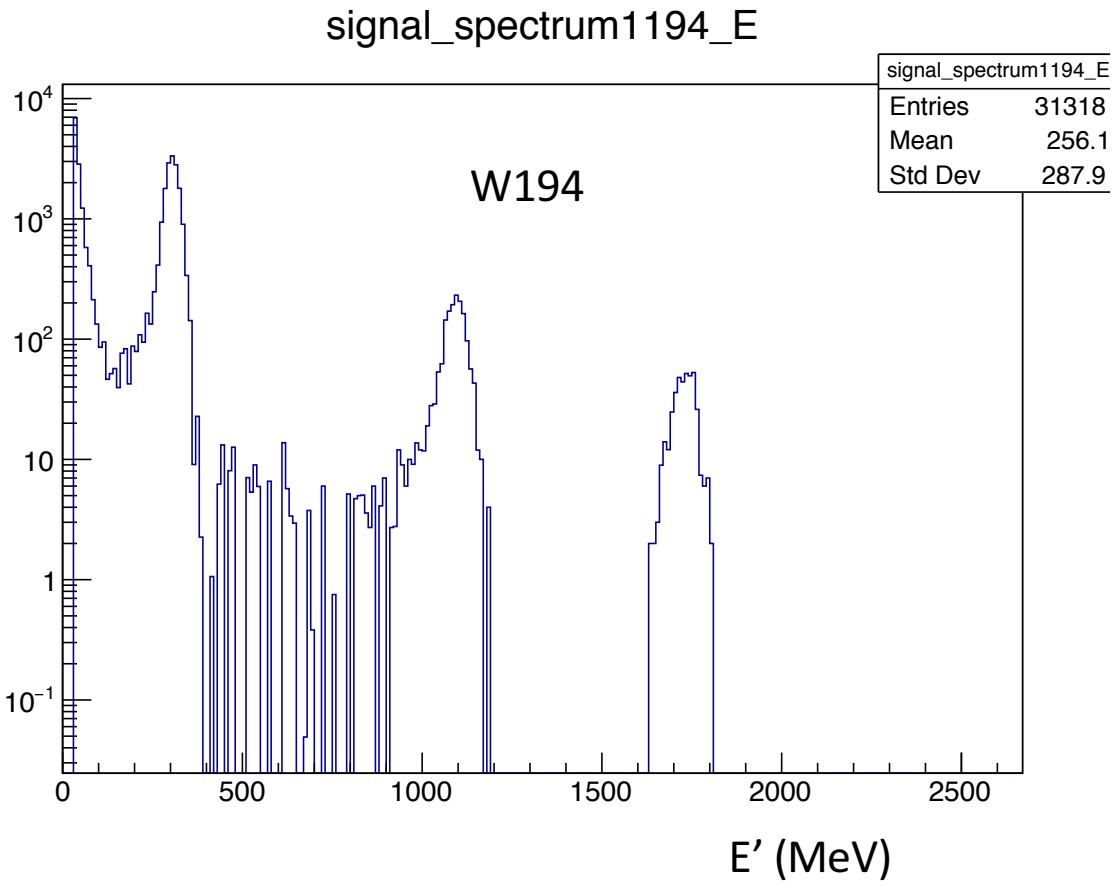
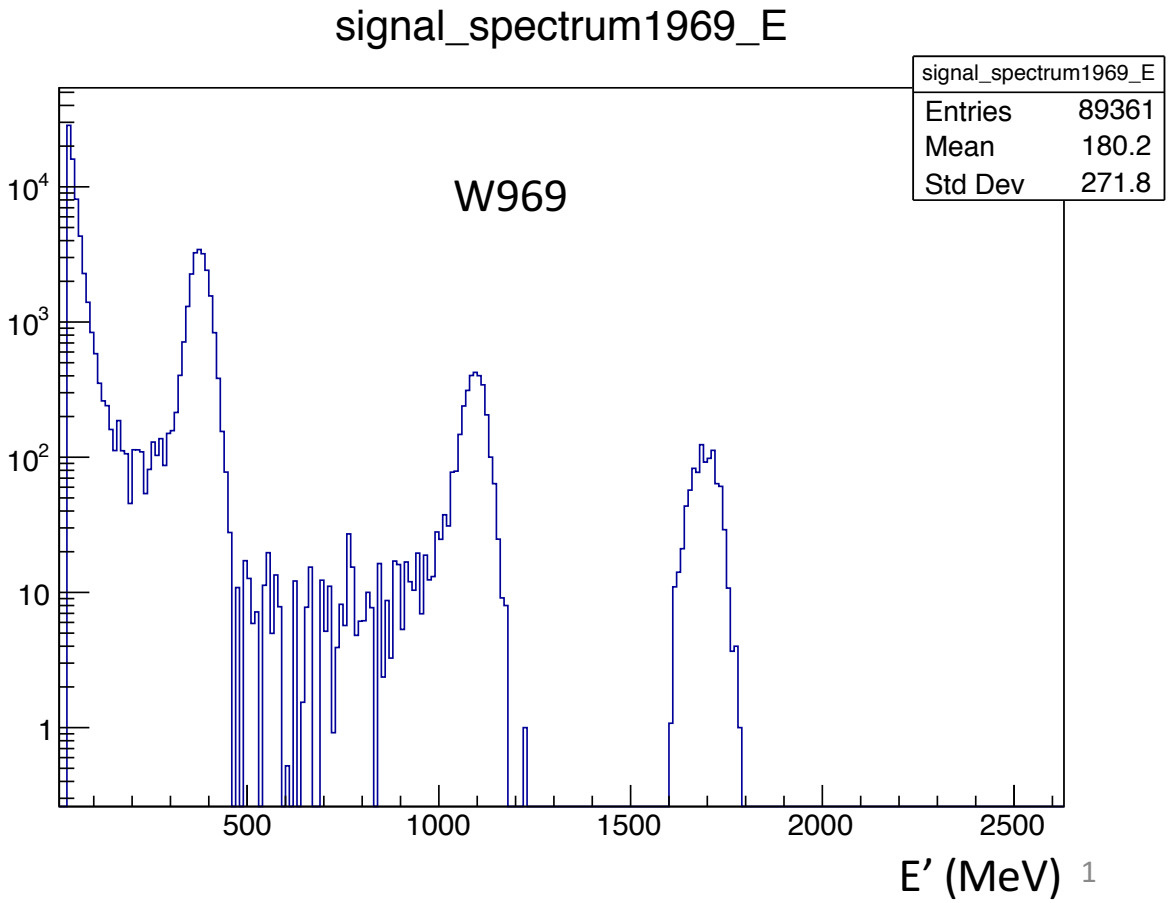
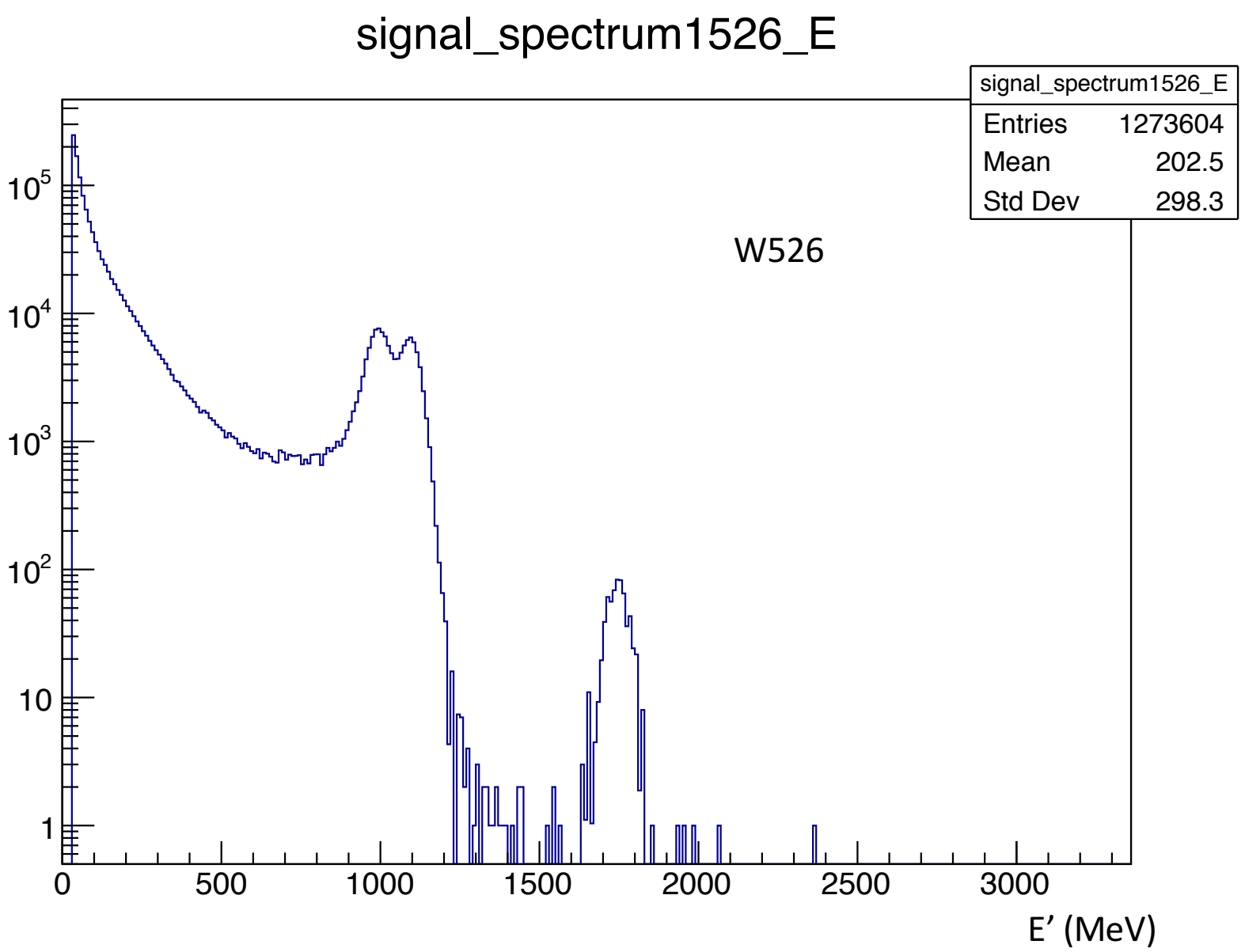
1GeV overflow problem

