Am data/MC comparison

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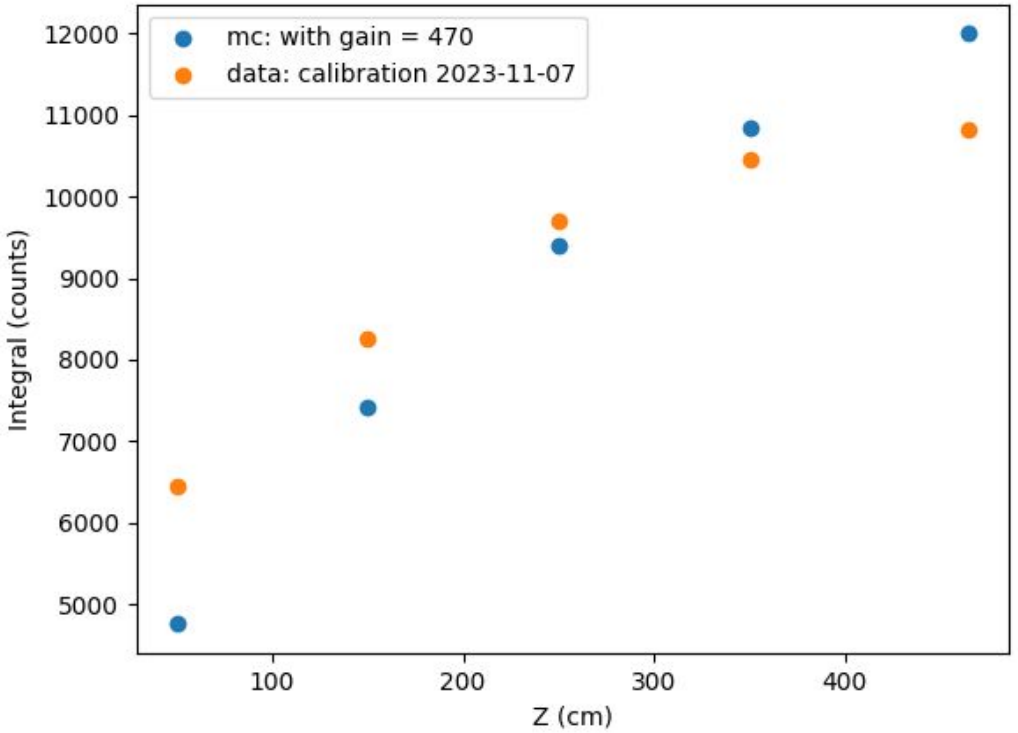
Calibration of GEMs gain in MC

Recently I showed how we can fit the iron calibration to find the best gain parameter.

I used the Fe55 calibration just before Am campaign.

Unfortunately we should calibrate the attenuation too…

Let’s use 470 as a best gain parameter for Am simulation



Simulation of Am peak @ 59 keV

Geant4:

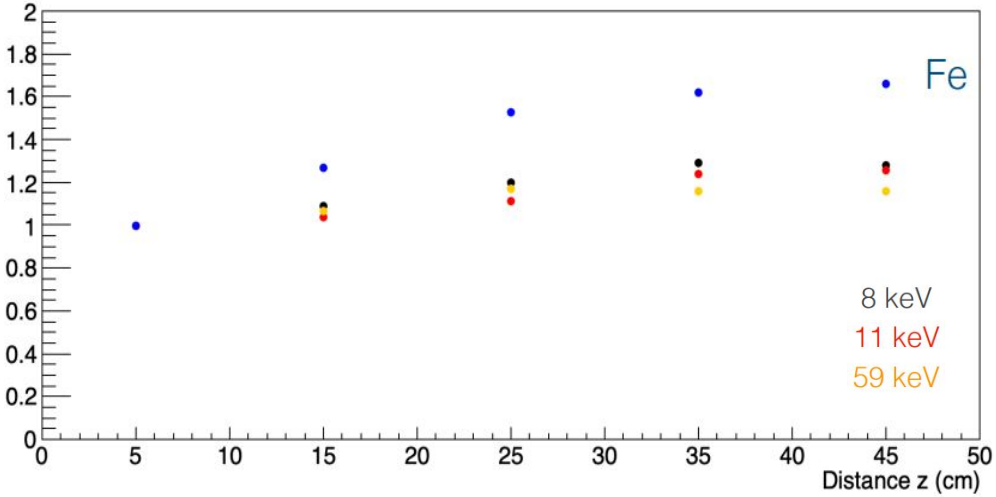
- used tracks of electrons @ 60 keV (isotropic)

