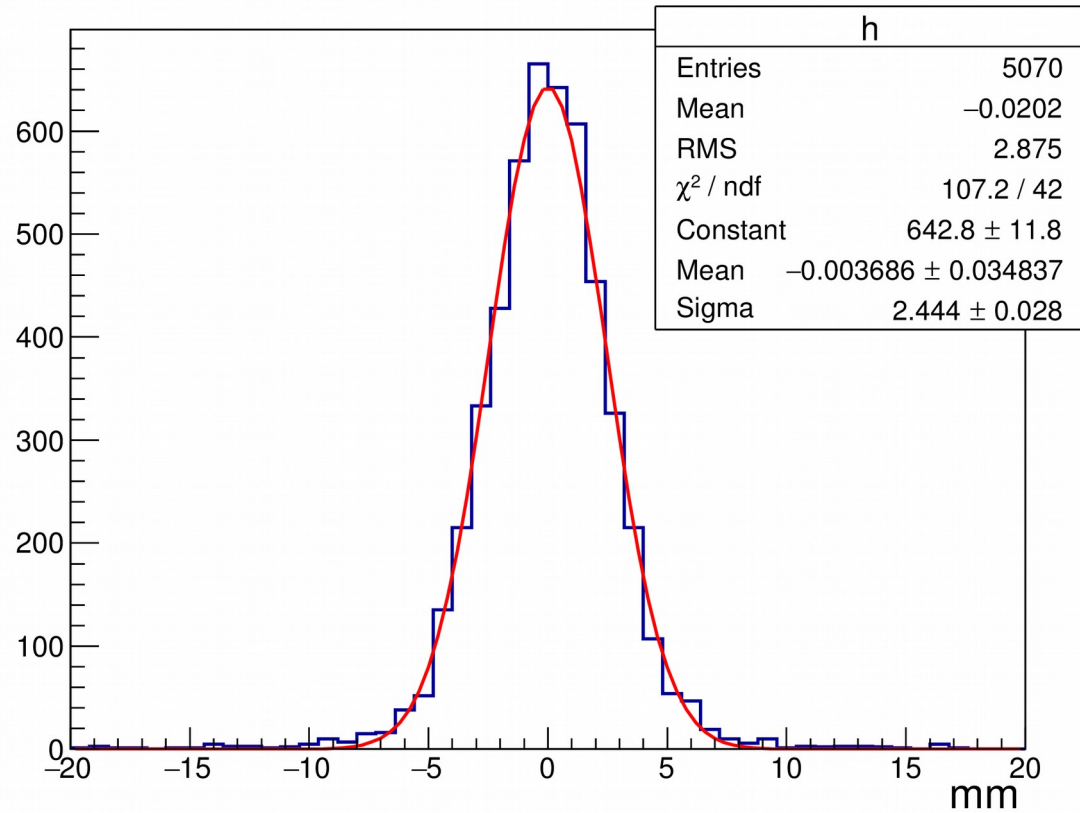
cluster profile

Only with elasticity cut: 4 sigma



Distance between the hit point and module center
normalized to module size

HyCal Space resolution in simulation

