StandaloneGBP

Updates

Università degli Studi di Padova

Contents

- Initial beam
  1. Beam monitor (x,y,z-distribution)
  2. Energy spectrum of all/charged primaries (linear, log-log, log-log with variable size bins)
  3. 3D spatial distribution (number, energy-weighted)
- Detector
  4. Total energy deposited / BX vs strip nb. - contributions from particles entering the detector are shown as function of their e. charge.*
     *currently only upstream is meaningful
  5. Total energy deposited /BX vs strip nb. - contributions from e.dep.s in different energy ranges are shown in colours.
  6. Longitudinal energy depositions profile
  7. Energy spectrum of depositions (linear, log) - contributions from particles entering the detector are shown as function of their e. charge.*
     *currently only upstream is meaningful
  8. ~~Energy spectrum of depositions in central strip #100~~
  9. Map of energy depositions (colour scale is in keV)
  10. Dose map (colour scale is in Gy)
- Profile reconstruction
  11. With the ‘hit’ method (1 keV threshold)
  12. Gaussian fit of the hit profile

Contents

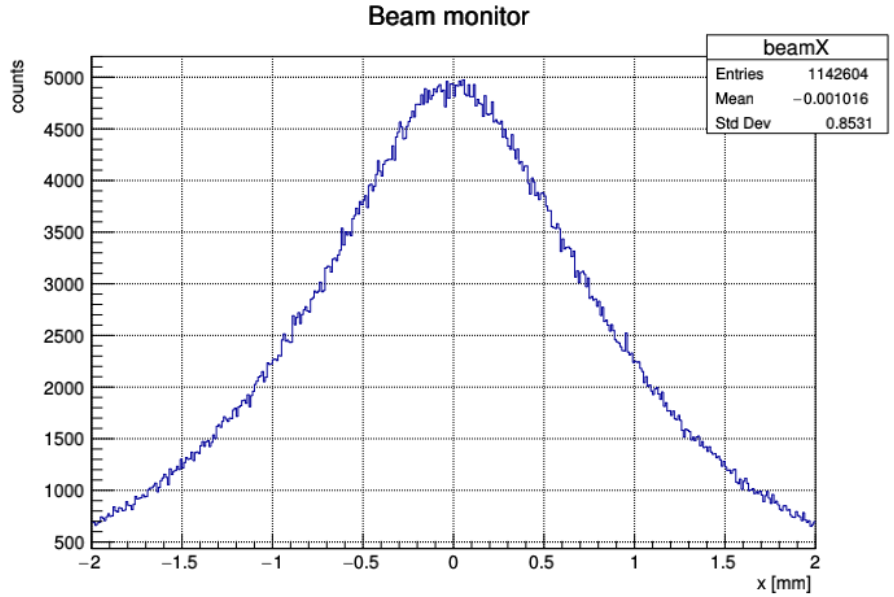
- Unused/crosscheck istograms

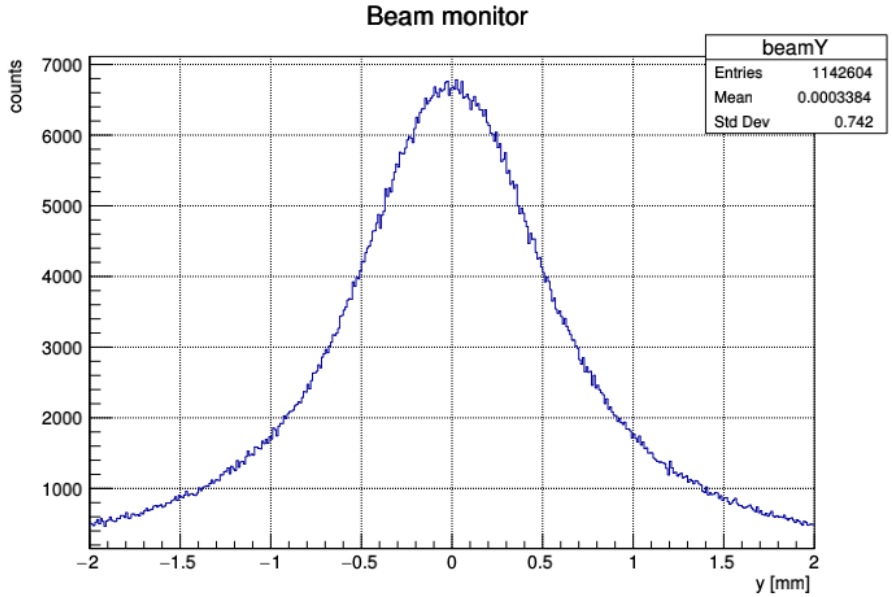
  ~~13. Total energy deposited / BX vs X – from 2D map~~

