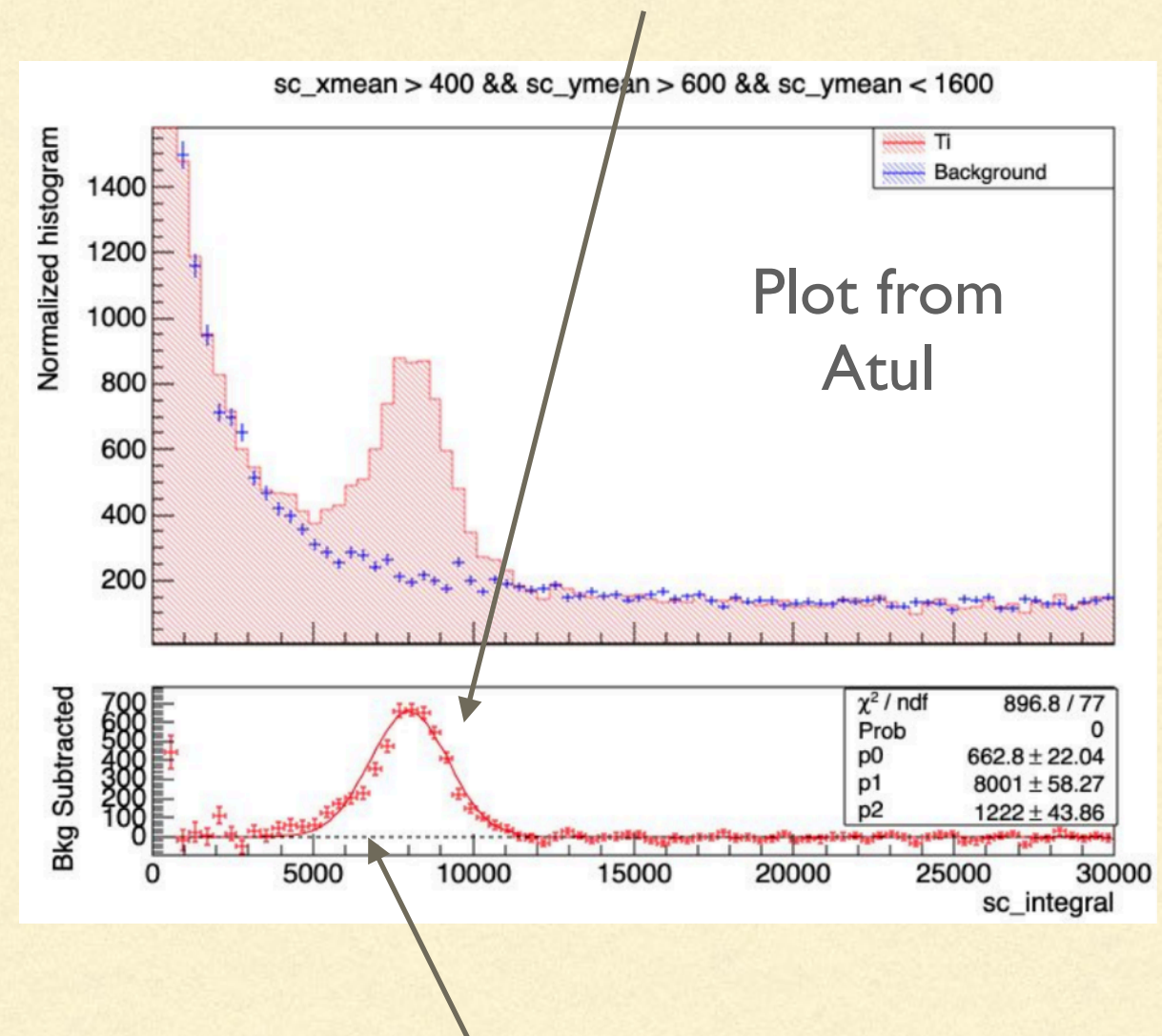
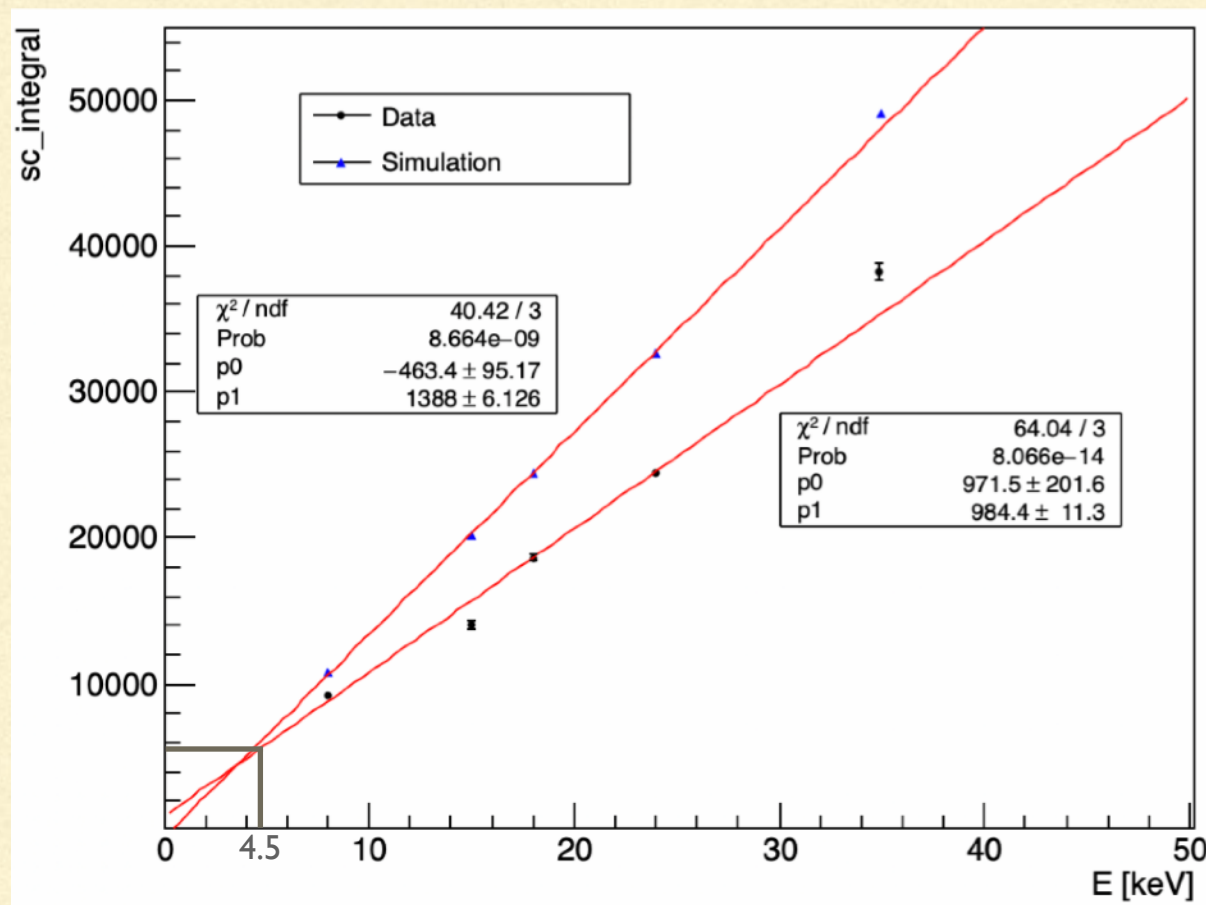