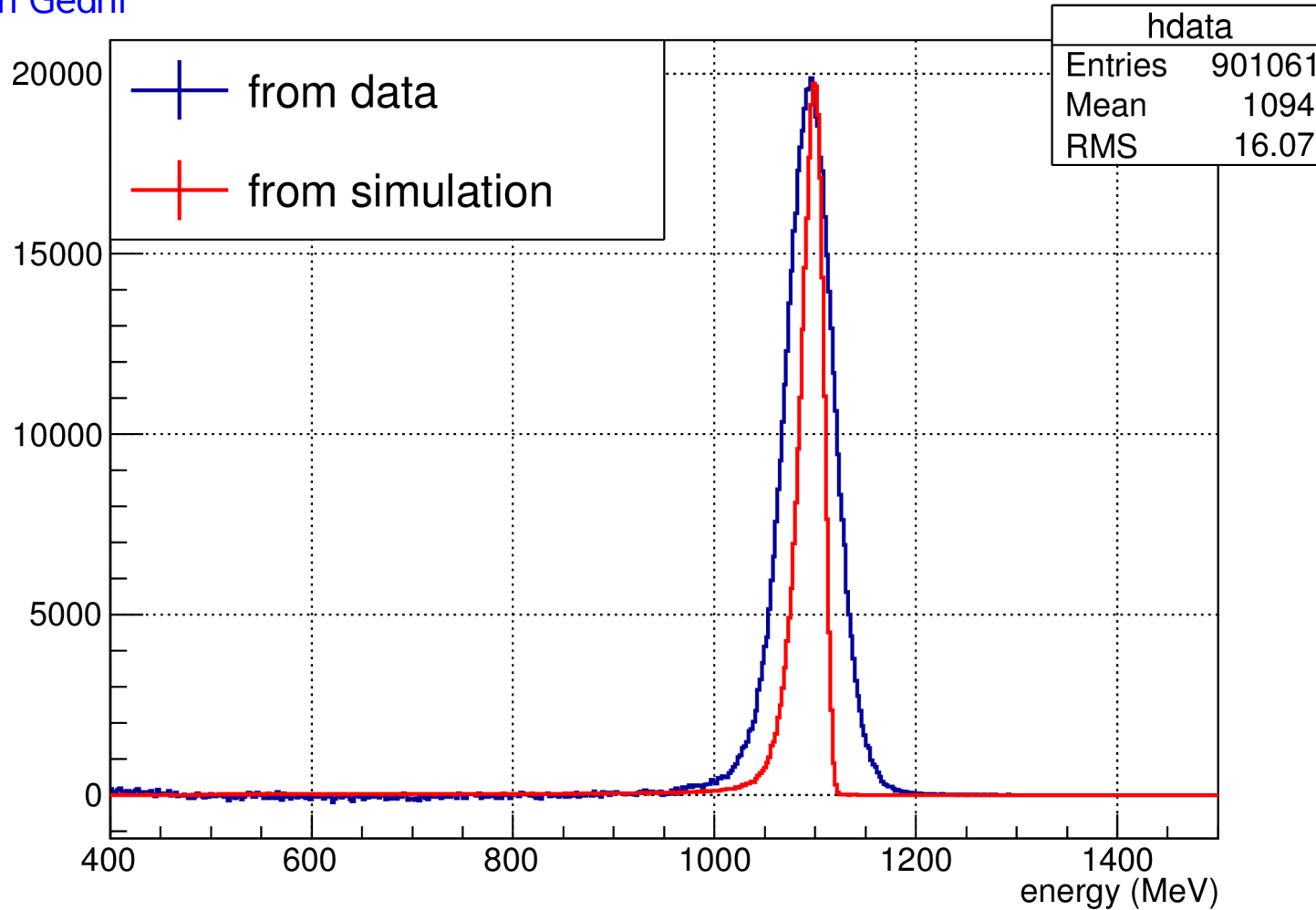


As long as cluster profile match, space resolution should also match

Reconstructed cluster energy, simulation vs data

Only with elasticity cut: 4 sigma

- Take module energy deposition directly from Geant

