LG part of cross-section in the data

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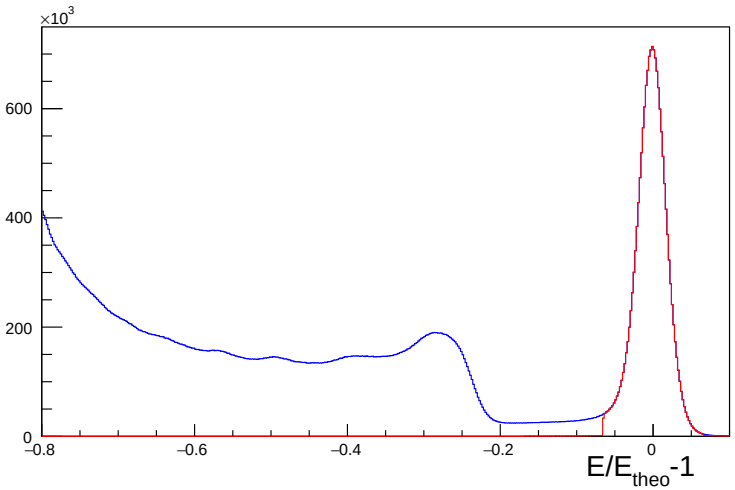
Selection

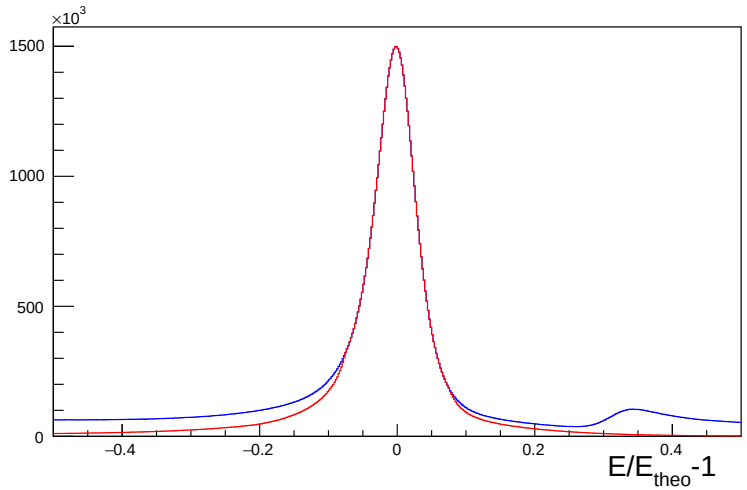
- event selection according to beam current, target pressure...
- fiducial cuts:
  - clusters with center in first and last layers not taken into account
  - 2.075 cm/3.815 cm around center of dead modules removed
- single electron (with GEM coordinates):
  - $\theta > 0.7$ deg
  - $|E_{cluster}/E_{theo} - 1| < 4 \cdot 0.024/\sqrt{E_{theo}}$ (0.065 for LG)
- double electron:
  - $\theta > 0.7$ deg or $\theta > 0.6$ deg for hybrid method
  - $|\Delta\phi - 180| < 5$ deg or $|\Delta\phi - 180| < 10$ deg for hybrid method
  - $|E_1 + E_2 - E_{beam}| < 4 \cdot \sqrt{0.024^2 \cdot E_1 + 0.024^2 \cdot E_2}$ (0.065 for LG)
  - $|z_{vertex}| < 150$ mm for GEM coordinates or $|z_{vertex}| < 500$ mm for hybrid method
  - then single eletron selection with GEM coordinates