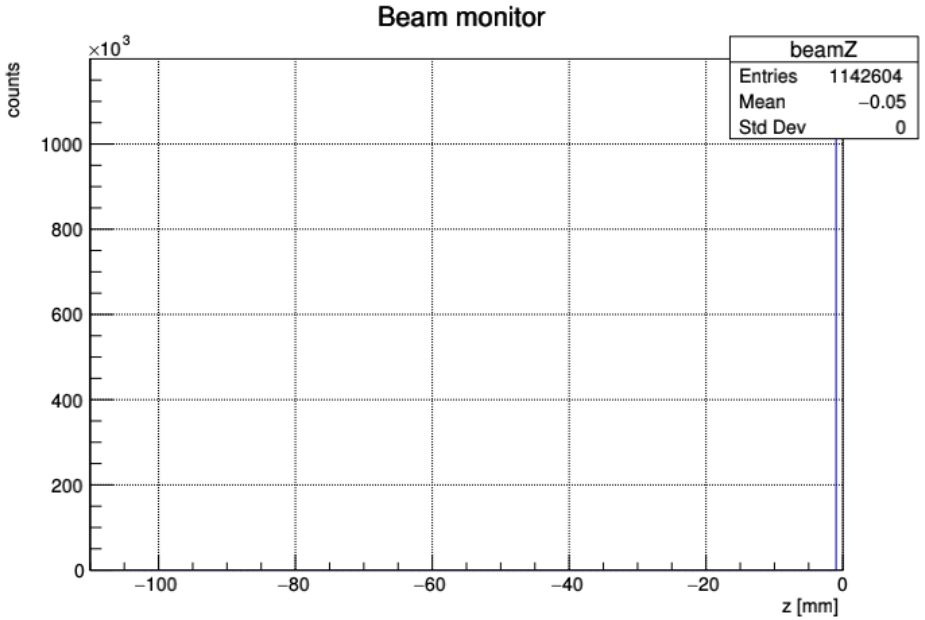
  This plot takes data from single e.dep.s (DebugTree) – hence the higher number of entries

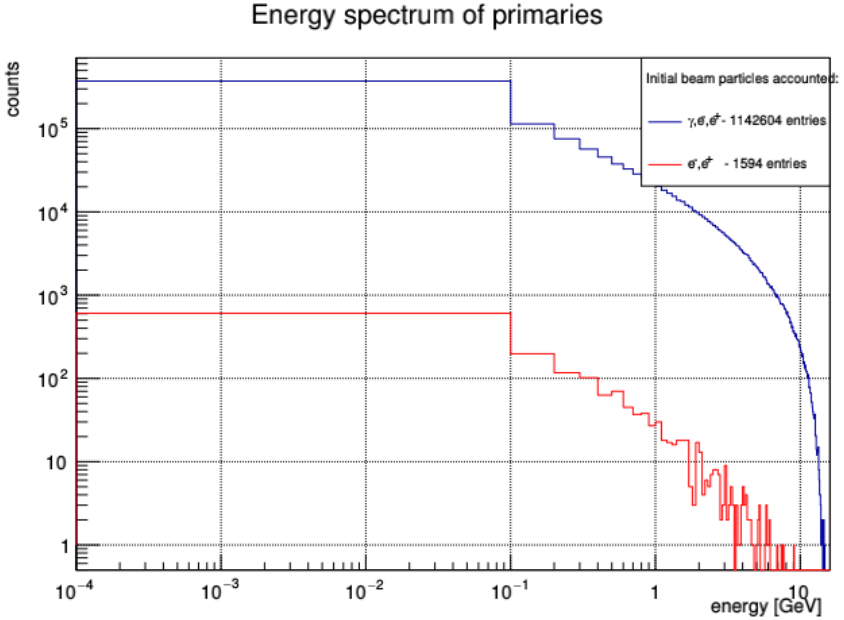
- Background
  - From the beamline
  - From the beam dump