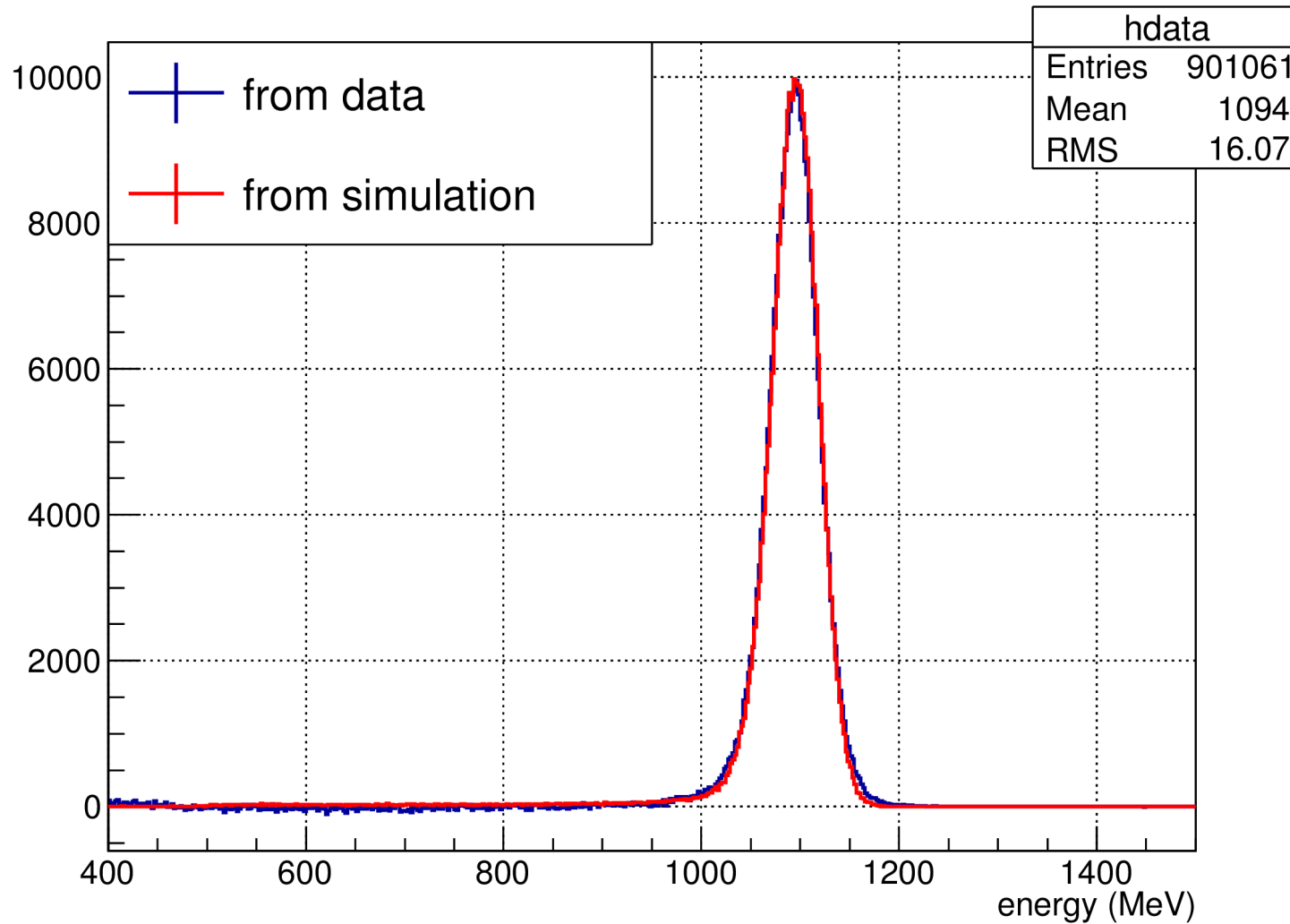


- smear module energy deposit
- smear module constant

Reconstructed cluster energy,
Compare between simulation and data

Smear module energy deposition

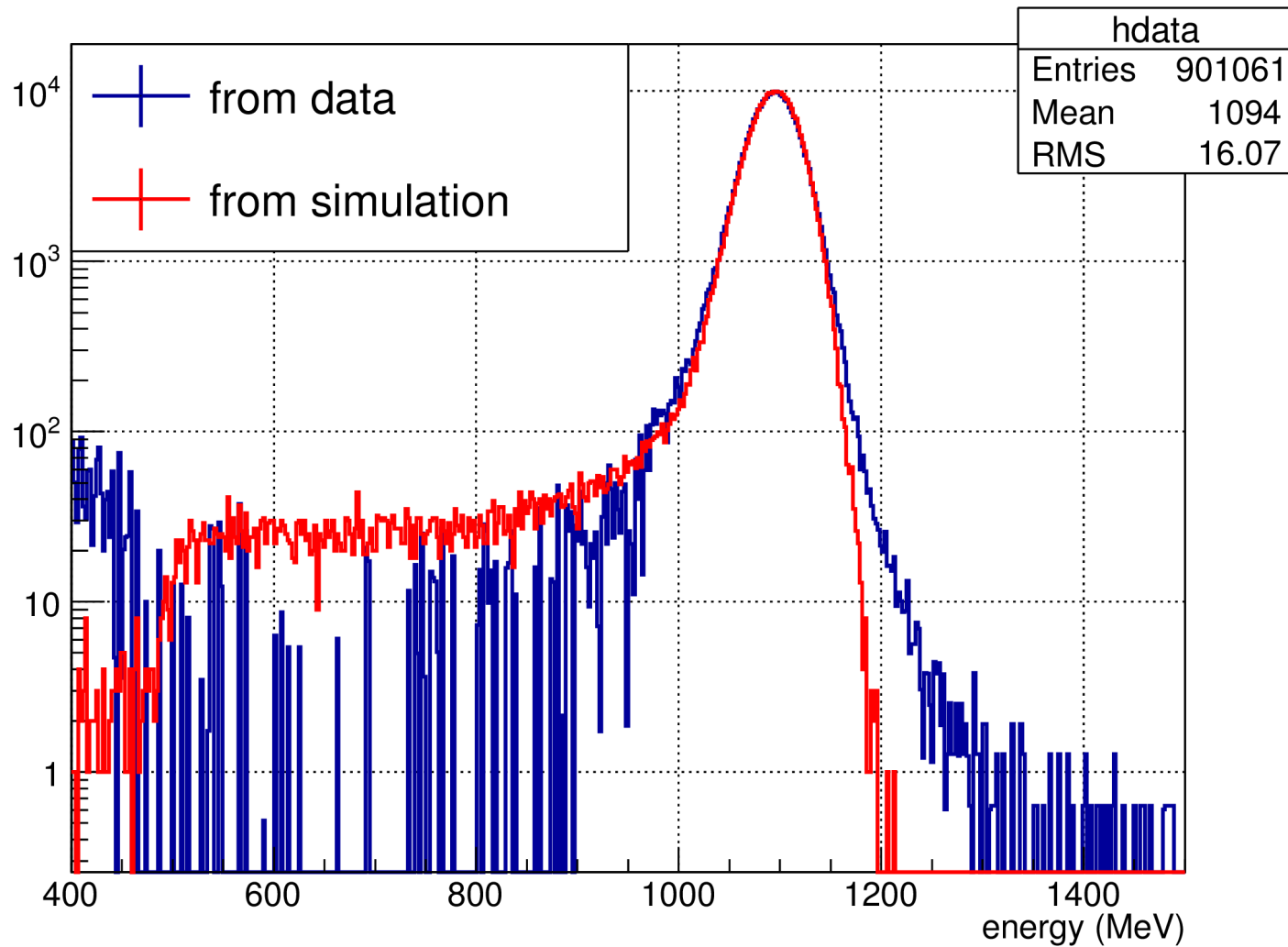
