

# Neutron measurement feasibility - To do list

- **Brief recap:** we met with Flaminia 10 days ago, and she showed us the complete status of her work (code, simulation files, etc.)
- **Unfolding:**
  - The code developed by Flaminia is almost entirely equal to the RooUnfold example. Not necessarily the best choice, there are other options e.g. in Python. **Long story short: the code must be re-written from scratch.**
  - To do list:
    1. **Simulate different neutron spectra** (uniform, or even increasing with energy) to train the response matrix
    2. These simulations **must be digitized and reconstructed** to include the detector effects (and not just the elastic scattering smearing)
    3. **Simulate “test-bench” neutron spectra** (e.g. monochromatic neutrons) to validate the method, to compute the resolution etc.
    4. Take the external neutron background + internal neutron background and play with the statistics to demonstrate the feasibility
- **Fiducialization in z:**
  - Crucial to reject the internal components coming from GEMs and cathode
  - Best test-bench that came to our mind is to look at RUN4 (basically no external neutrons, and only internal ones) and test if we can do it.
  - Comparison of RUN4 with RUN5 or AmBe data
- WP1 meeting is going to be scheduled to coordinate this and other activities
- We need to assign the previous tasks to people, otherwise we will never have the possibility to conclude this study