- Once an ADC channel has a overflow problem, its output is always 16000 ADC, which means the overflow event is going to pile-up at a fix location for each module
- There are three modules have significant overflow problem for 1GeV data



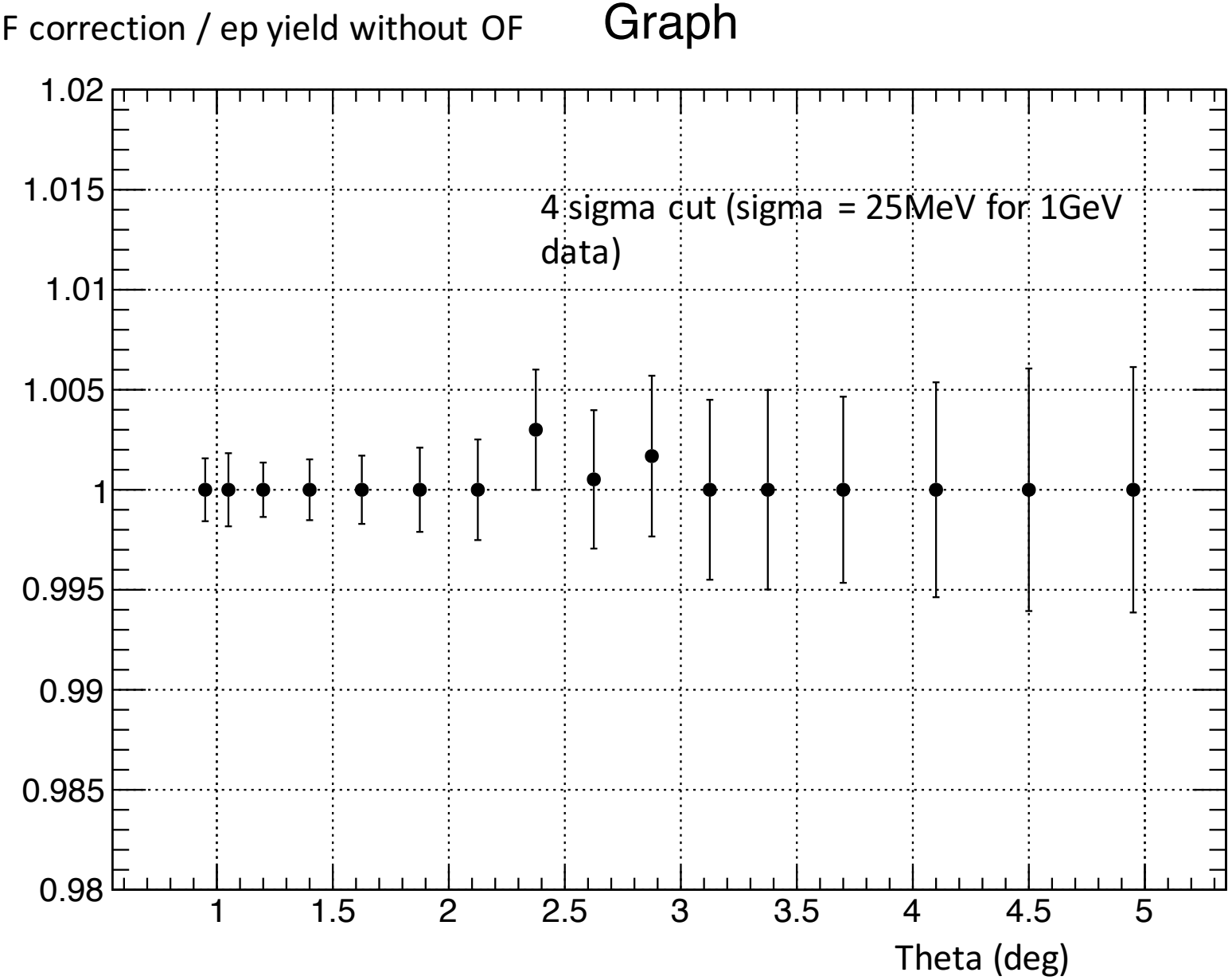


1GeV overflow problem