Only with elasticity cut: 4 sigma



Reconstructed cluster energy,
Compare between simulation and data

Smear module energy deposition

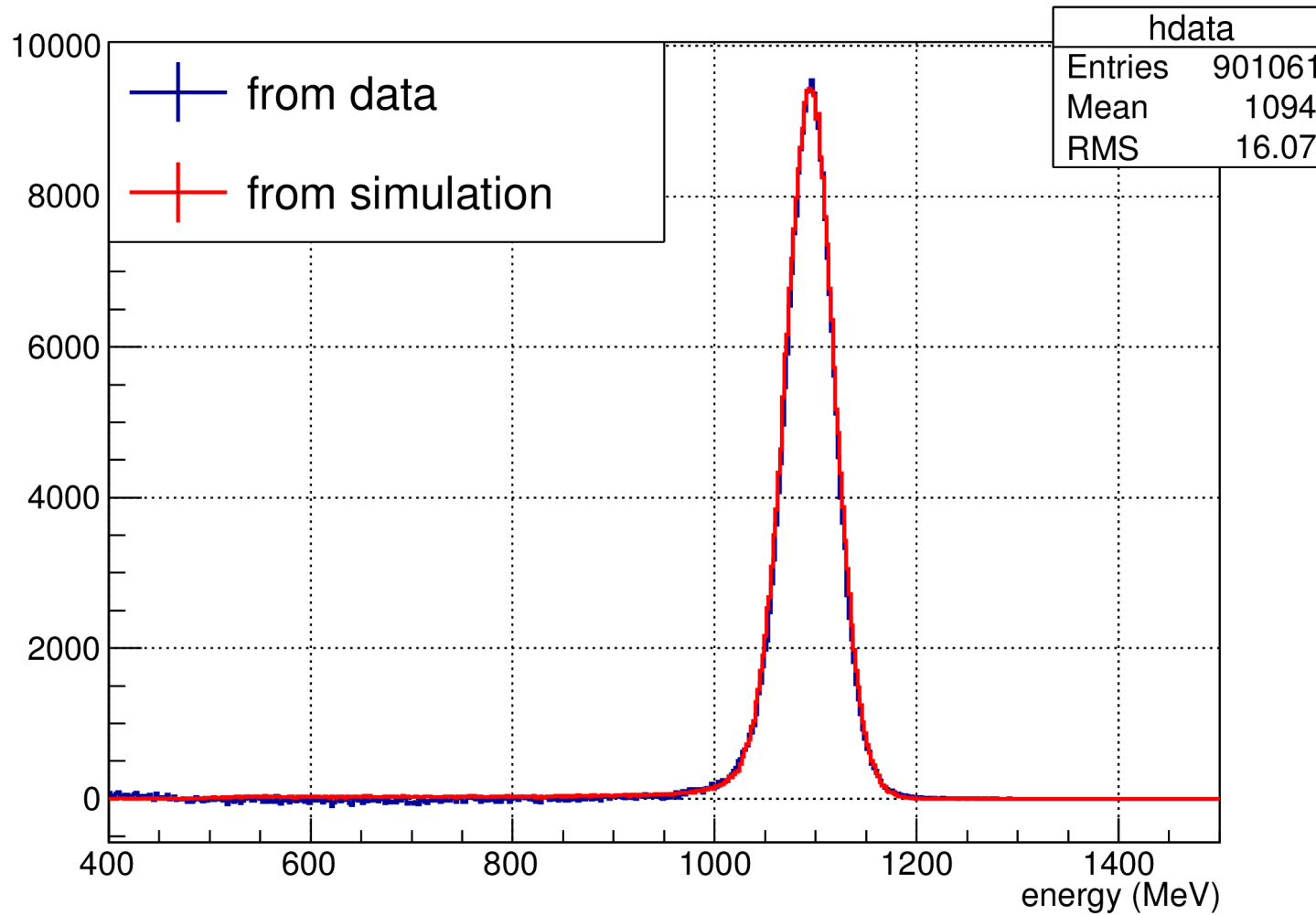
Only with elasticity cut: 4 sigma