Single Cluster Distributions

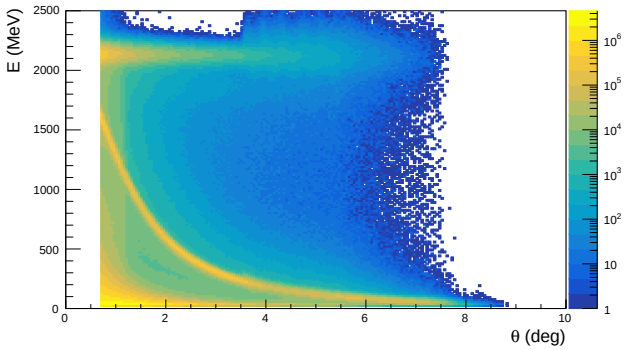
ep elasticity



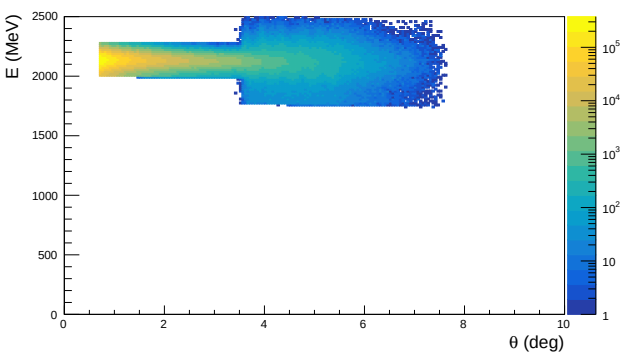
ee elasticity



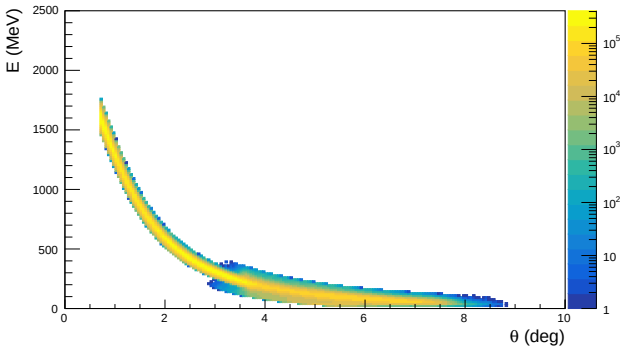
raw E vs θ



ep E vs theta

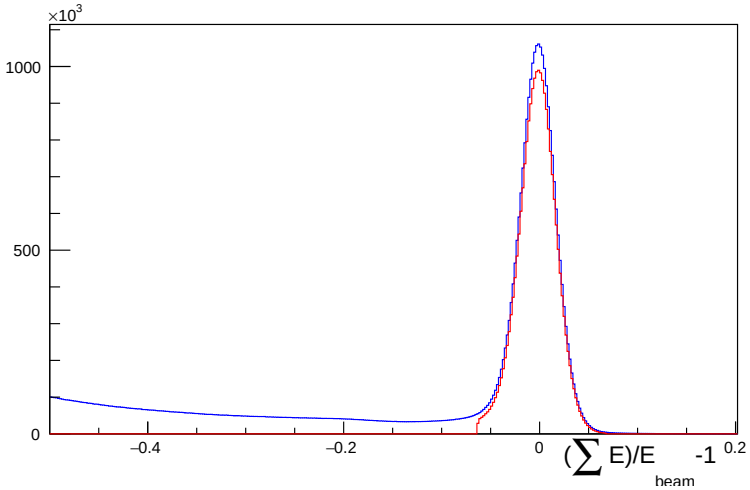


ee E vs theta

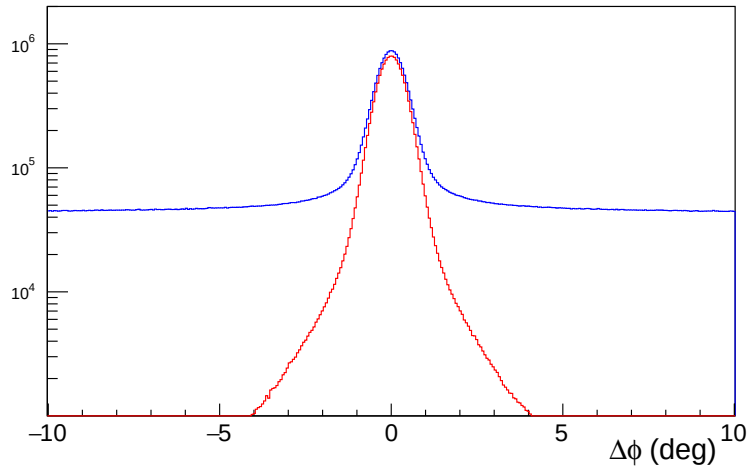


Hybrid Method Distributions