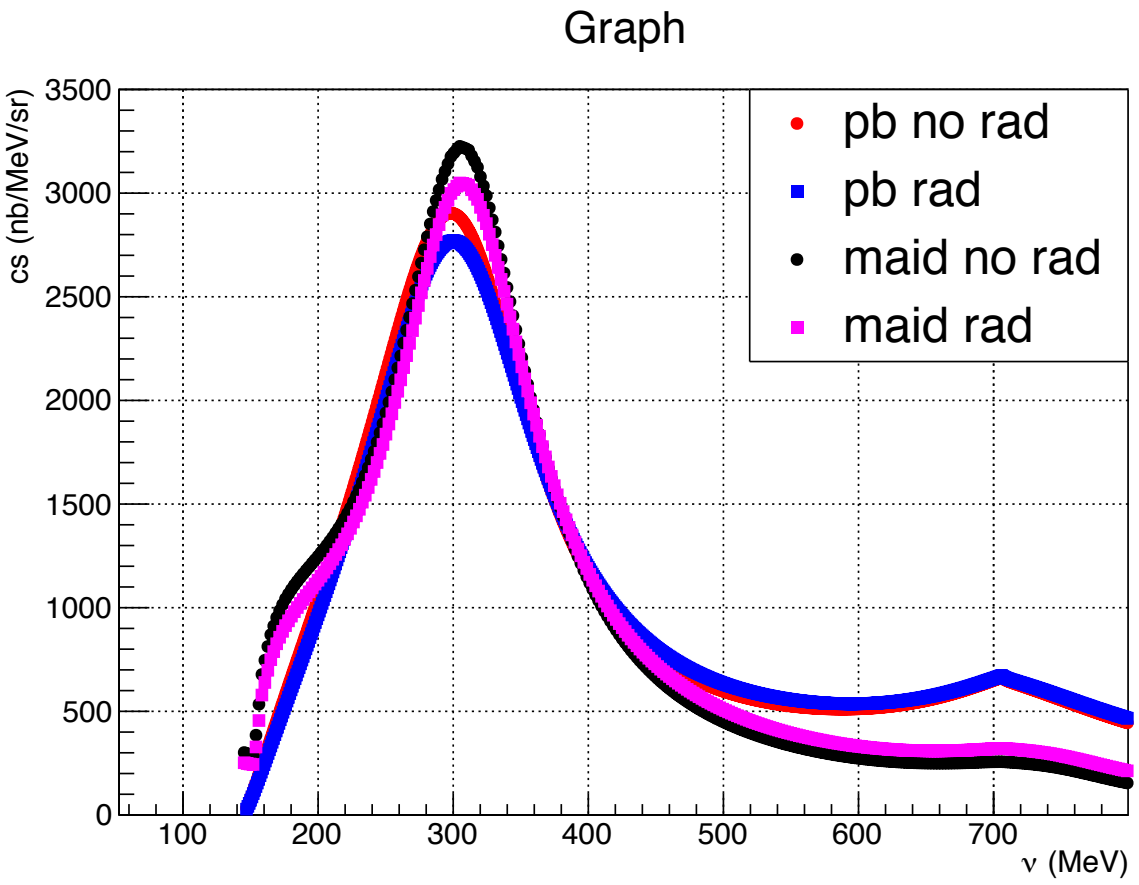
1GeV overflow problem

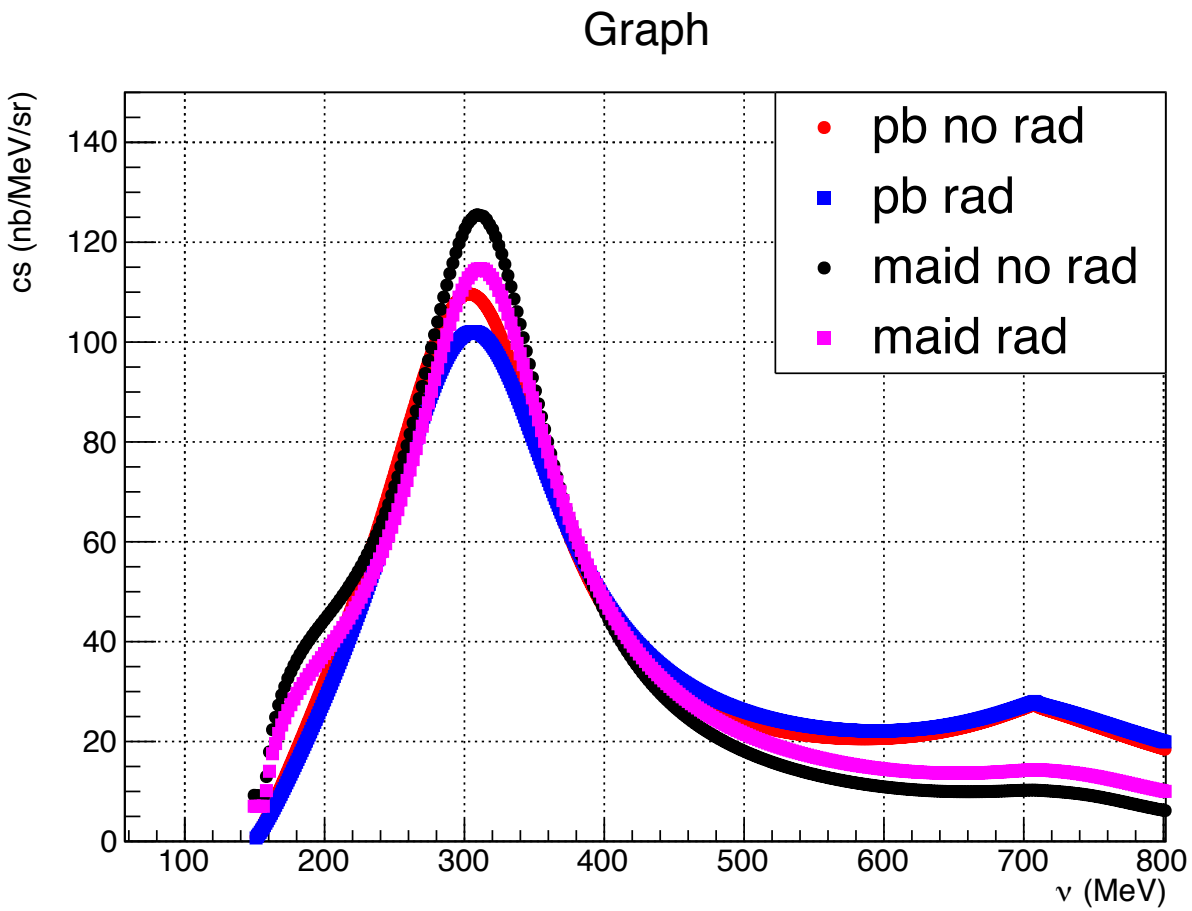
ep yield with OF correction / ep yield without OF



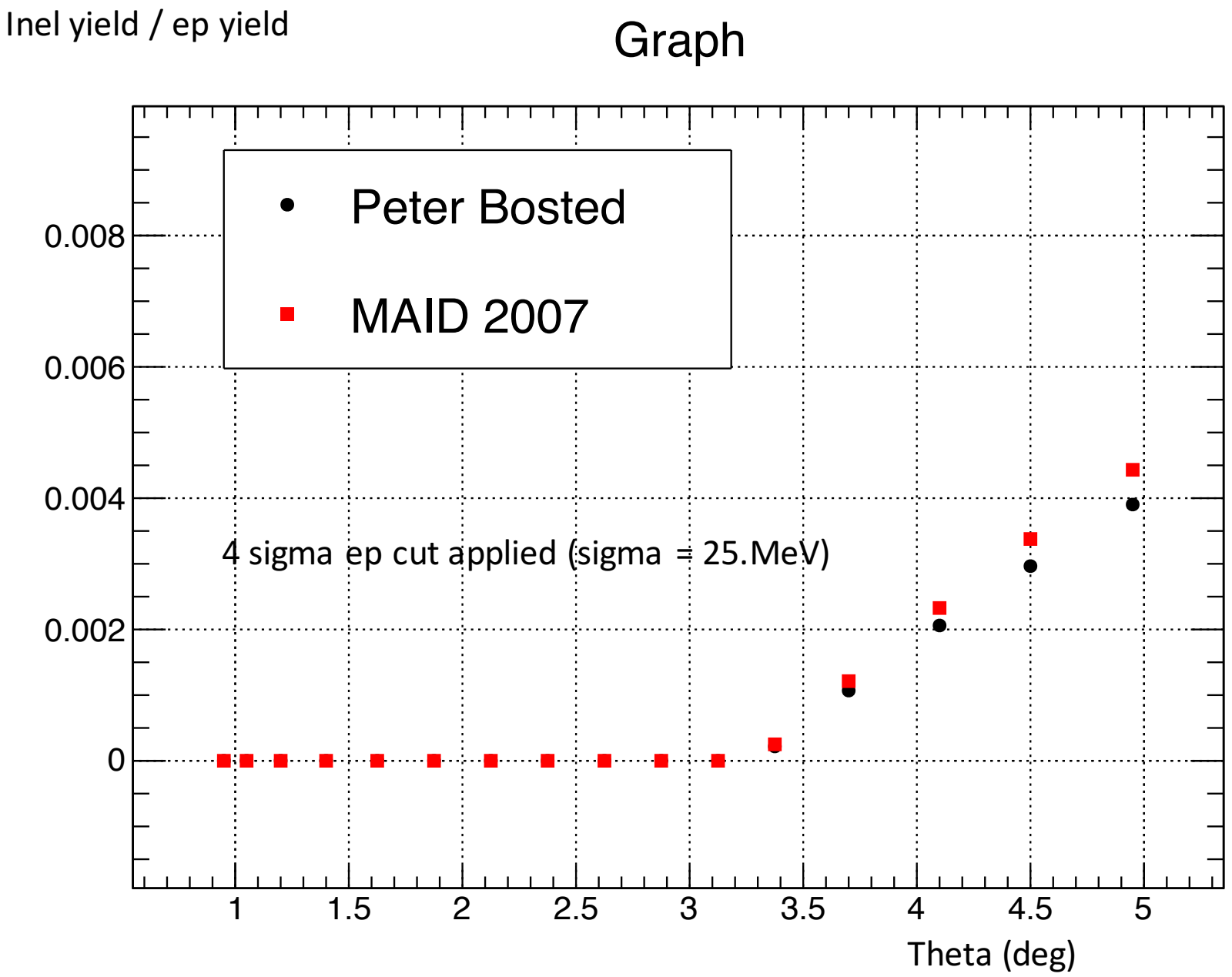
1GeV inelastic ep

- For 1GeV, MAID also give roughly 15% larger delta peak compared to Peter Bosted at all angle