Reconstructed cluster energy,
Compare between simulation and data

Smear module calibration constants

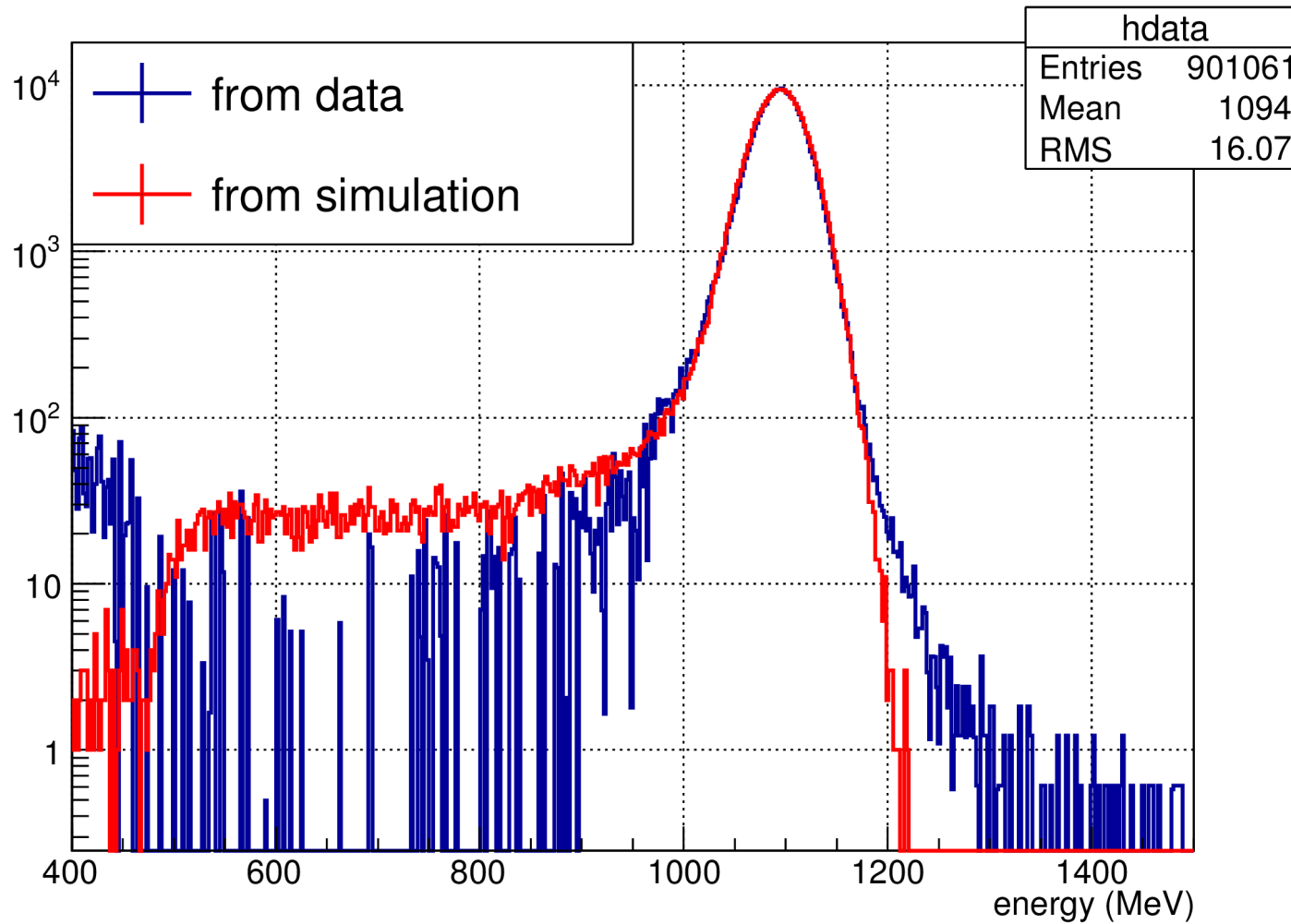
Only with elasticity cut: 4 sigma



Reconstructed cluster energy,
Compare between simulation and data