Recap on LIME Data-MC comparison and linearity response

General meeting - 03/03/22

Status on Titanium measurement

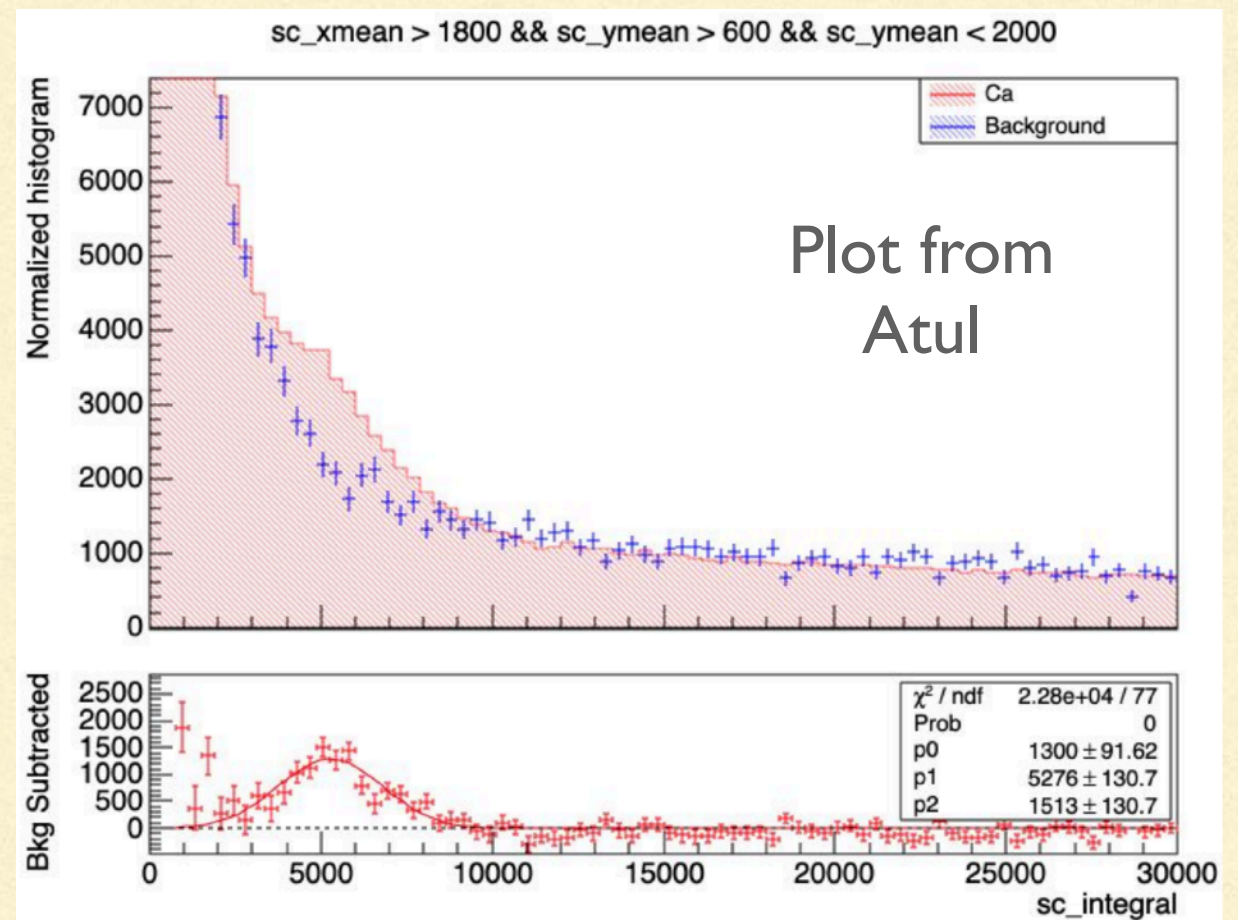
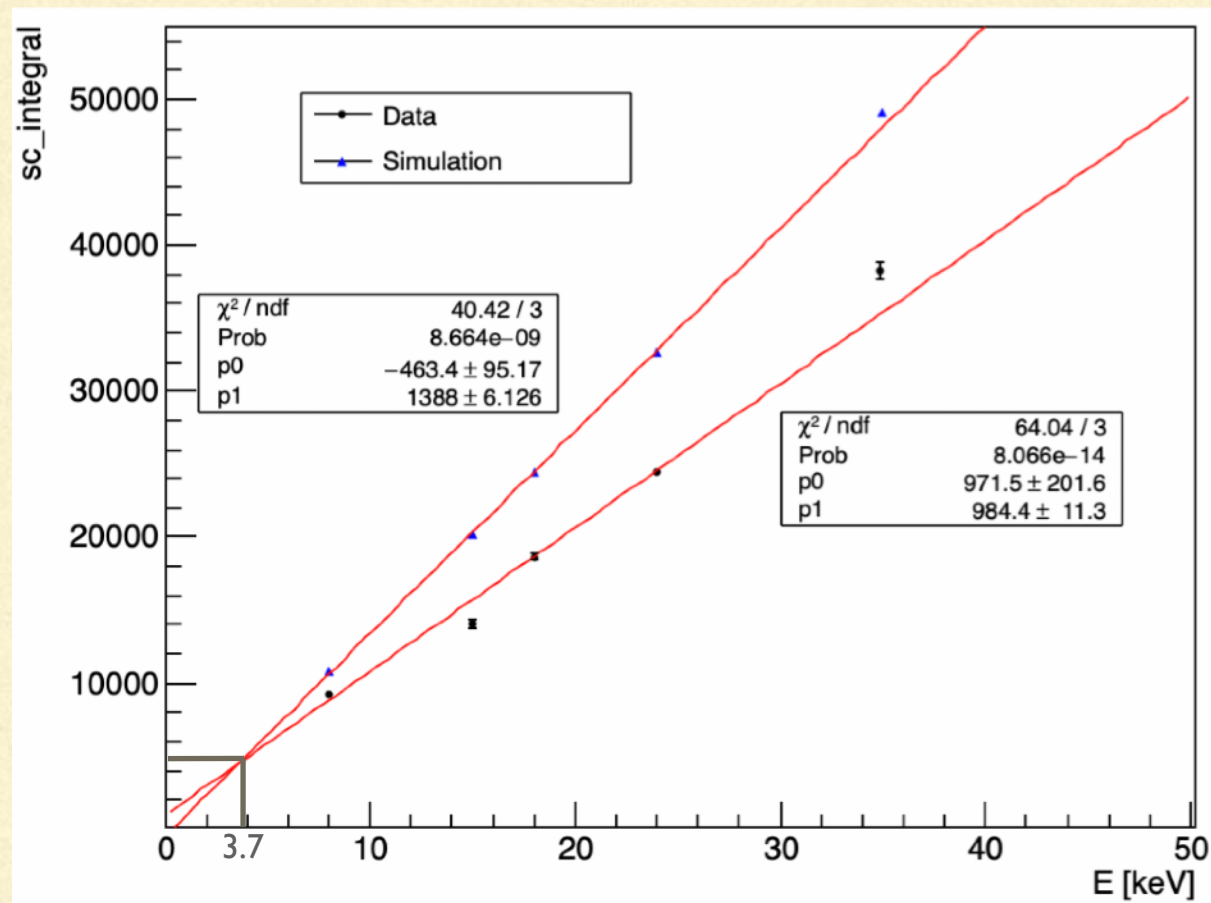
- Iron source for Ti(4.5keV) data used in transmission mode: ^{55}Fe present in the sample
- From recent analysis of Rita and Emanuele: ^{55}Fe expected to be at 8000 photon
- Cut made on position and $\text{sc_length} < 400$



