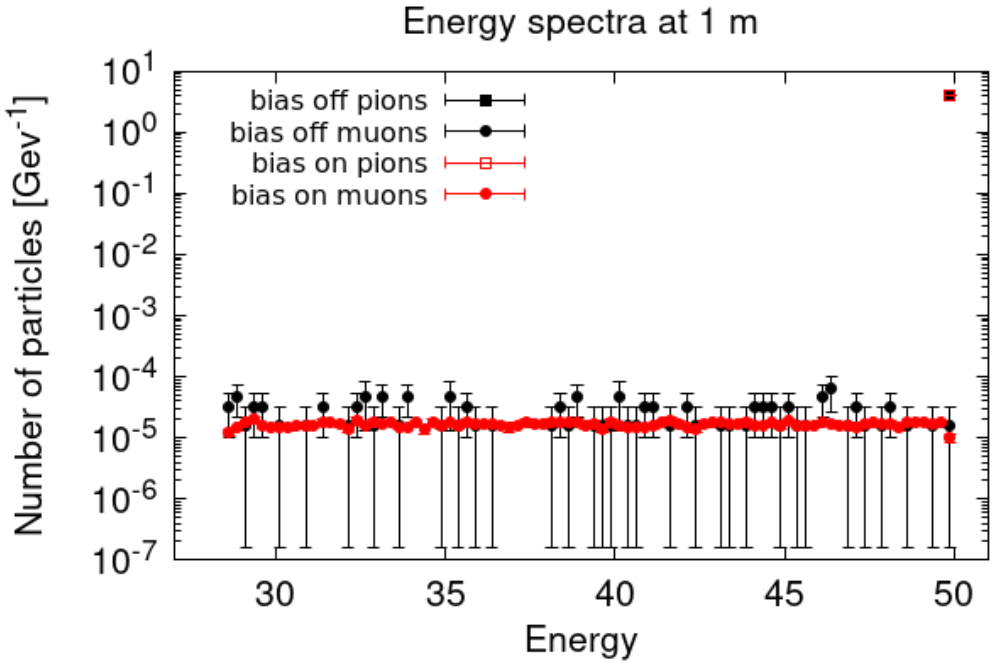
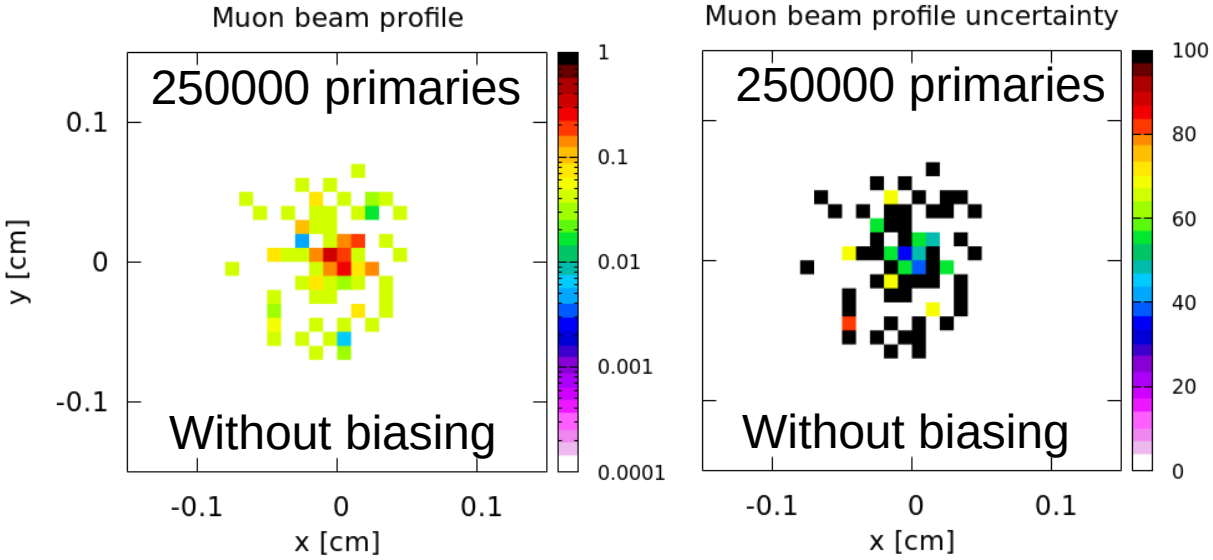
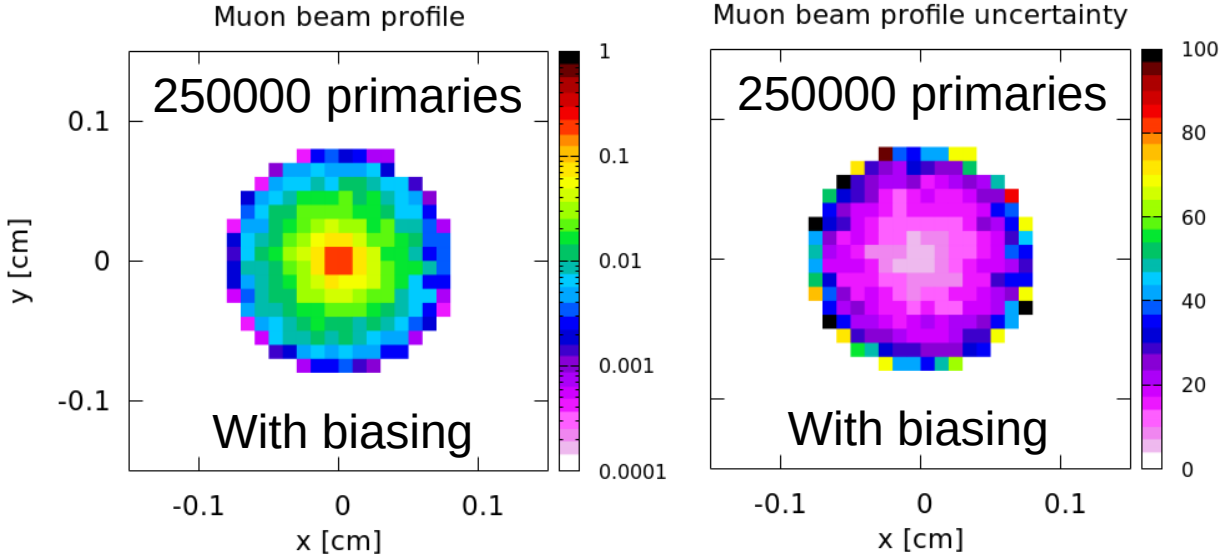
Lifetime biasing exercise

Lifetime biasing exercise

- Try to replicate the plots shown in the lecture







Lifetime biasing exercise

Input preparation and running

- Start from the input file provided
- No need to change the geometry (pions traveling in vacuum)
- Add preprocessor instructions to use the same input to run with and without biasing
- Decrease pion lifetime by a factor 100
- Run a total of 250000 primaries, use cycles and spawn
- Do not forget to merge the results

Lifetime biasing exercise

Plotting results

- In flair Geometry tab
  - Create four new layers to show "`pion+`" and "`muon+`" fluence with and without biasing
  - Add for each layer the appropriate USRBIN and detector
  - Use transverse and longitudinal views to see the biasing effect
- In flair Plot tab
  - Create one USRBDX plot (USR-1D) with two detectors:
    - one for the simulations without and one for the simulations with biasing
  - Create four USRBIN plots:
    - Muon profile without biasing
    - Error on the muon profile without biasing
    - Muon profile with biasing
    - Error on the muon profile with biasing
  - Compare the results

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