Smear module calibration constants

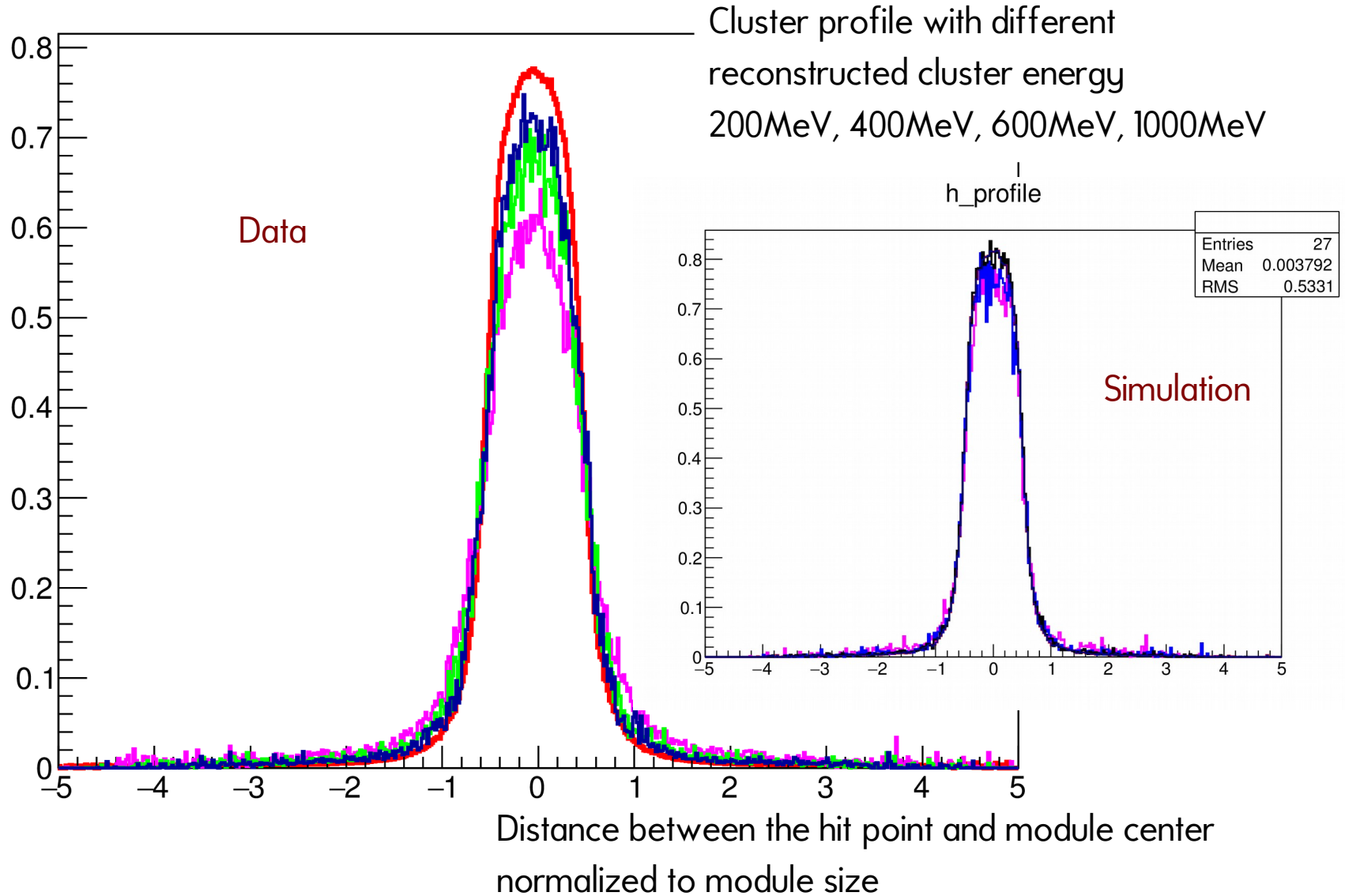
Only with elasticity cut: 4 sigma



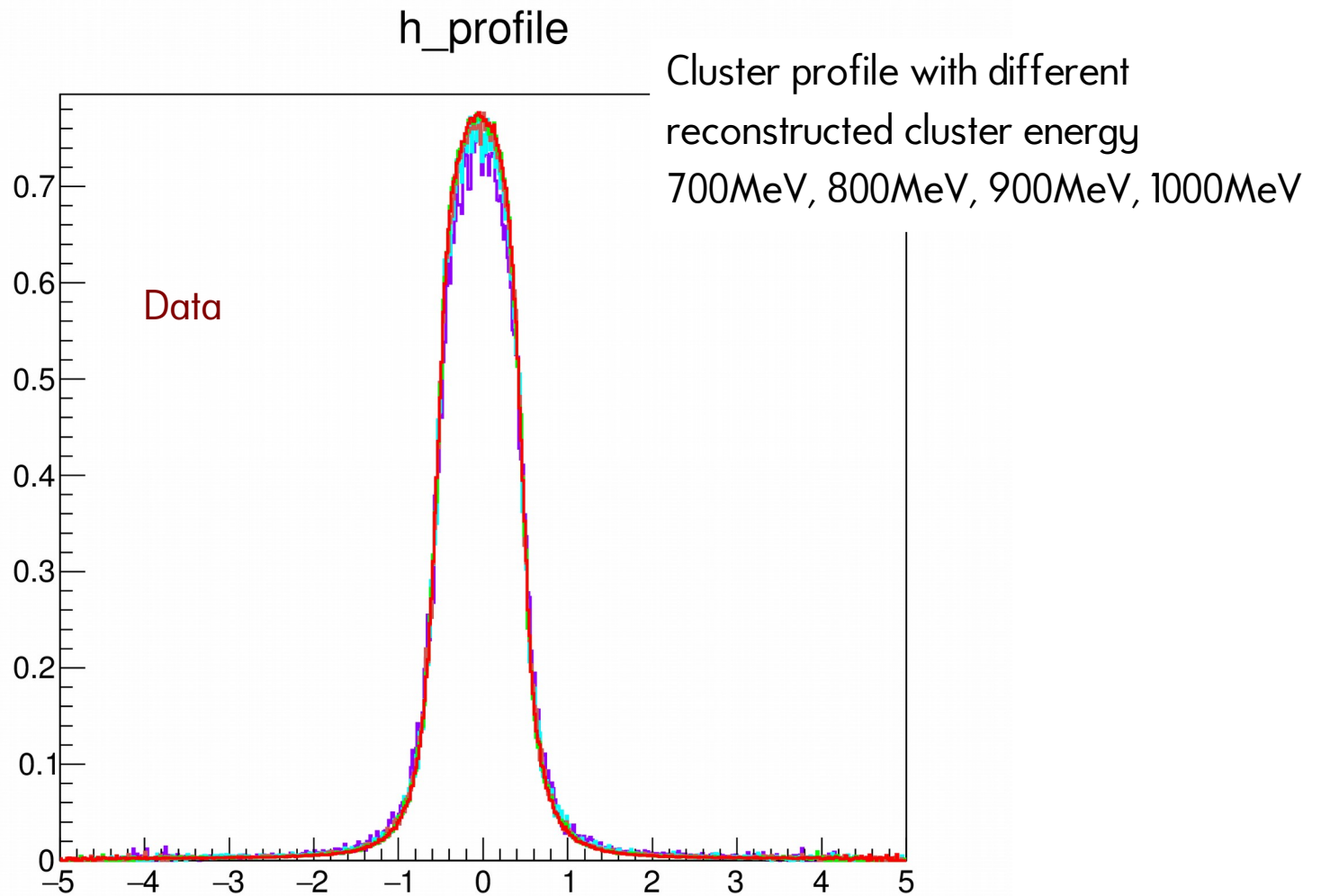
Reconstructed cluster energy,
Compare between simulation and data