- Ti component from interpolation expected to be at 6000 counts

Status on Ca measurement

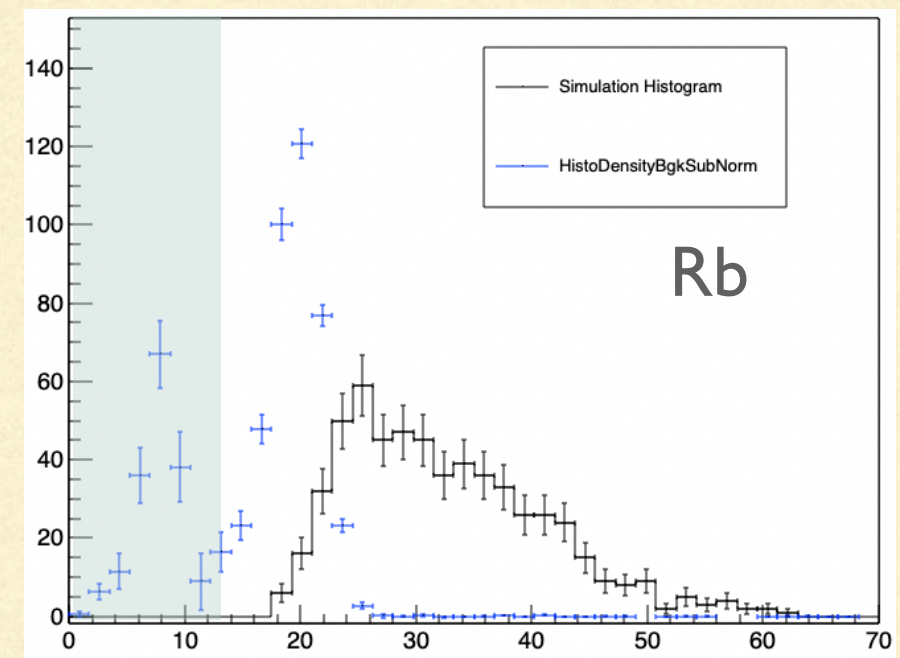
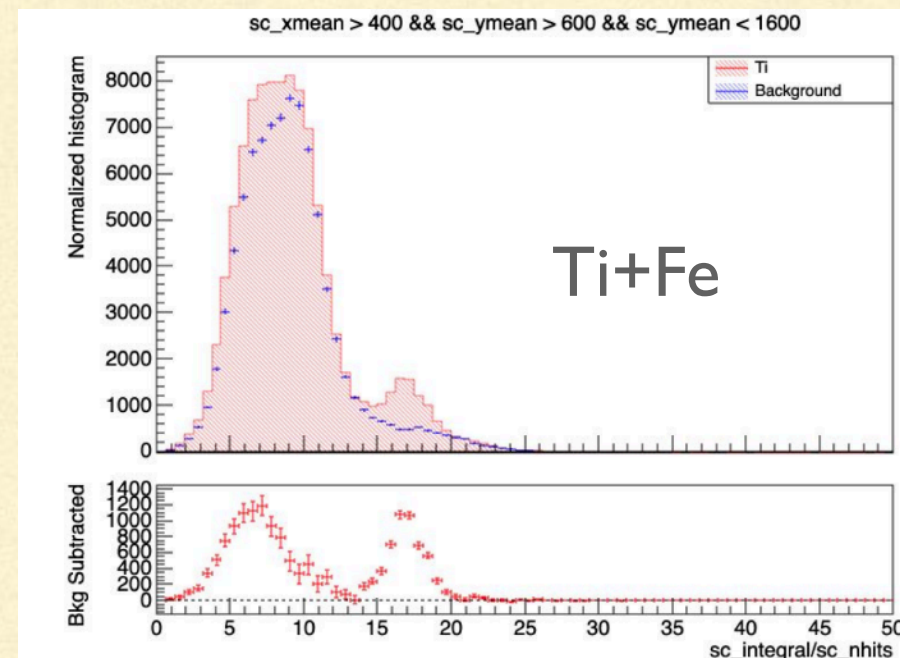
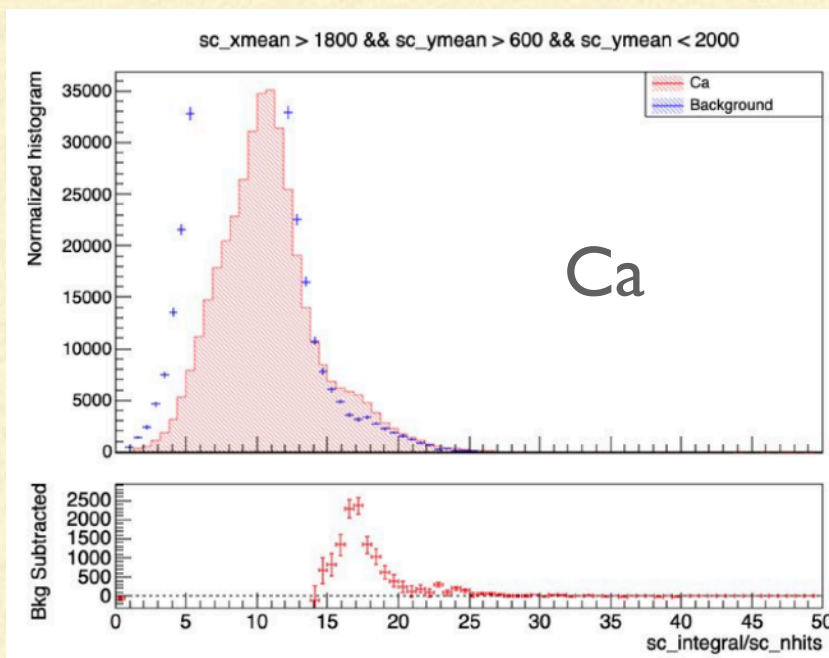
- In $\text{Ca}(3.7\text{keV})$ data iron source was not used in transmission mode. Only Ca expected
- After some track position Selection and hotspot remotion



