

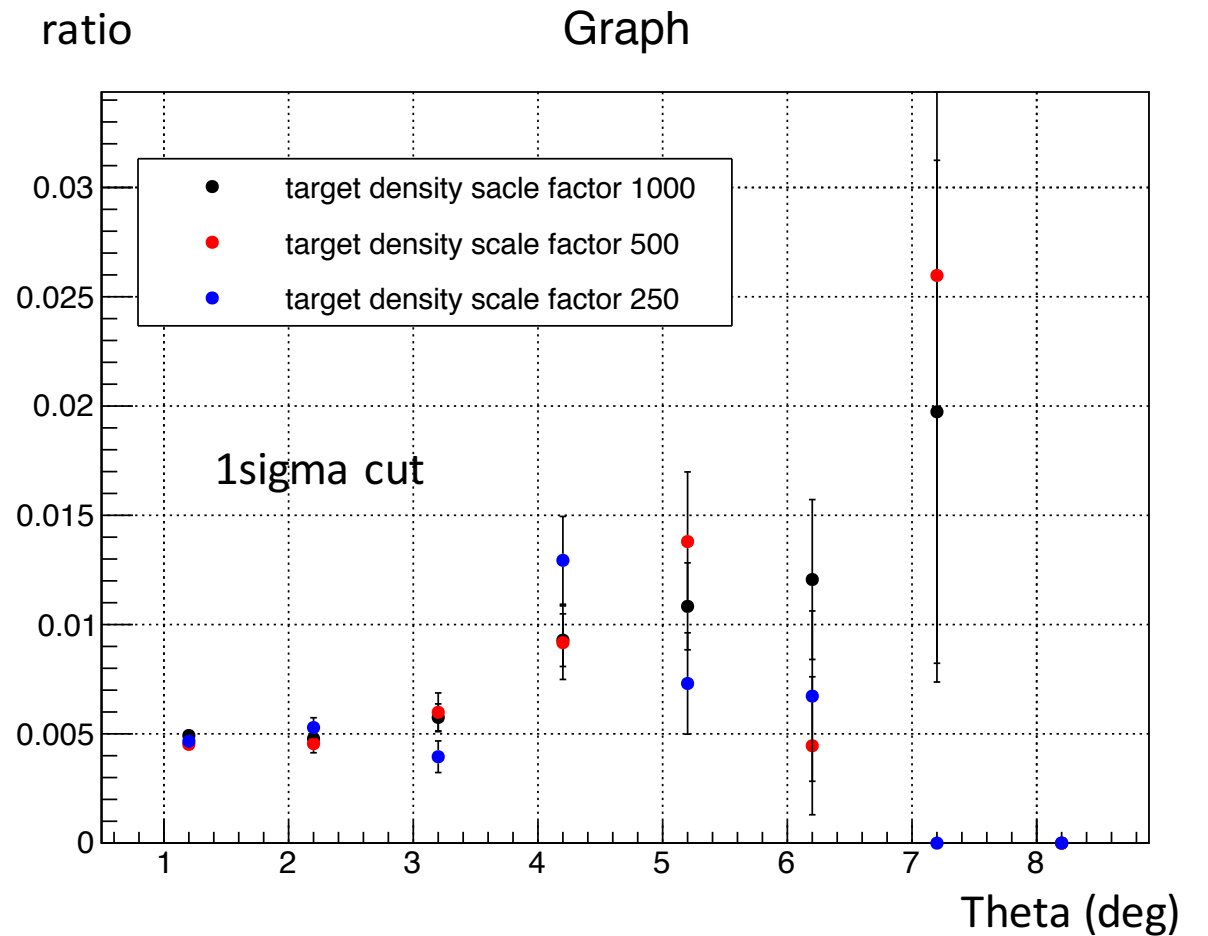