Cluster profile <700MeV

h_profile



Cluster profile $>700\text{MeV}$



Distance between the hit point and module center
normalized to module size

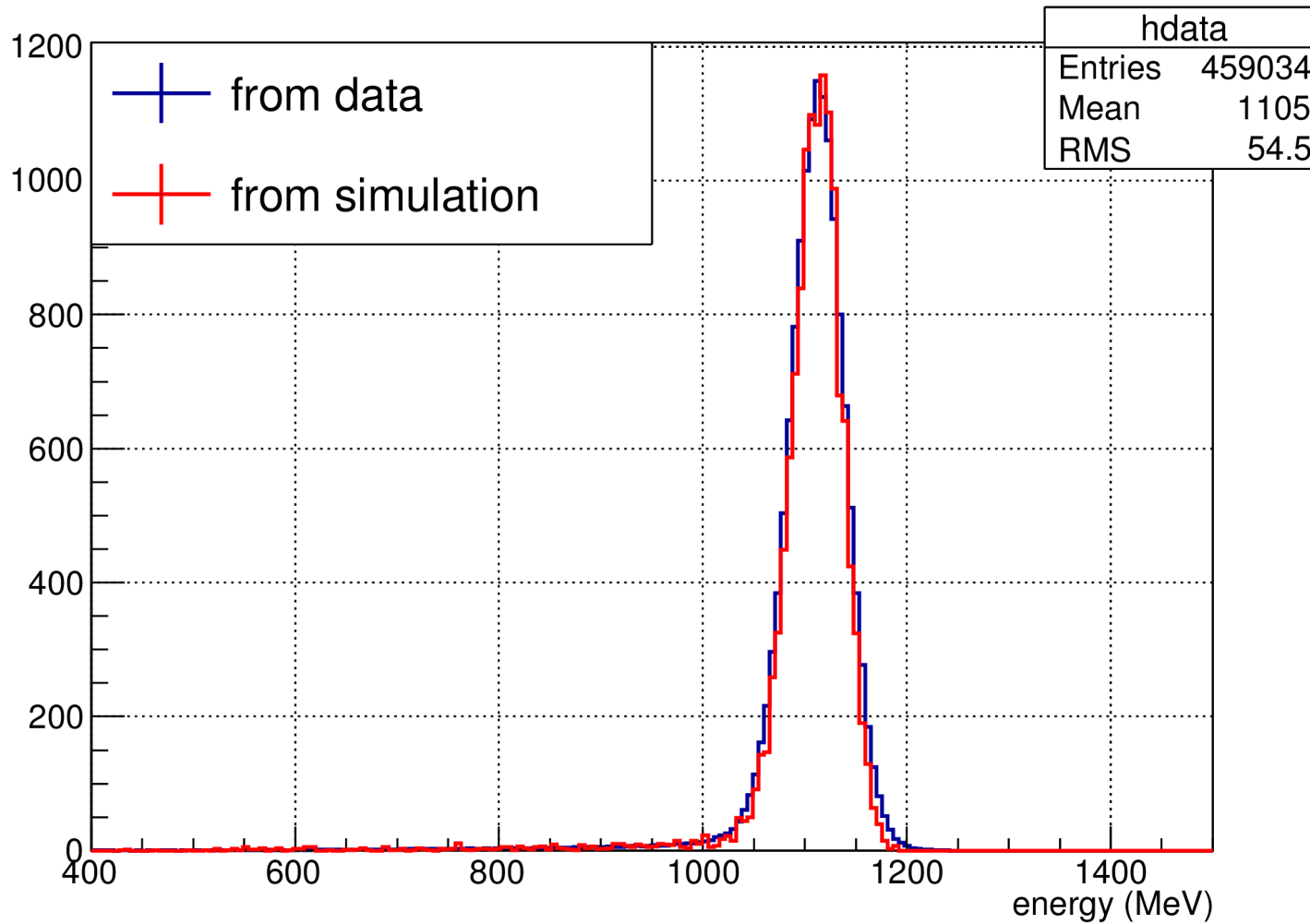
Double arm moller

Two clusters

energy cut: 4 sigma

Coplanarity cut: +/- 10 deg

Distribution of E1 + E2



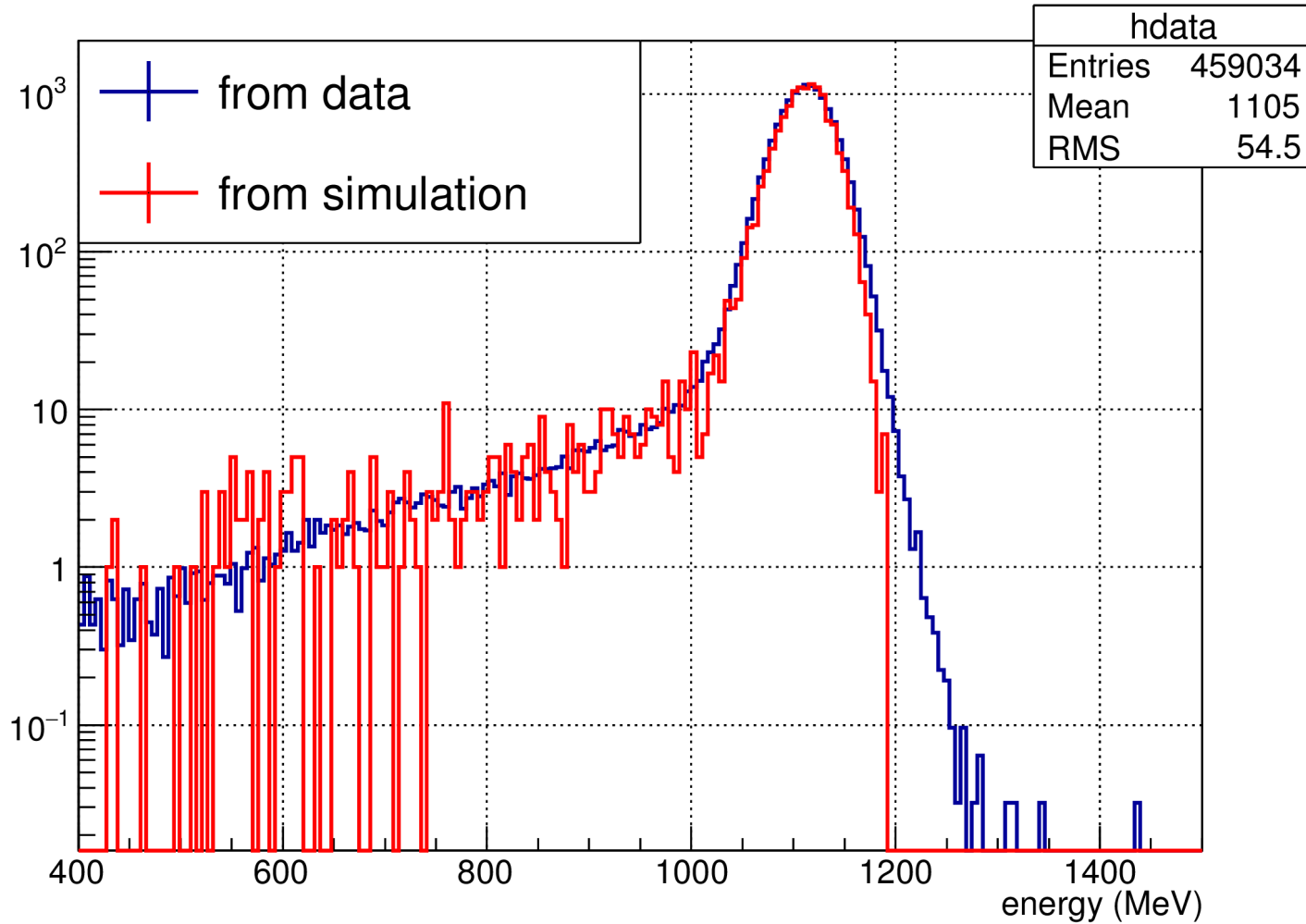
Reconstructed cluster energy,
Compare between simulation and data