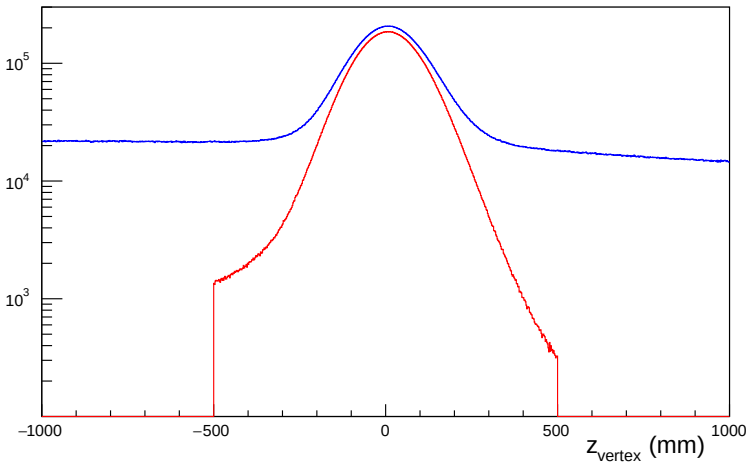
elasticity



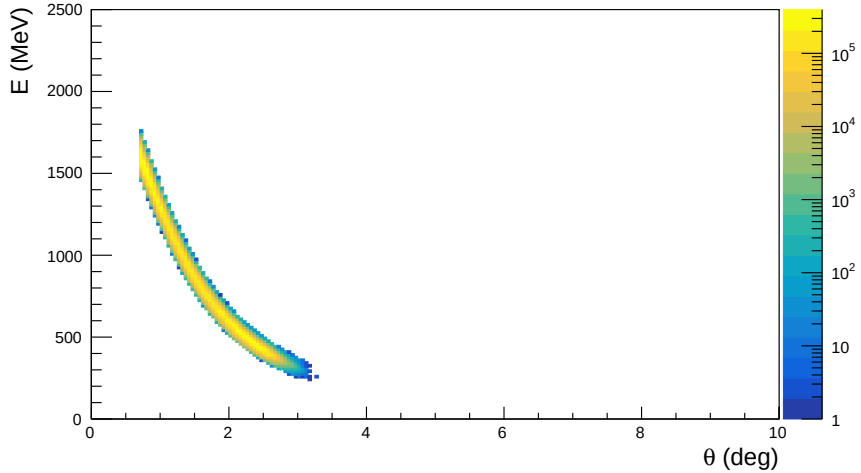
$\Delta\phi - 180$



z_{vertex}



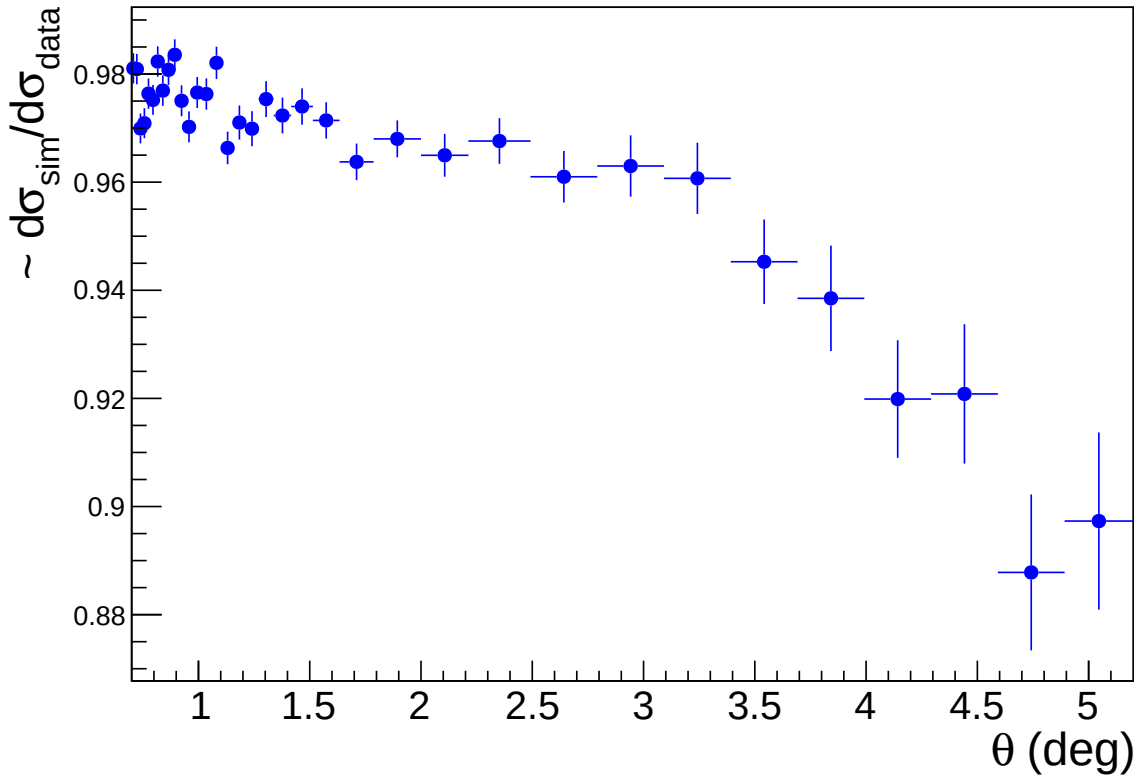
E vs theta



Issue

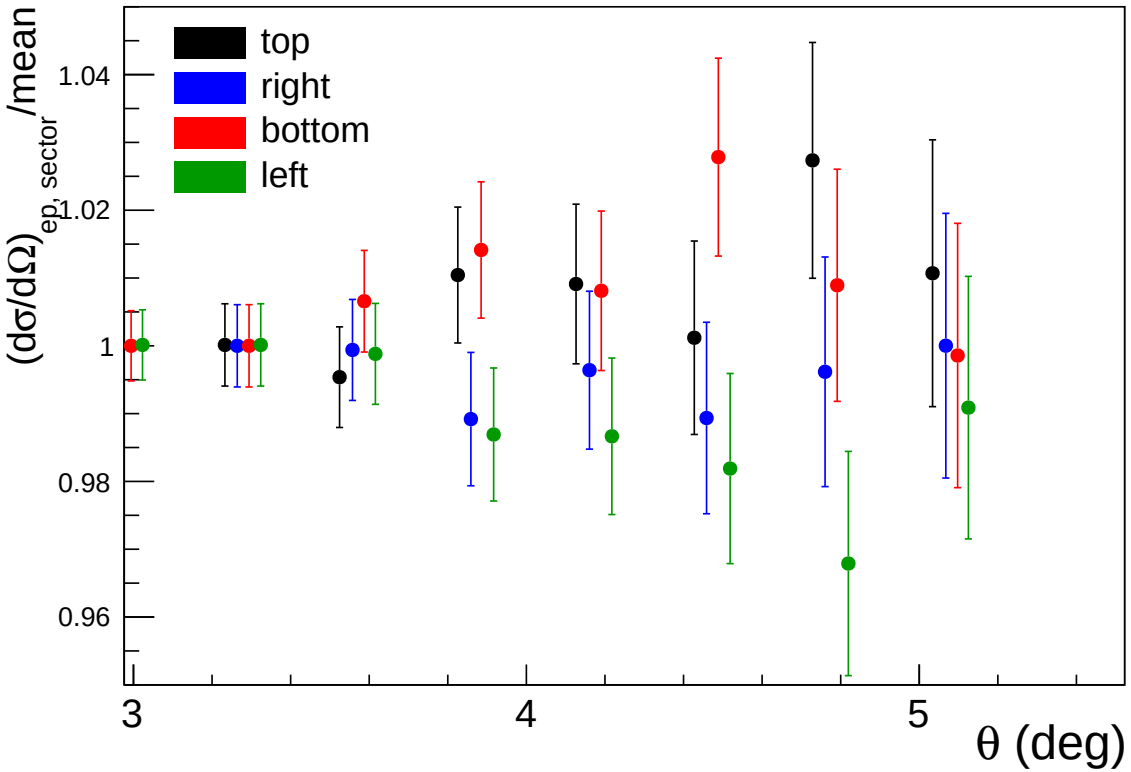
- Cross-section increases in LG in data compared to simulation (cross-check of Weizhi's observation)

ratio of ep/integrated(ee) between simulation and data



Cross-sections for different LG sectors

ratio of ep cross-section by LG sector over the average



- Cross-section of different sectors agree within uncertainties (statistical + efficiency uncertainty)

Summary

- No ϕ dependency on LG cross-section
- Waiting for CPU time to check on overlap LG/PWO region