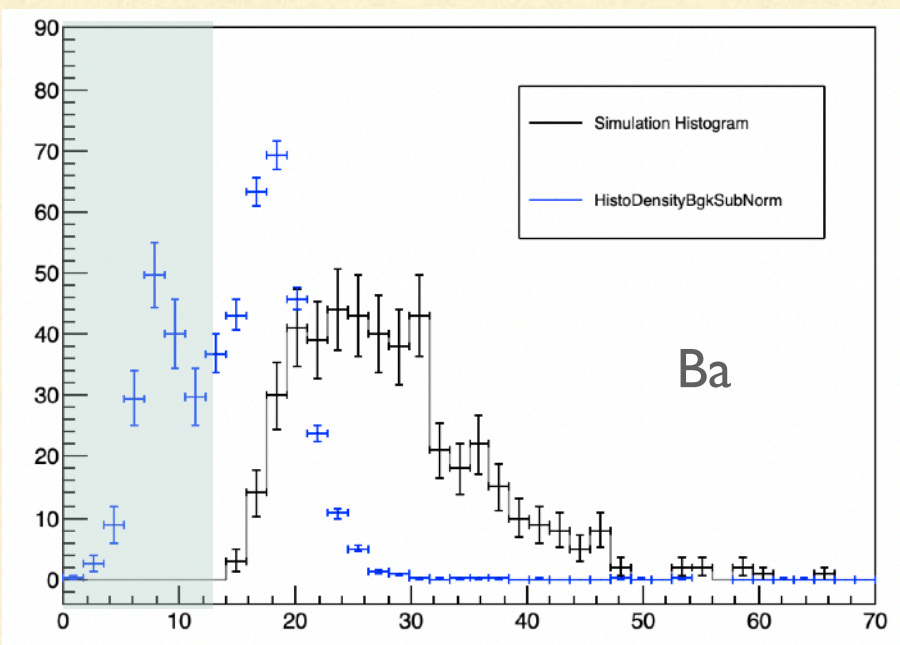
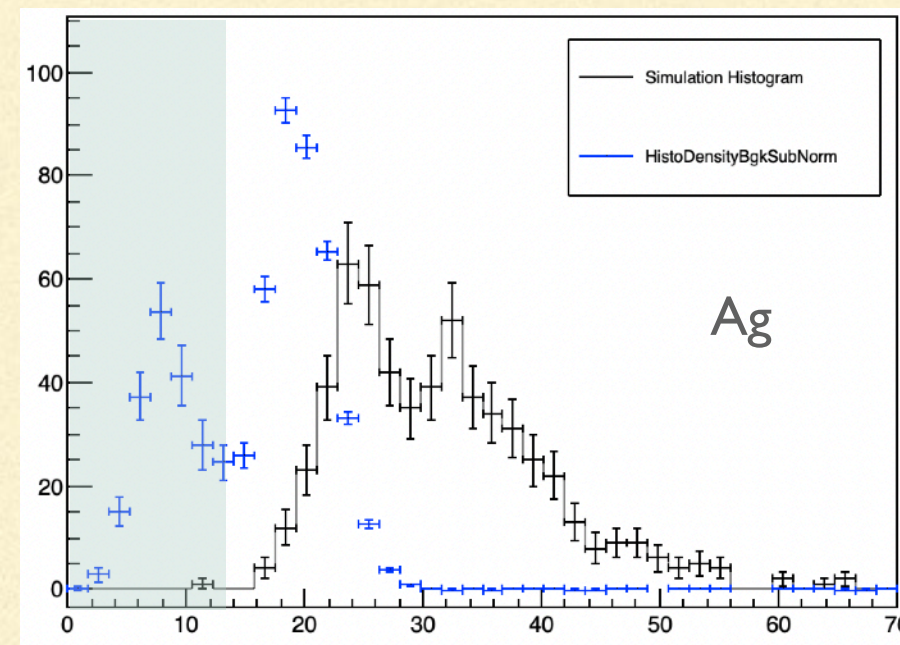
- Peak at 5000 counts fits very nicely with the prediction

Further considerations

- Supercluster density (integral/nhits) comparison



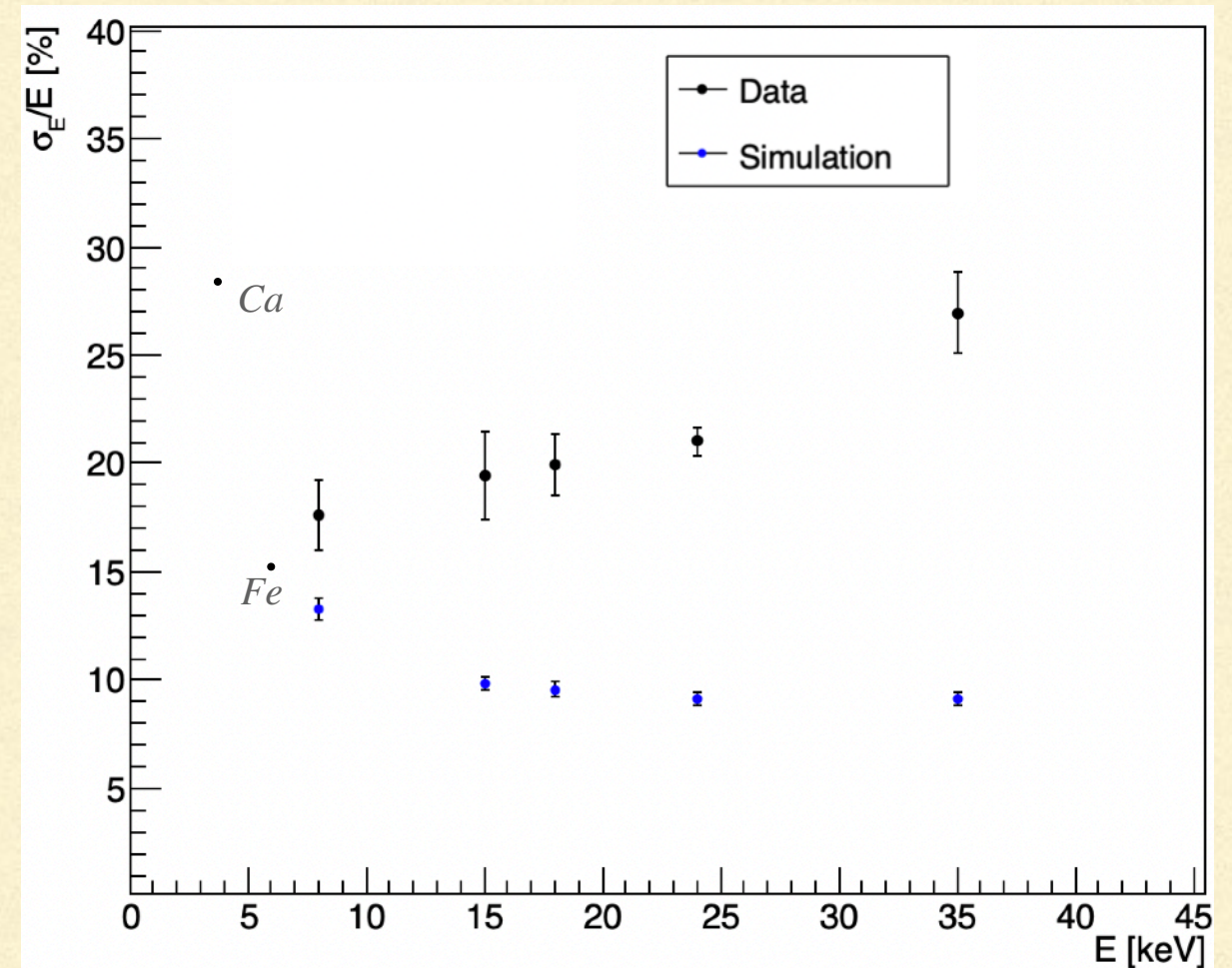
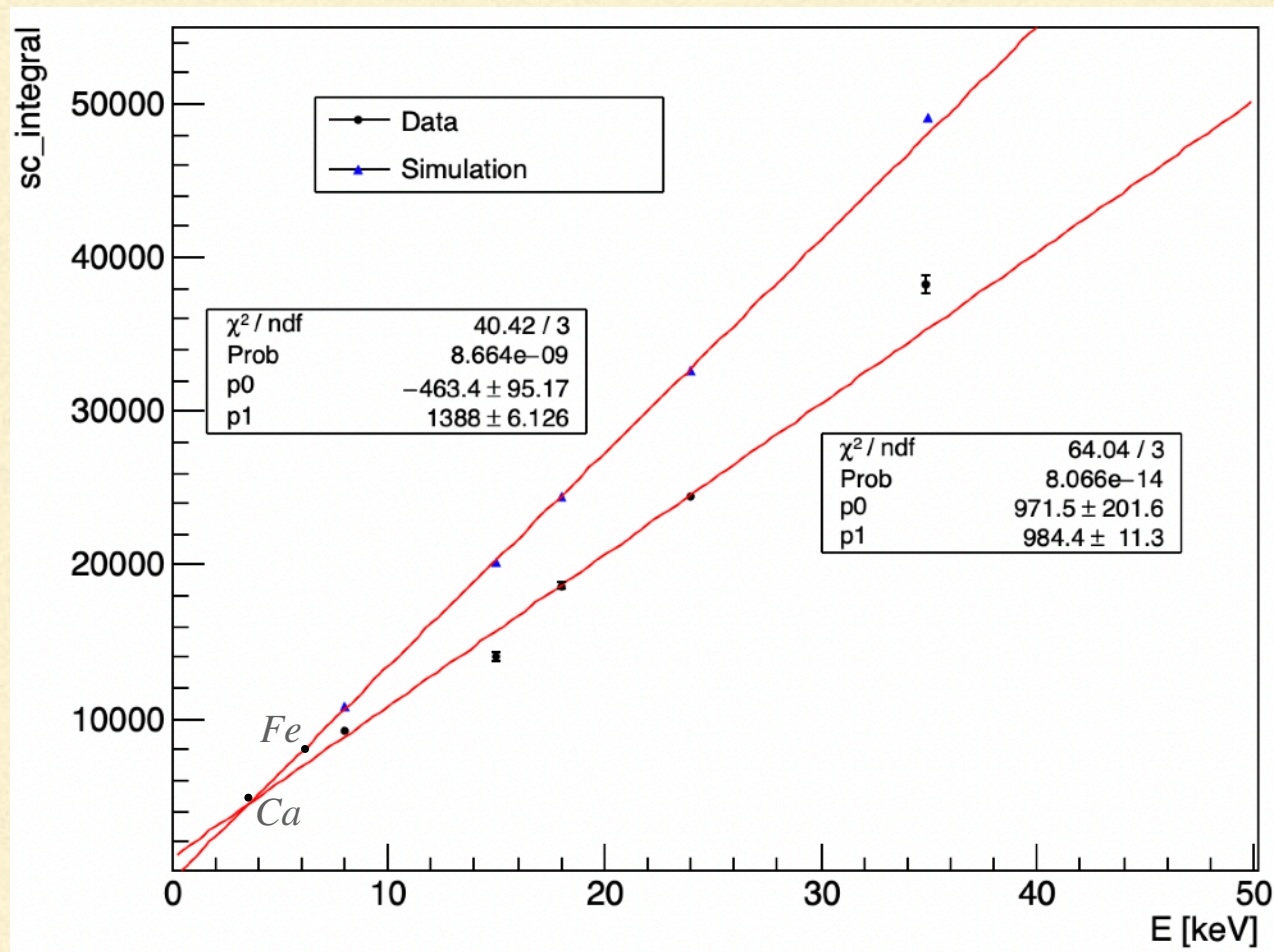
- Fake cluster below ~ 13
- Same shape at different energy
- Lower average at lower energies
- Tends to saturate in average at ~ 20 with a cutoff at ~ 30