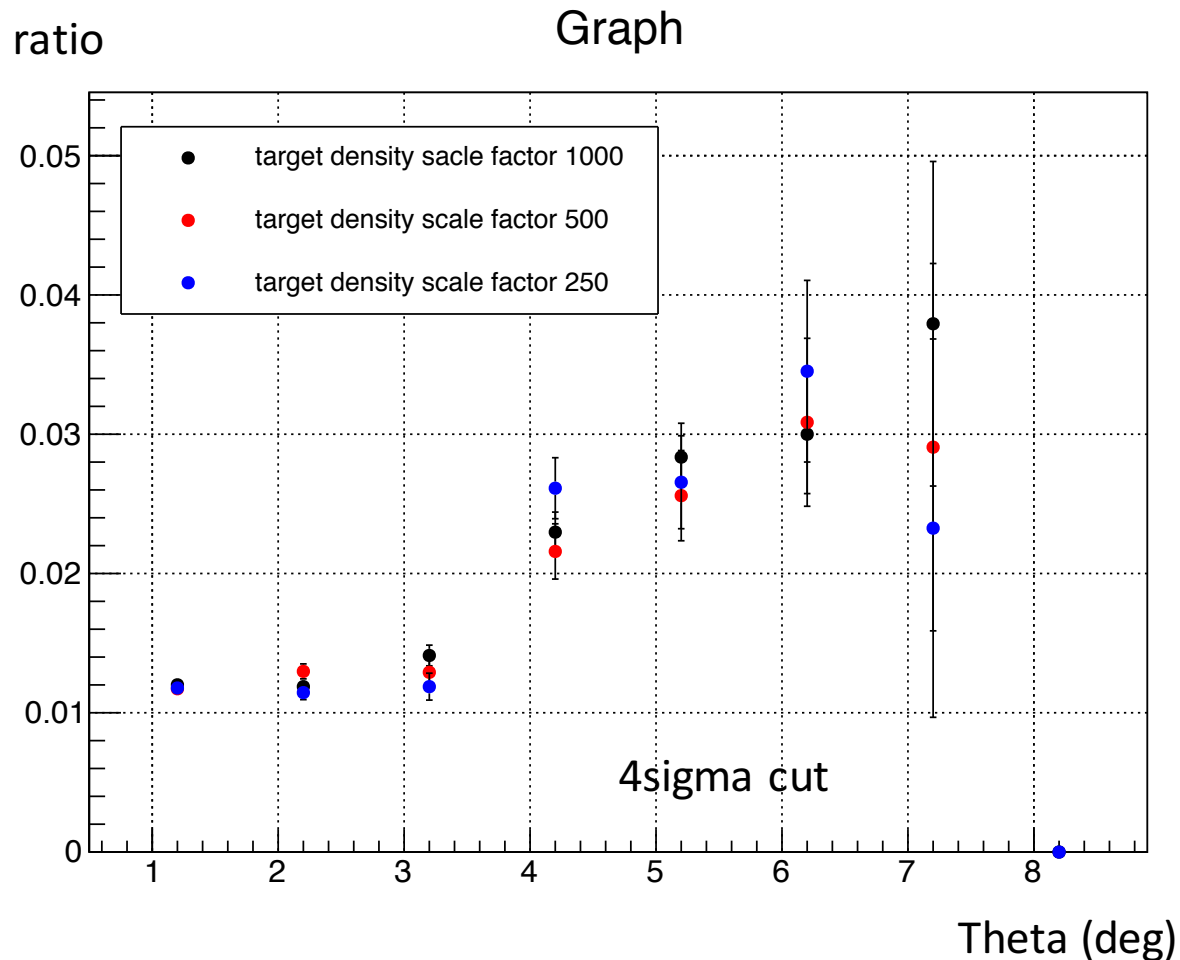
Progress