χ = 5 - Beam monitor & energy spectrum

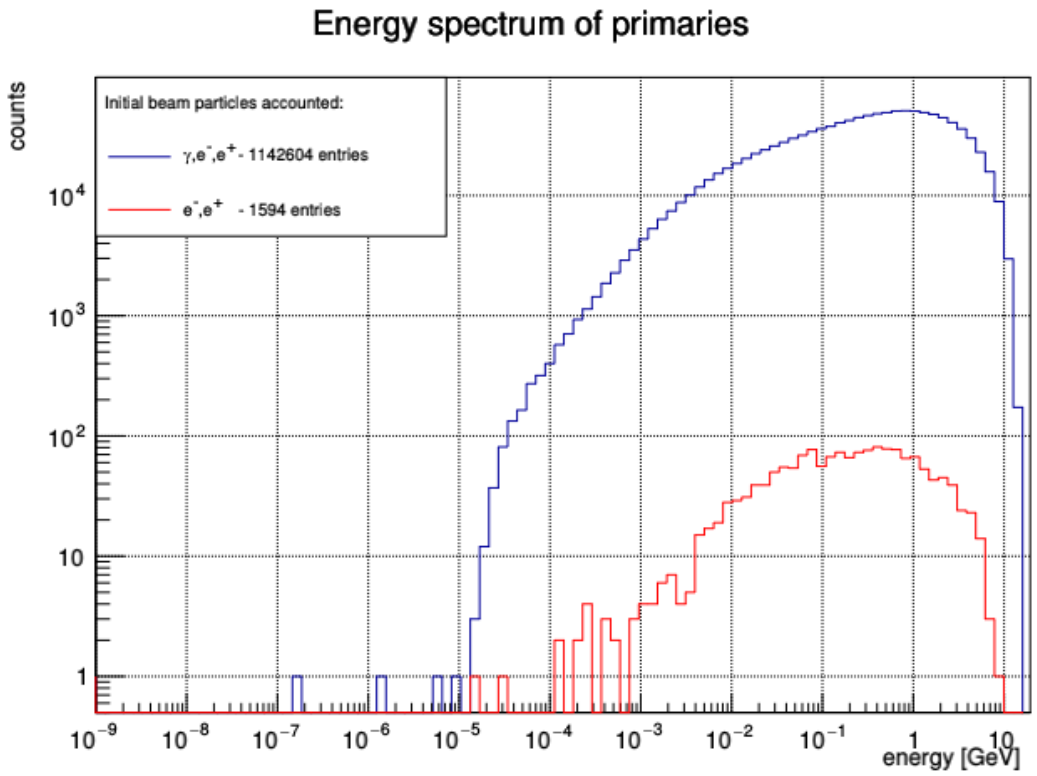