Related to saturation? Limit in density?

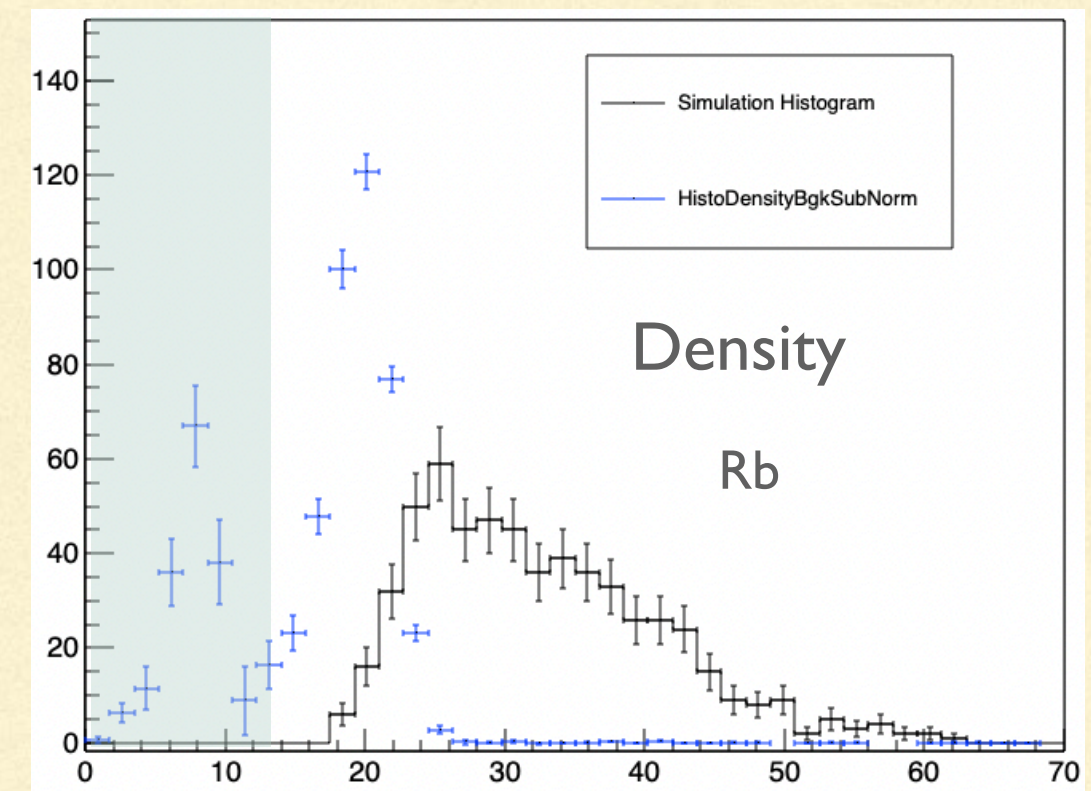
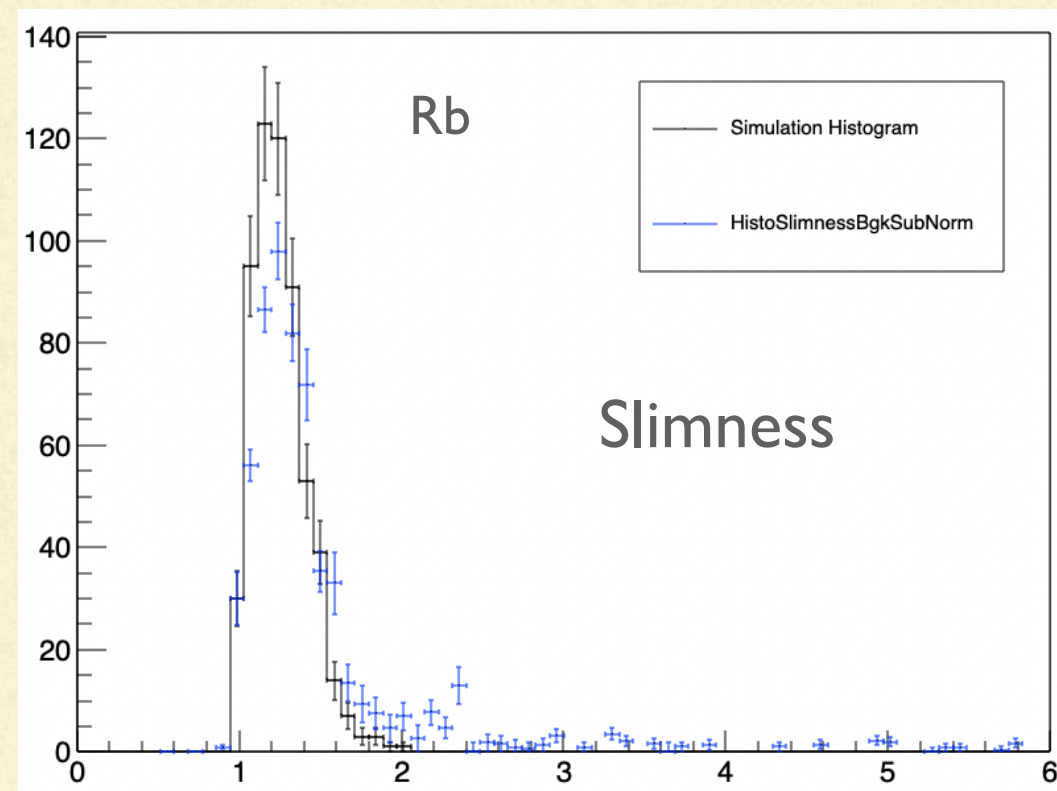
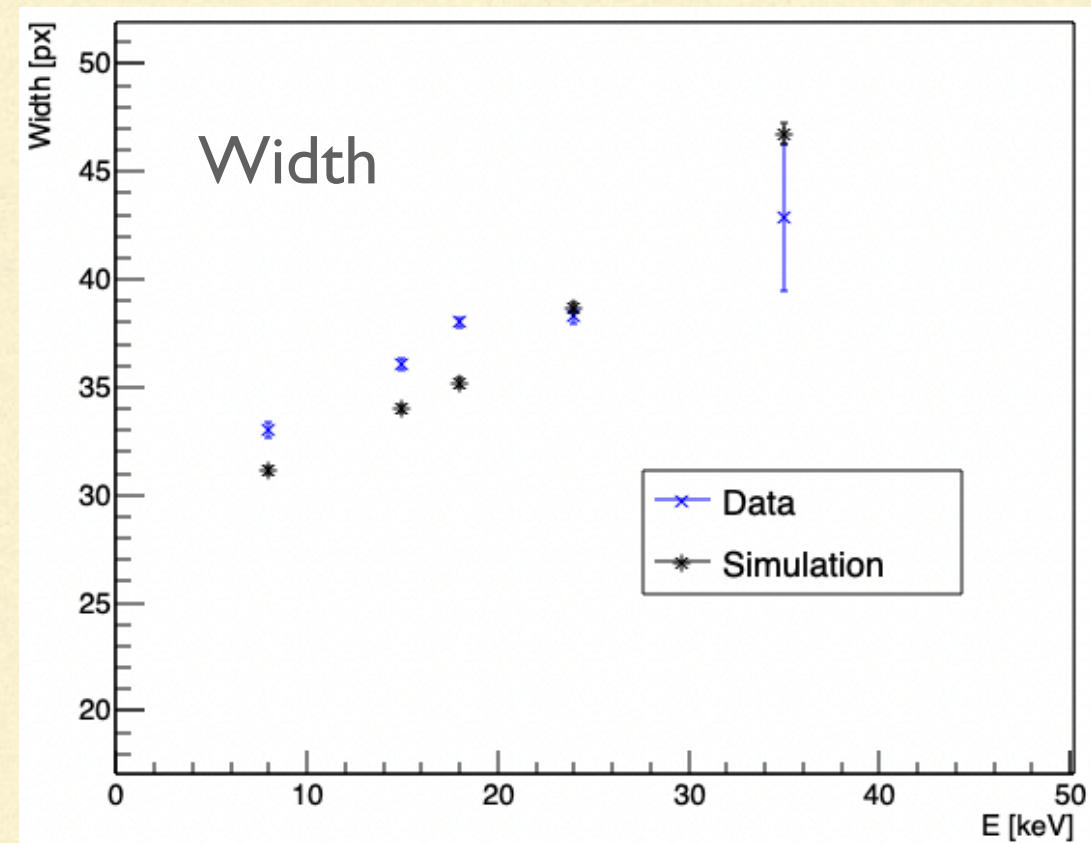
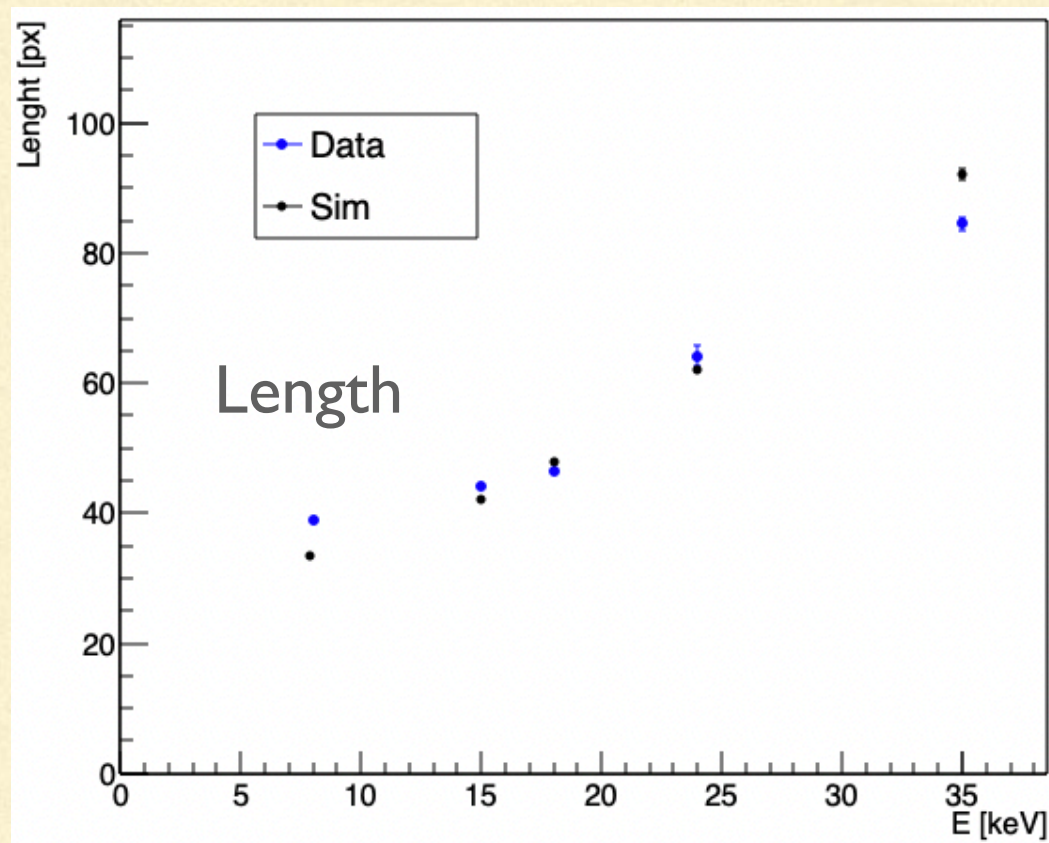
Linearity and Energy resolution