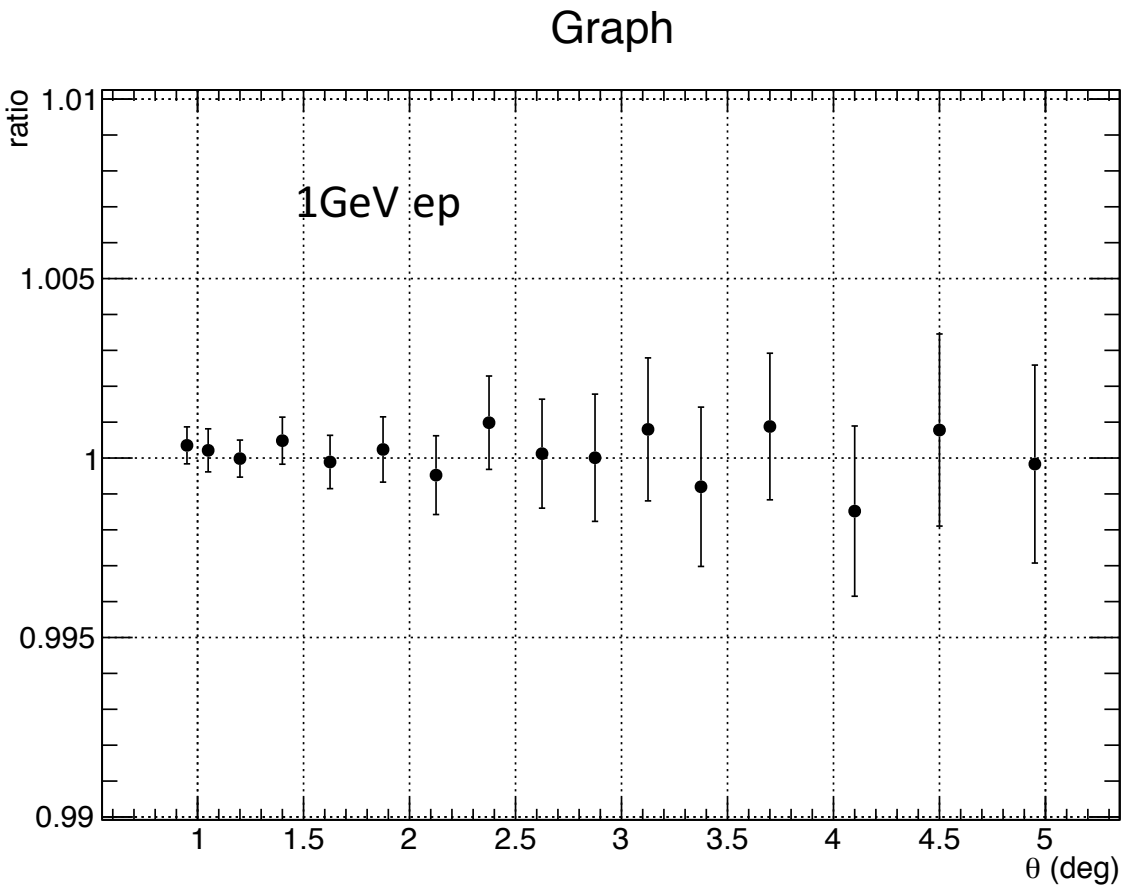
1GeV inelastic ep

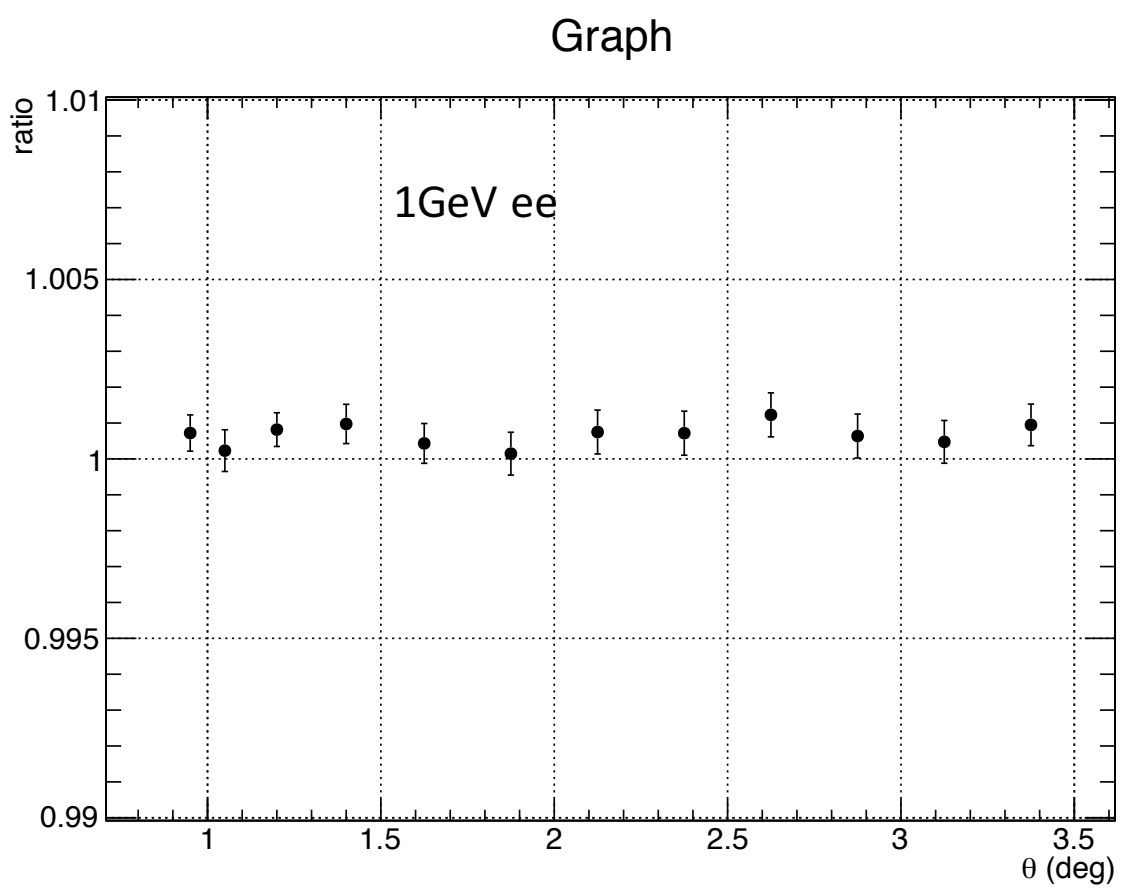


Effect of brass face plate

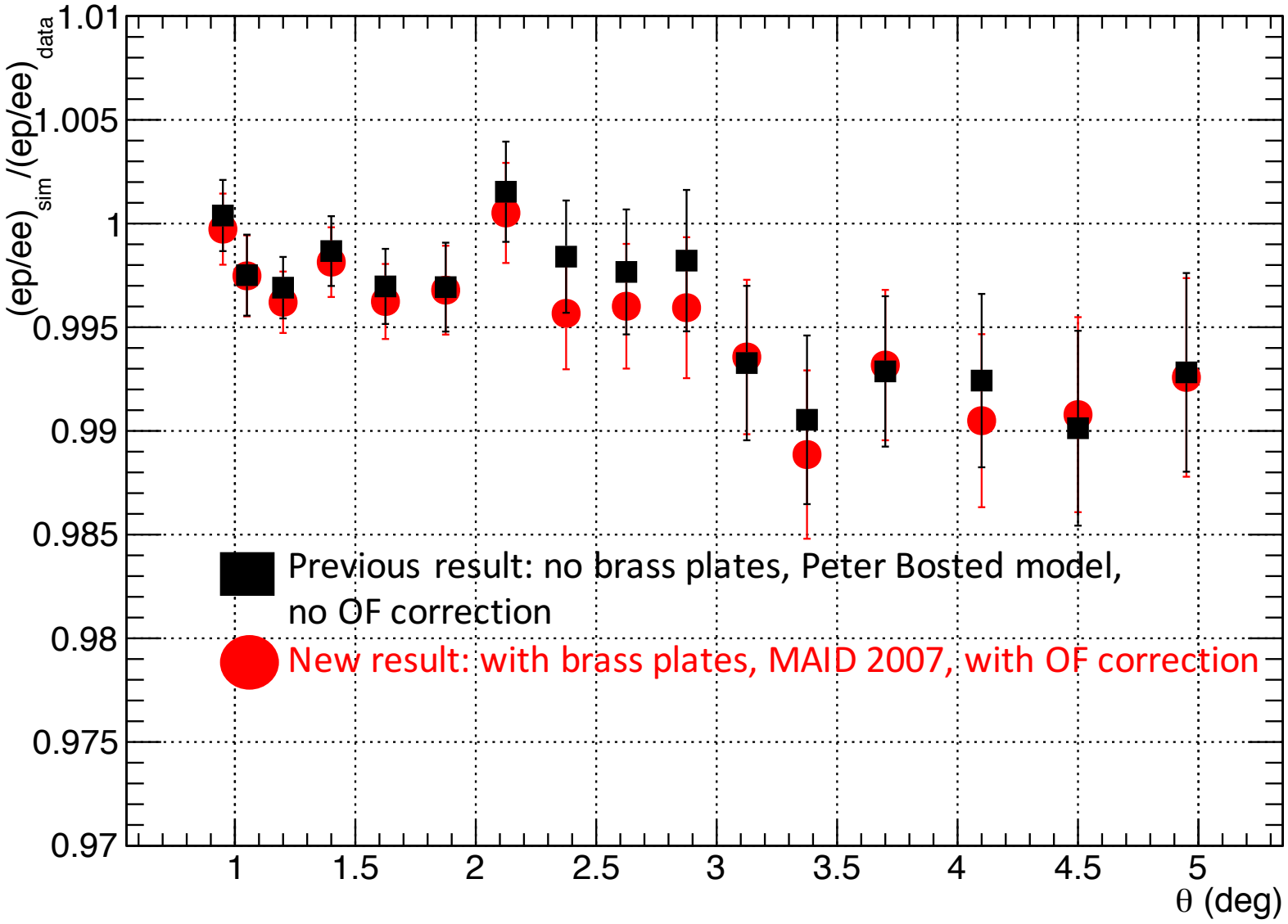
- Similar to 2GeV, the brass face plates only slightly shift the elastic peak a bit, after MC calibration, there is almost no effect on the yields