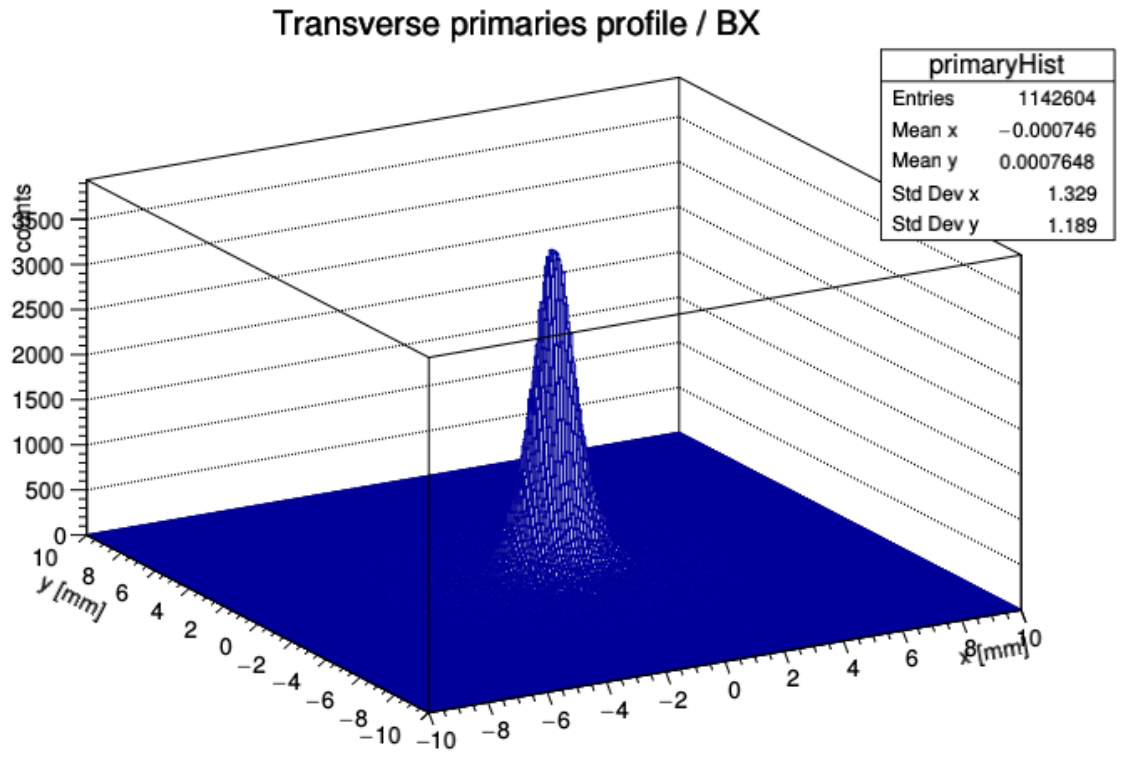




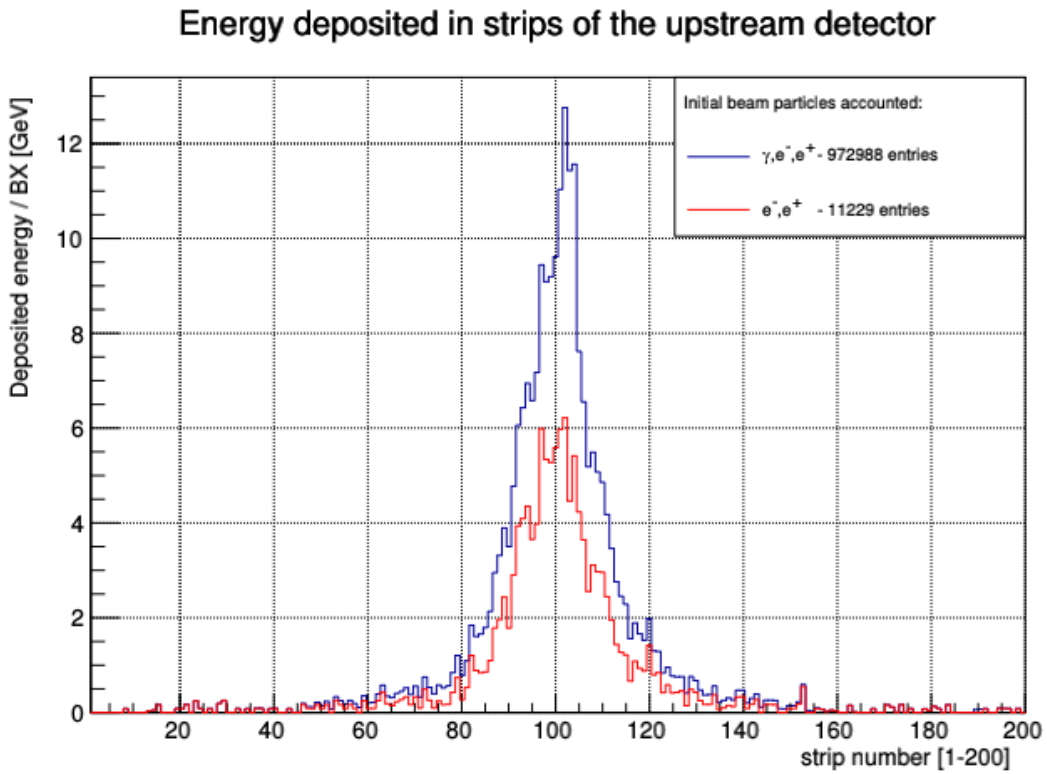