- Points found by Atul added for comparison

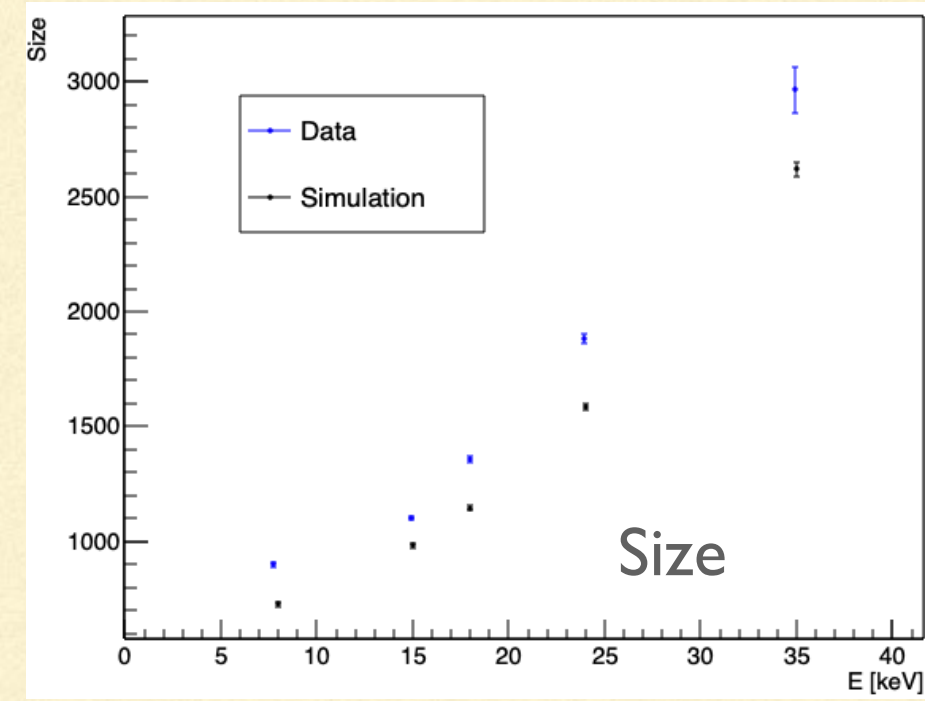
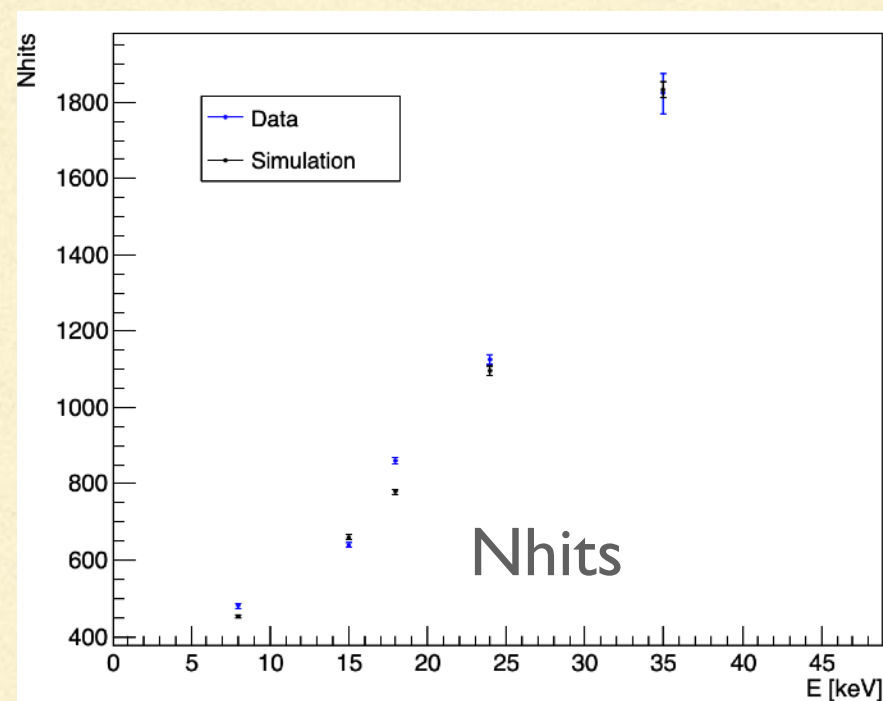