Yields with face plates / Yield without face plates

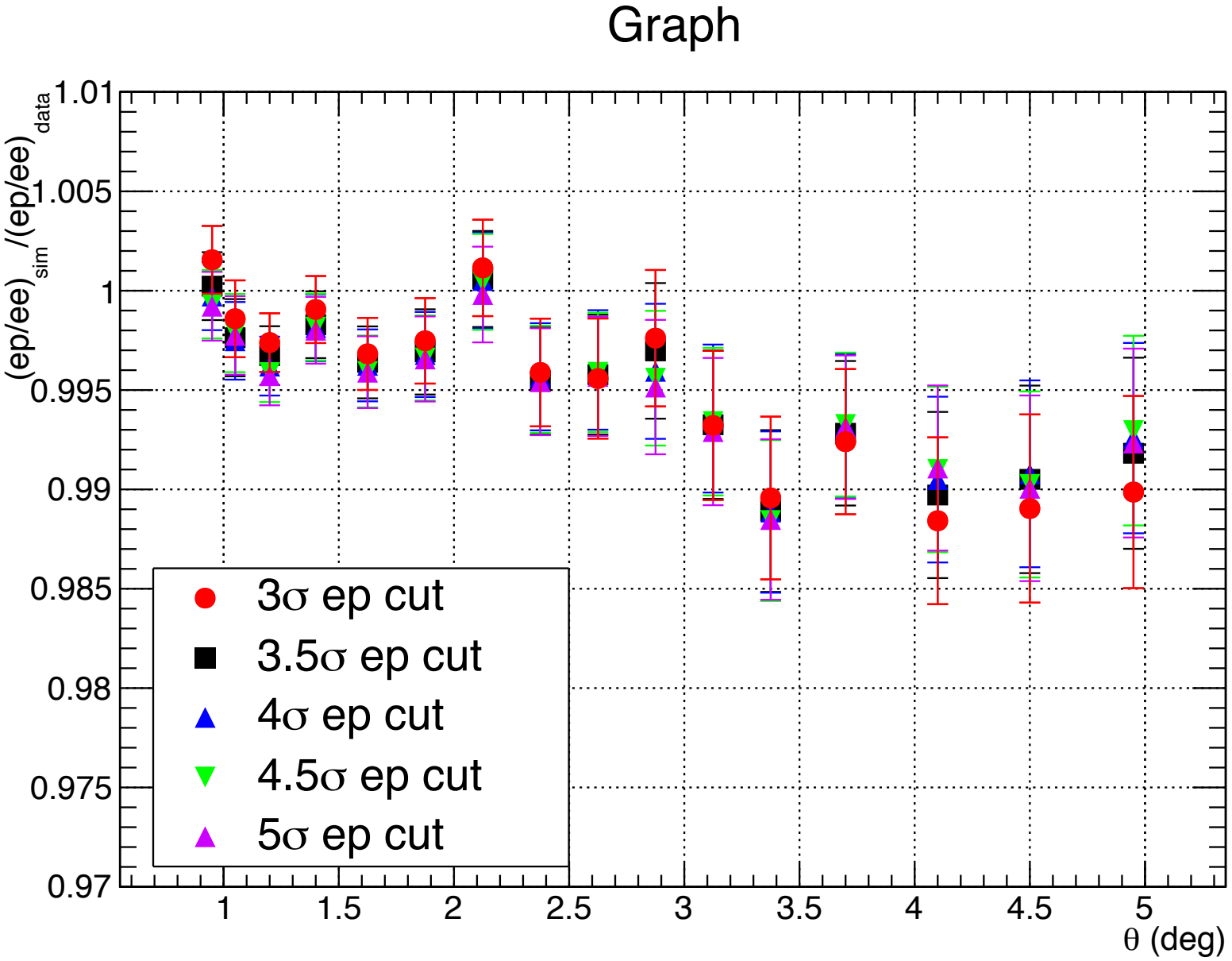




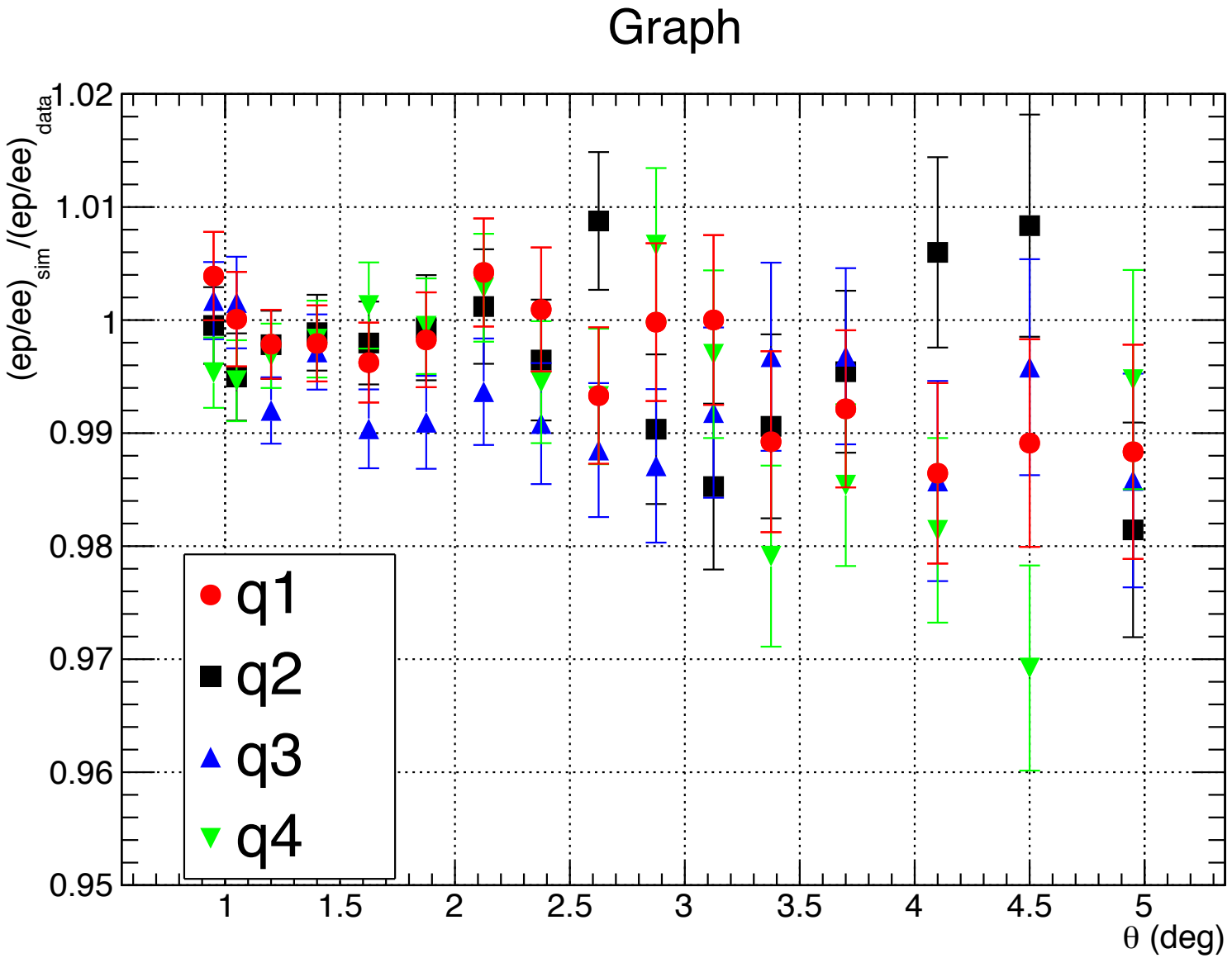
Super ratio comparison



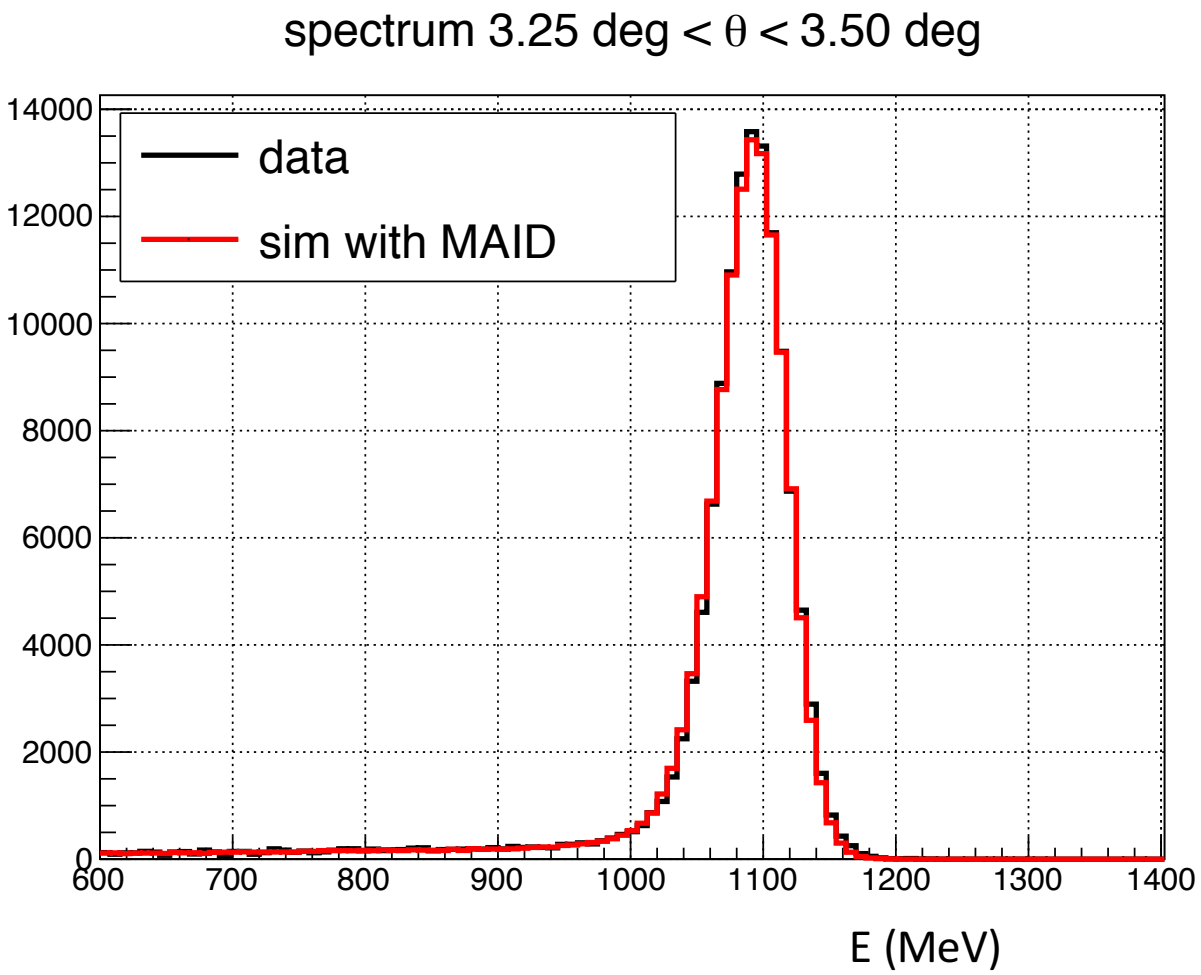
Super ratio comparison – ep cut sensitivity