- Finished running beam on target simulation with target density scaling factor 250, 500 and 1000
- Will run empty target simulation and more detailed beam on target simulation with reaction ID and vertex z recorded

- Have set up the decoder of snake runs based on Maxime's code, and have started the analysis for a small part of the data
- So far distributions seem reasonable, have been discussing with Chao about how to move on

Beam on target simulation

High energy photon yield / high energy electron yield

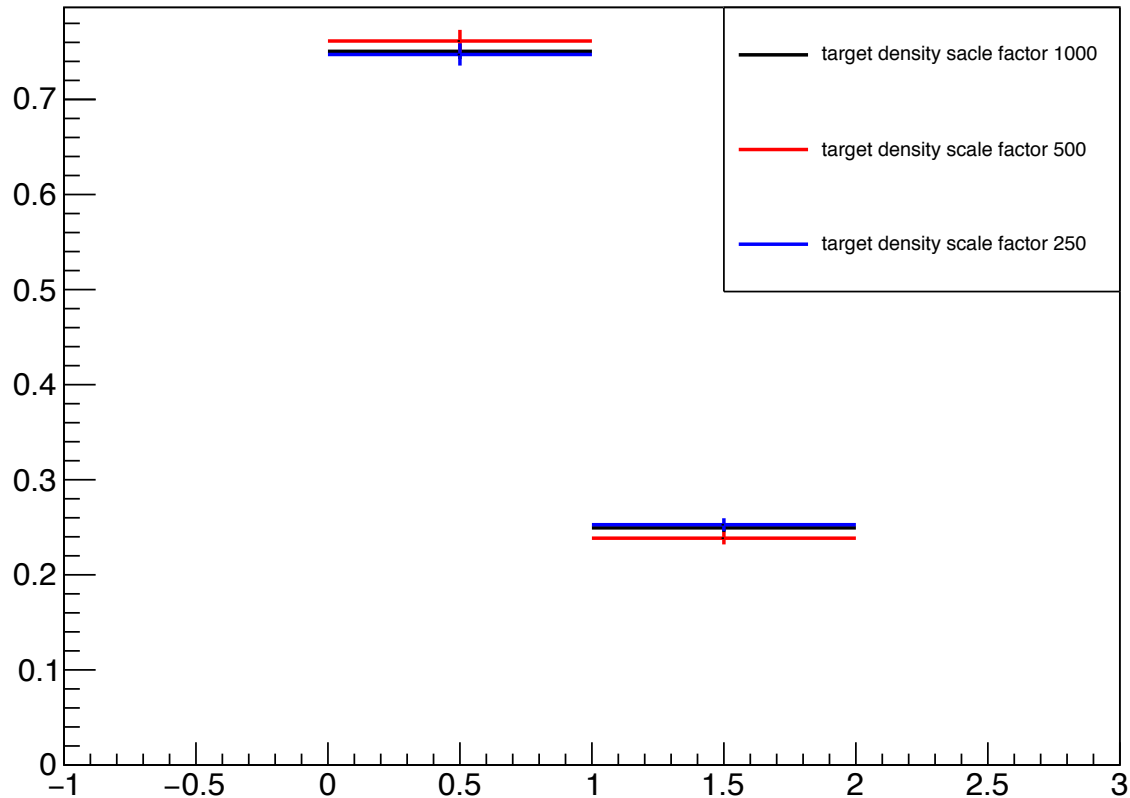


Beam on target simulation

- 0 means there is at least 1 charged particle within 10mm radius around the high energy photon
- 1 means there is no charged particle within 10mm radius around the high energy photon

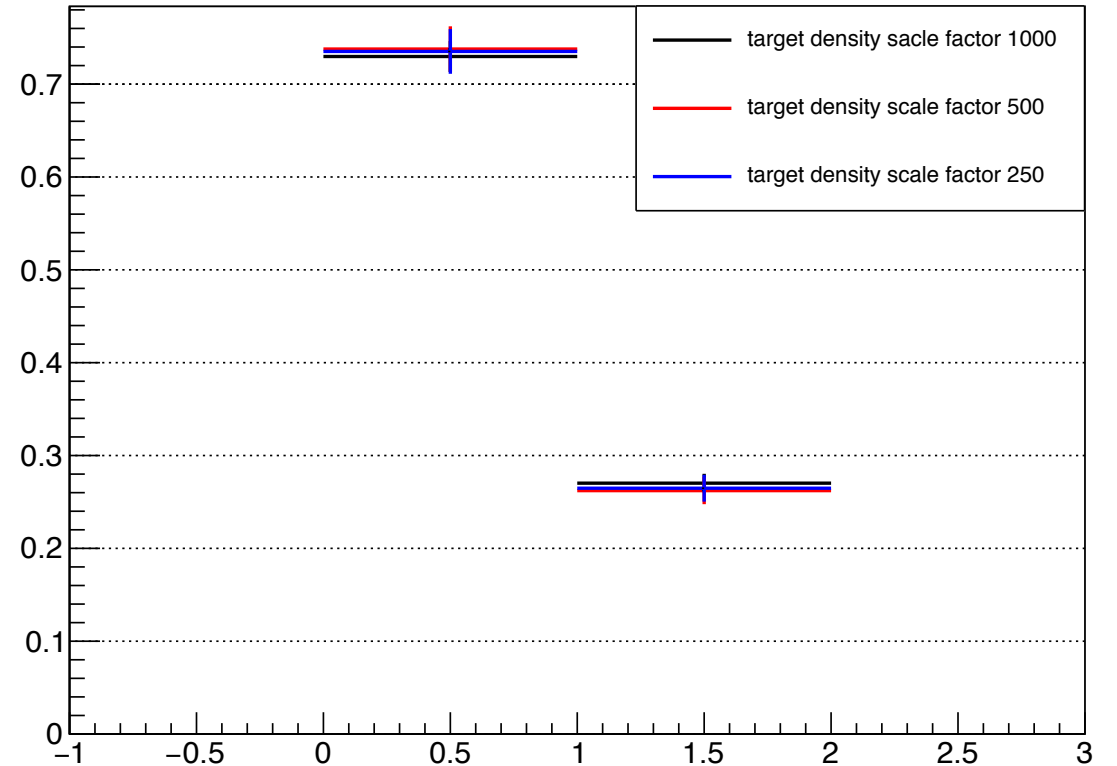
ep elasticity cut for analysis – 4sigma

bg_rate_hycal



ep elasticity cut for GEM efficiency calculation – 1sigma

bg_rate_gem



Conclusion

- High energy photon to high energy electron ratio has nice linear scaling behavior on the target density so far
- High energy photon may lower the GEM efficiency calculated by ep , by at most $\sim 0.3\%$
 - Actual number should be somewhat less than that due to single cluster cut applied in the GEM efficiency calculation
- Need to understand better the origin of those high energy photon
 1. If coming from external radiation probably fine
 2. If coming from Brem. Radiation of target, then we have an extra background source