

Exercise 1 – Nuclear Fission

Welcome to the tutorial! We have talked about fission fragment **mass distributions** in the lecture. What about fission fragment **charge distributions**?

Note: here the **nuclear charge** is meant, not the atomic charge which might differ depending on circumstances for a given fission fragment.

Assuming that the proton-to-neutron ratio does not change during fission, namely that the so-called ***Unchanged Charge Density (UCD)*** hypothesis is correct, fission fragment mass and charge distributions are related.

In reality, this is not the case (UCD is still a good first-order approximation).

Why do you think this is? What differences between fission fragment charge distributions would you expect and which physics is causing them?

Hint: you are looking for – at least – two effects.