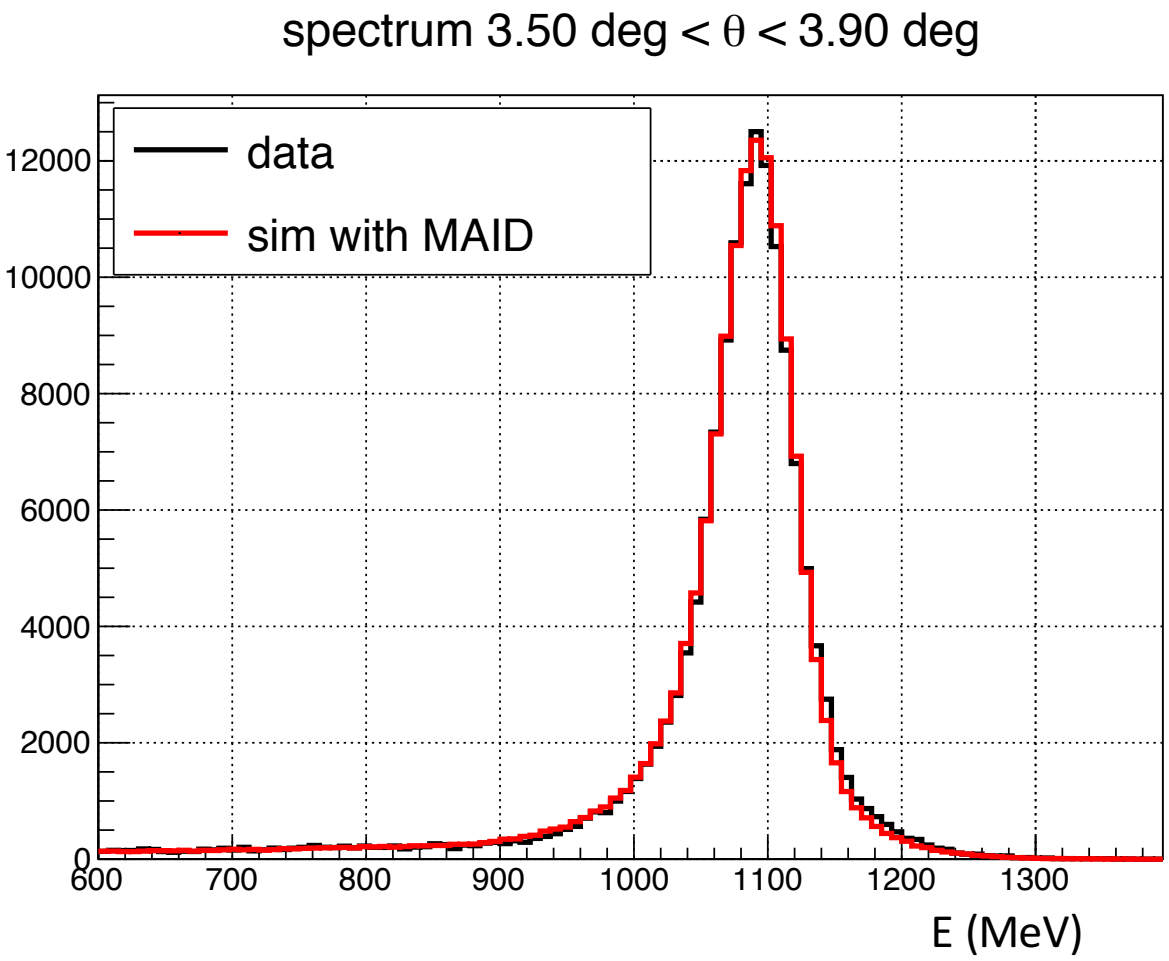


Super ratio comparison – Consistency in different quadrants



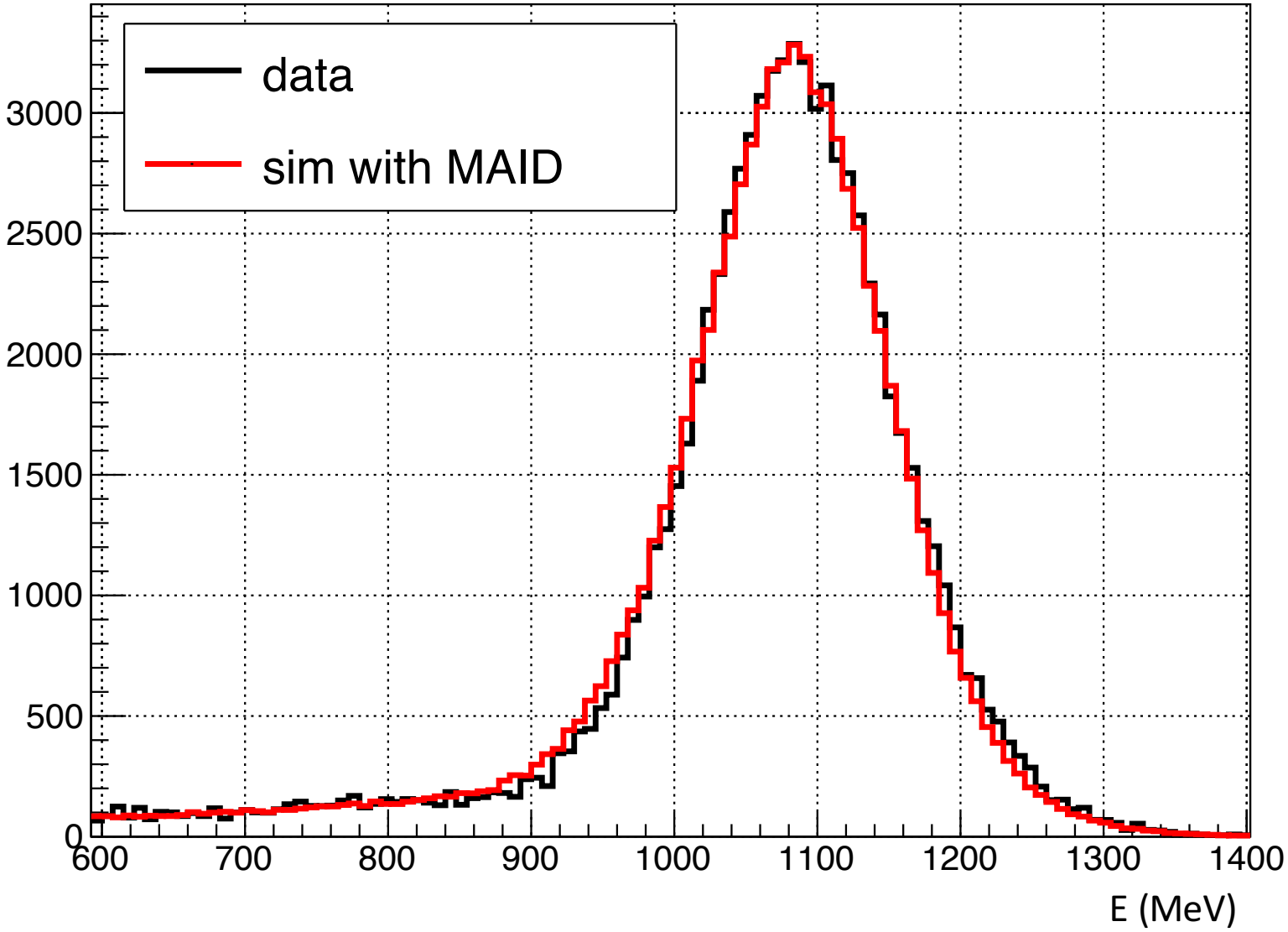
Spectrum comparison



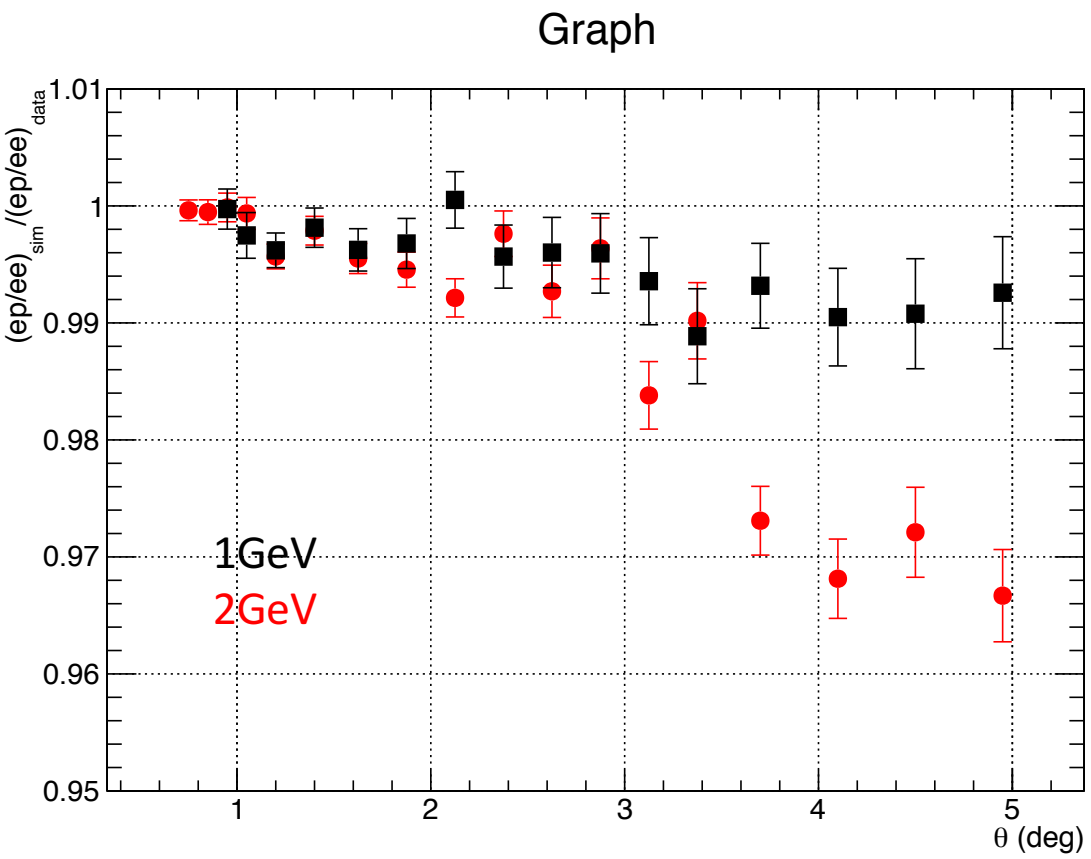


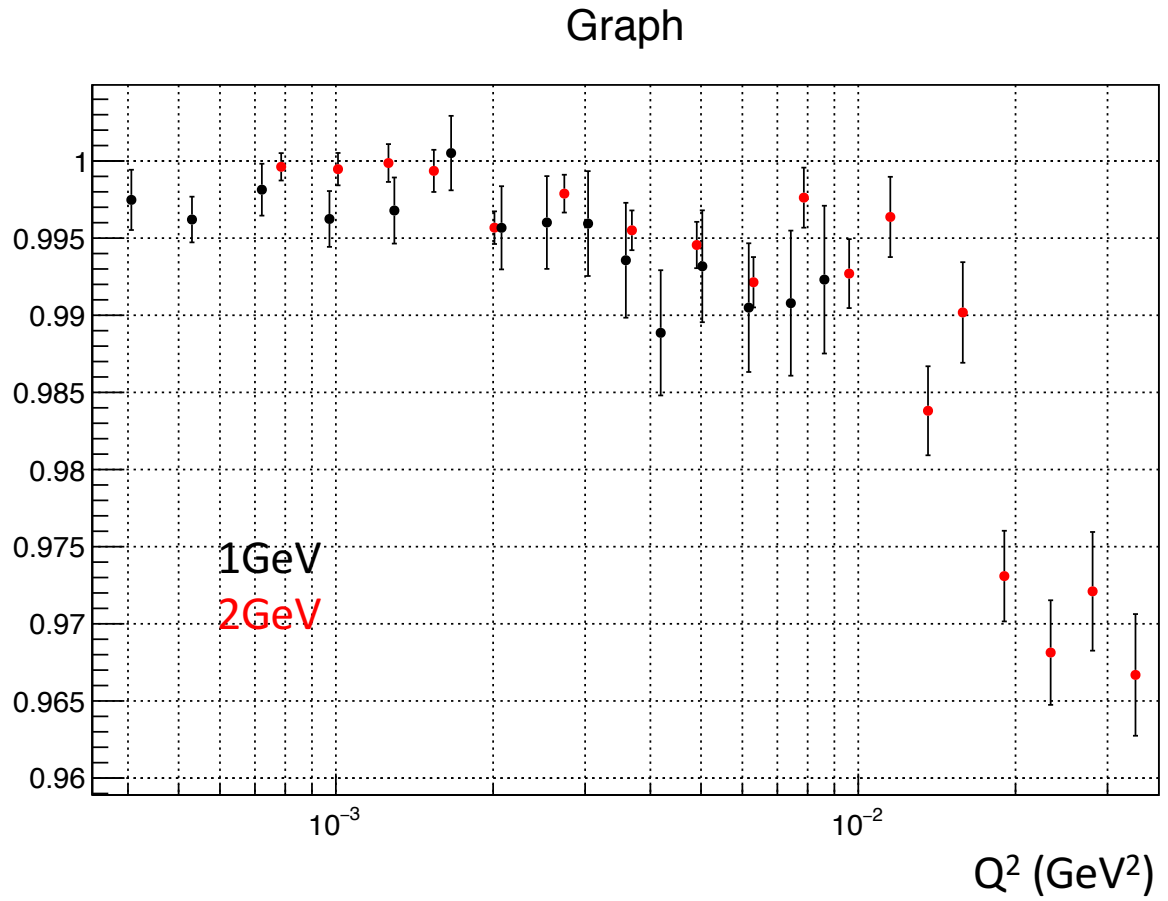