Double arm moller

energy cut: 4 sigma

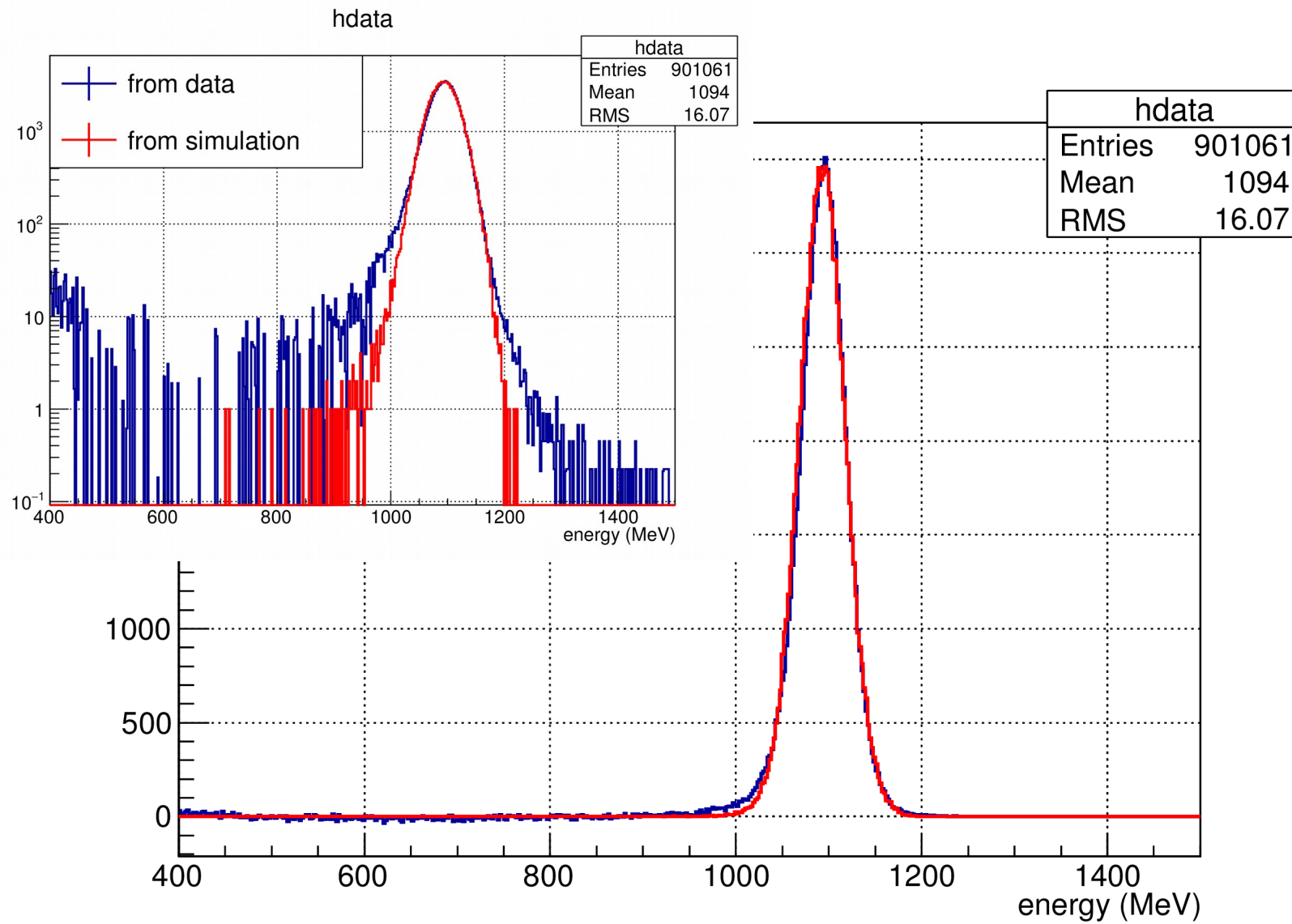
Coplanarity cut: +/- 10 deg

Distribution of E1 + E2



Reconstructed cluster energy,
Compare between simulation and data

Without radiation effect



With radiation effect