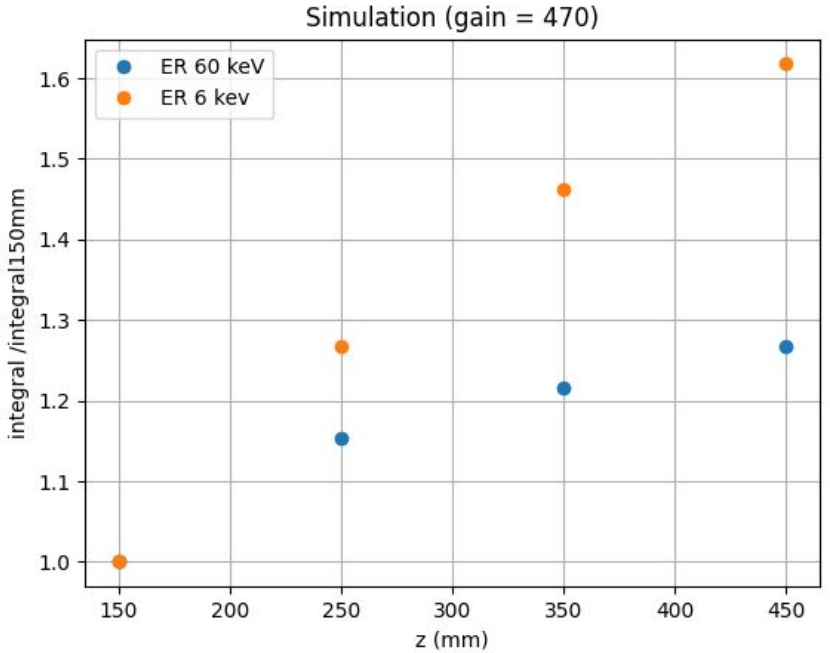
Digitization:

- GEM1_gain = GEM2_gain = GEM3_gain = 470
- 4 different z: 150 mm, 250 mm, 350 mm, 450 mm

Comparison with data (Davide's Am results 16/11/23)

Am data: normalized at 5 cm





Comparison of absolute integral @ step 5

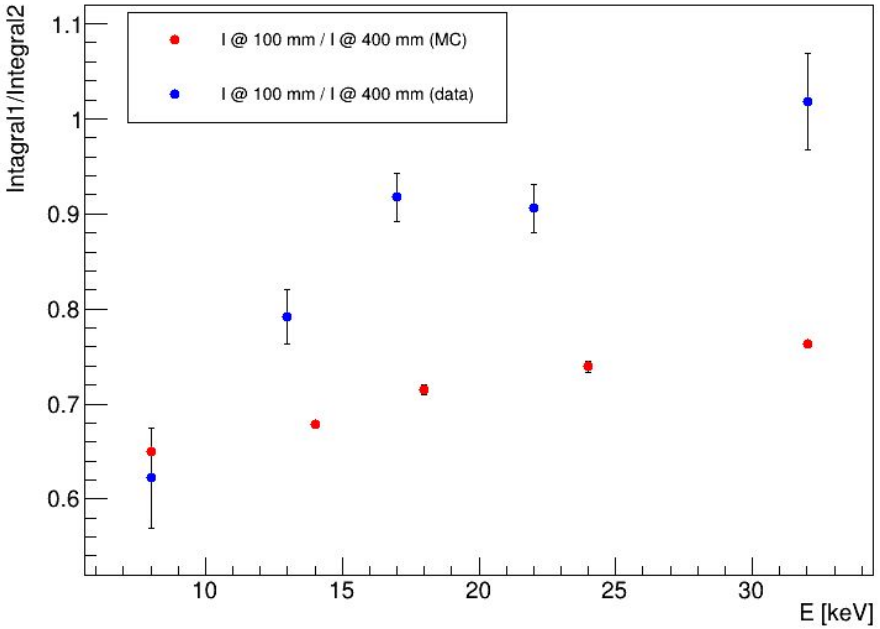
data_integral = 97+/-1 kcnts

MC_integral= 116 kcnts

LIME overground (multisource at different z: 4470-4489)

Some time ago I showed this plot with LNF data

But I was not calibrating the gain in MC (not sure it's possible)



Conclusions

- MC seems to simulate well saturation. But need to further investigate.

- best gain calibration in MC seems really important