Spectrum comparison

spectrum 4.70 deg < θ < 5.20 deg



Super ratio comparison – 1GeV vs 2GeV

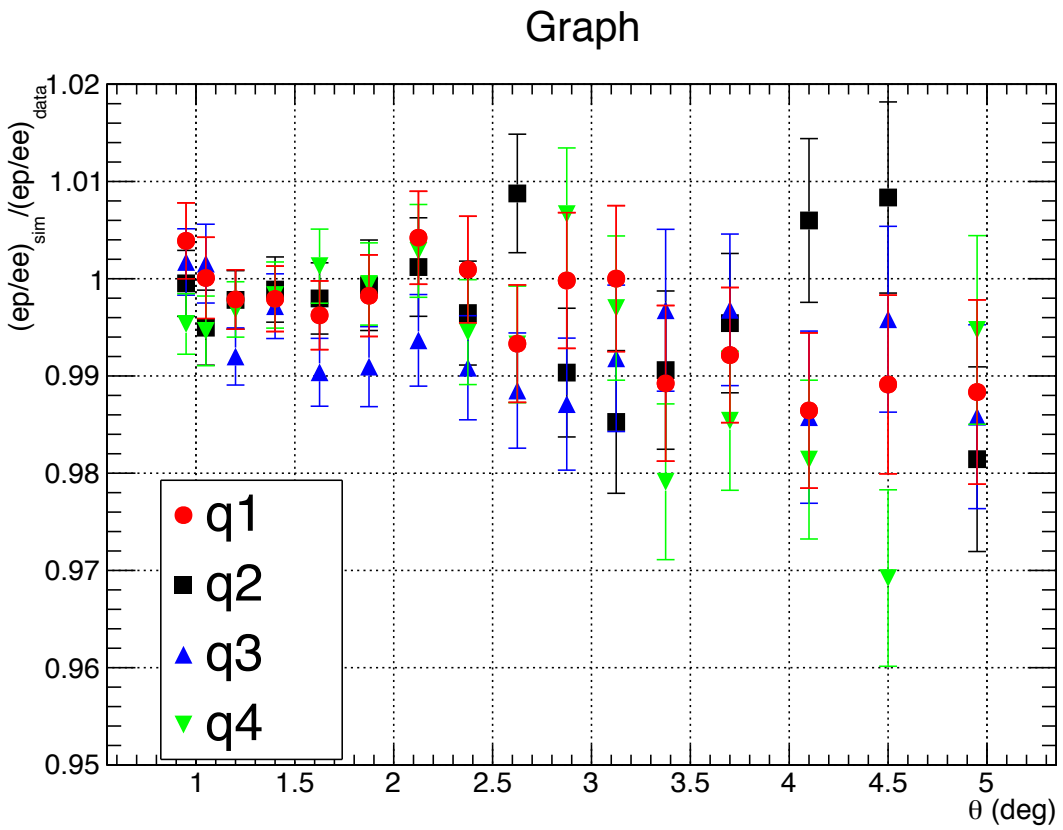


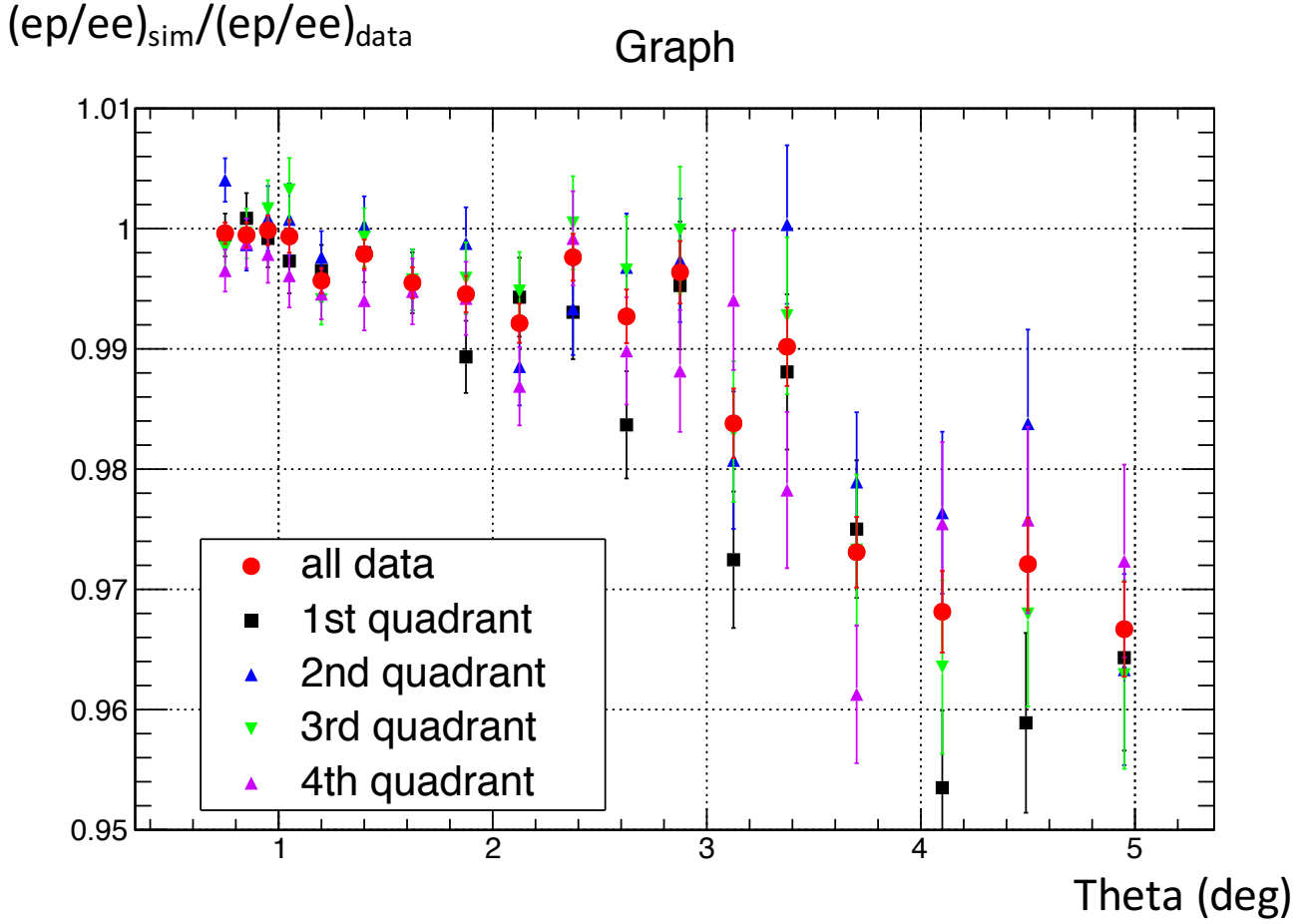


To-do

- Analyze the first 30% of the 1GeV data
  - Second Half of this 30% has checked for consistency, and it is ready to be added
  - First half is no ready yet, need to remove bad events (no beam, unstable EPICS values)

Super ration in different quadrants





Spectrum comparison