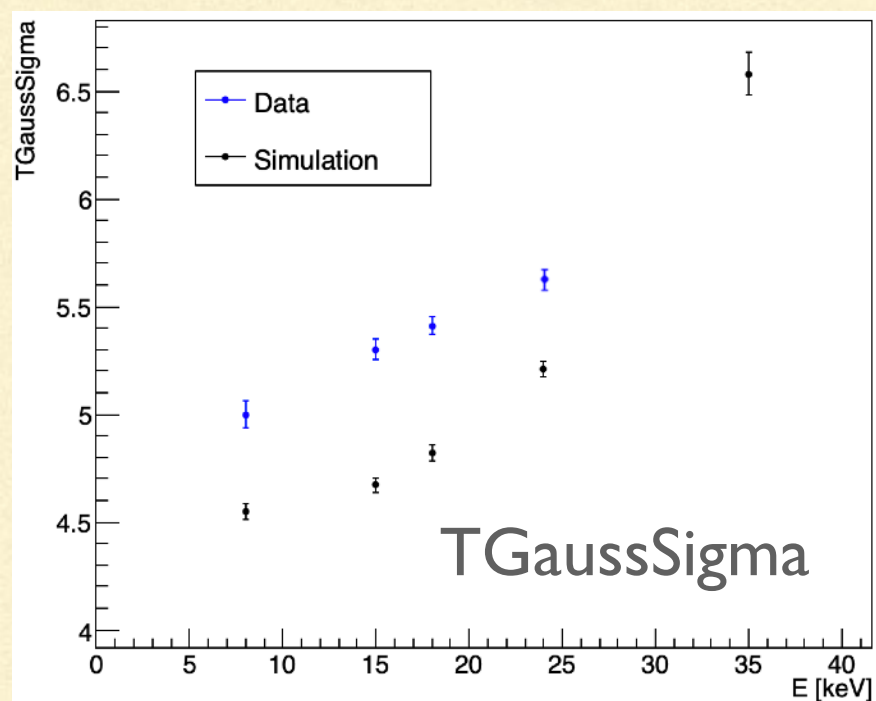
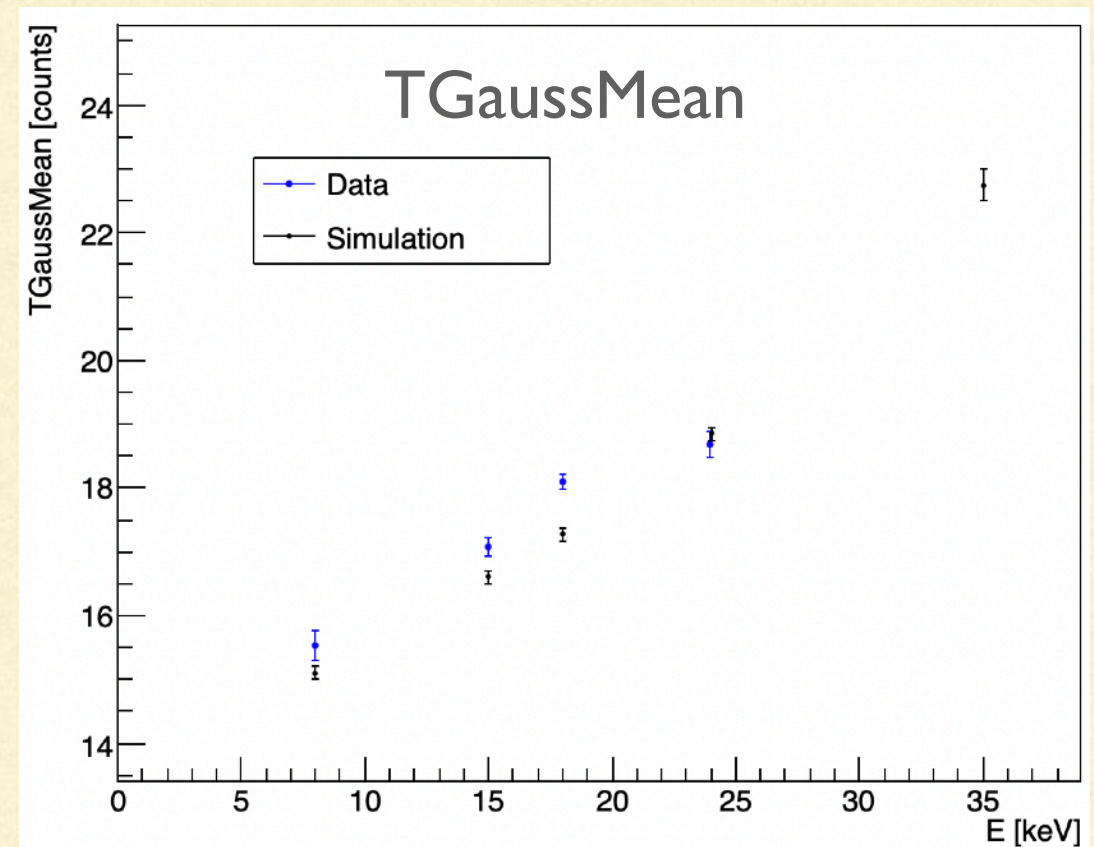
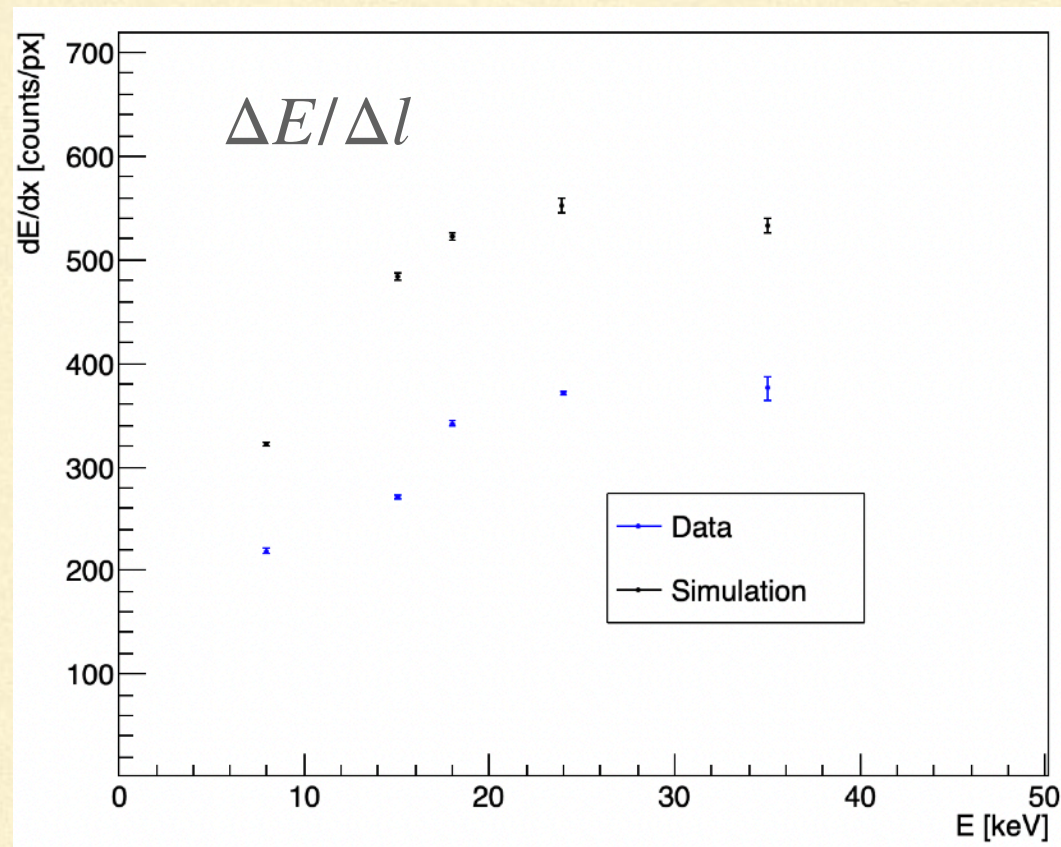


- Discrepancy in light and energy resolution

Supercluster variables comparison

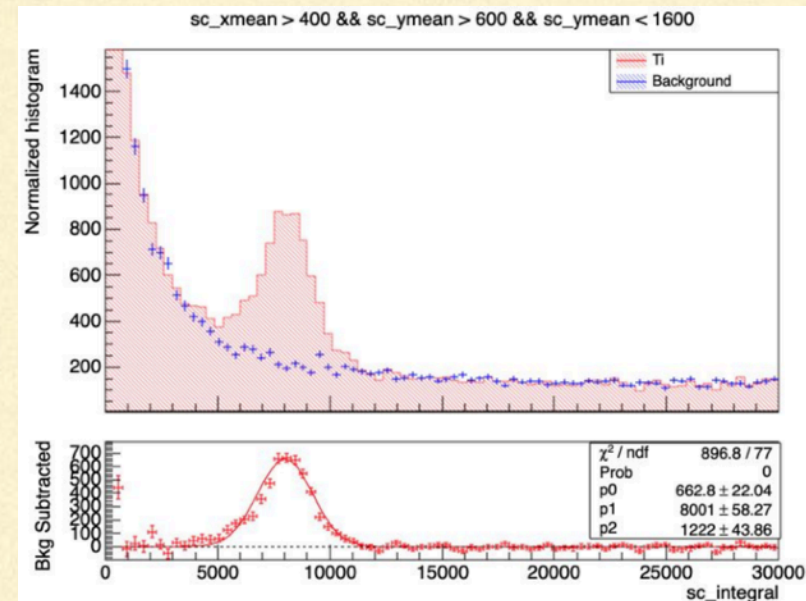
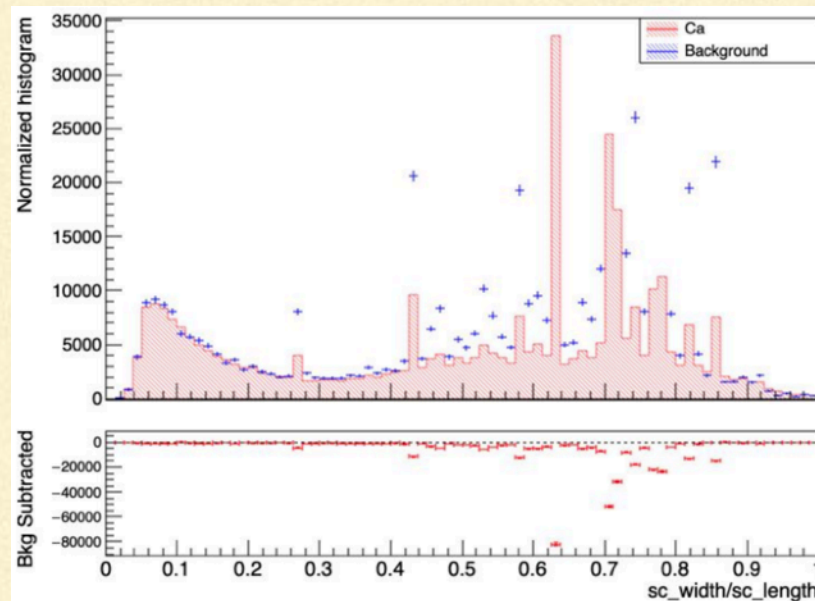


Supercluster variables comparison



Recap.

- Data show in General good linearity but inconsistent Energy resolution
- Issue in normalization in Ca and Ti data to be better analysed
- Improve the analysis in Ti data to isolate the Ti Peak



- Data and MC comparison shows:

- Agreement in:
 - Nhits
 - TGausMean

Diffusion is well simulated?

- Fine-tune needed in:
 - Length
 - Width
 - TGaussSigma
 - Size

Possible relation with a different pedestal in simulation?

Non uniform z distribution?

- To improve:
 - Linearity
 - EResolution (to be conformed)
 - Light density
 - Specific ionization

Connected with the saturation?