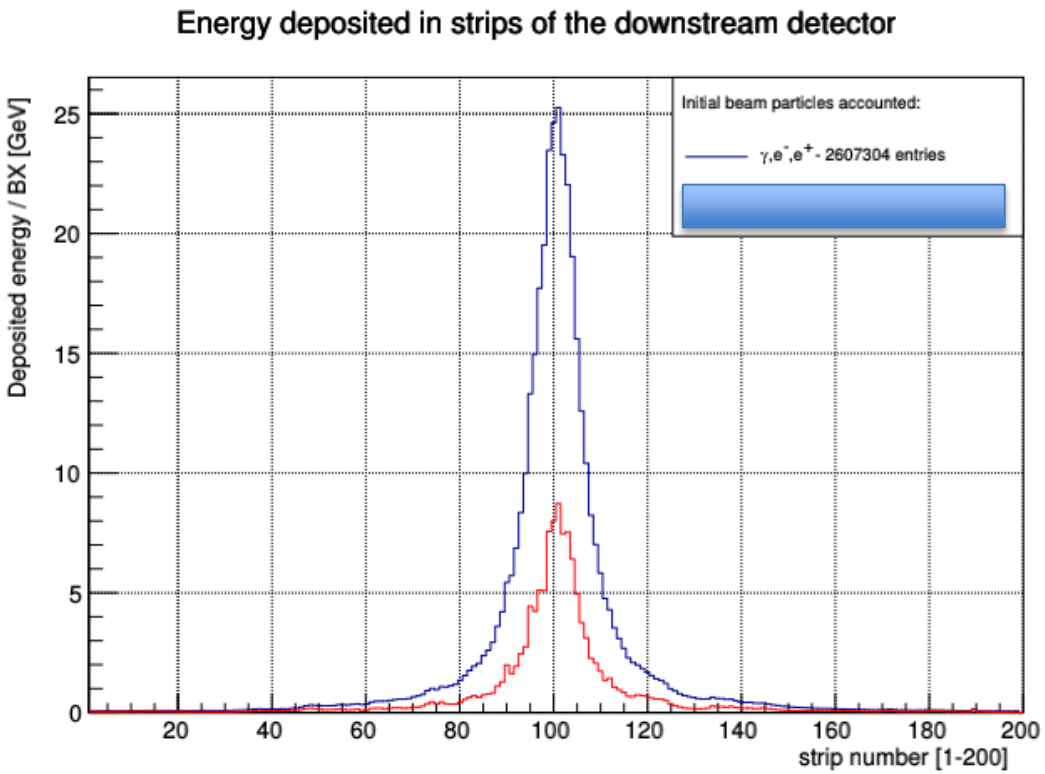
χ = 5 - Primaries energy spectrum & profile





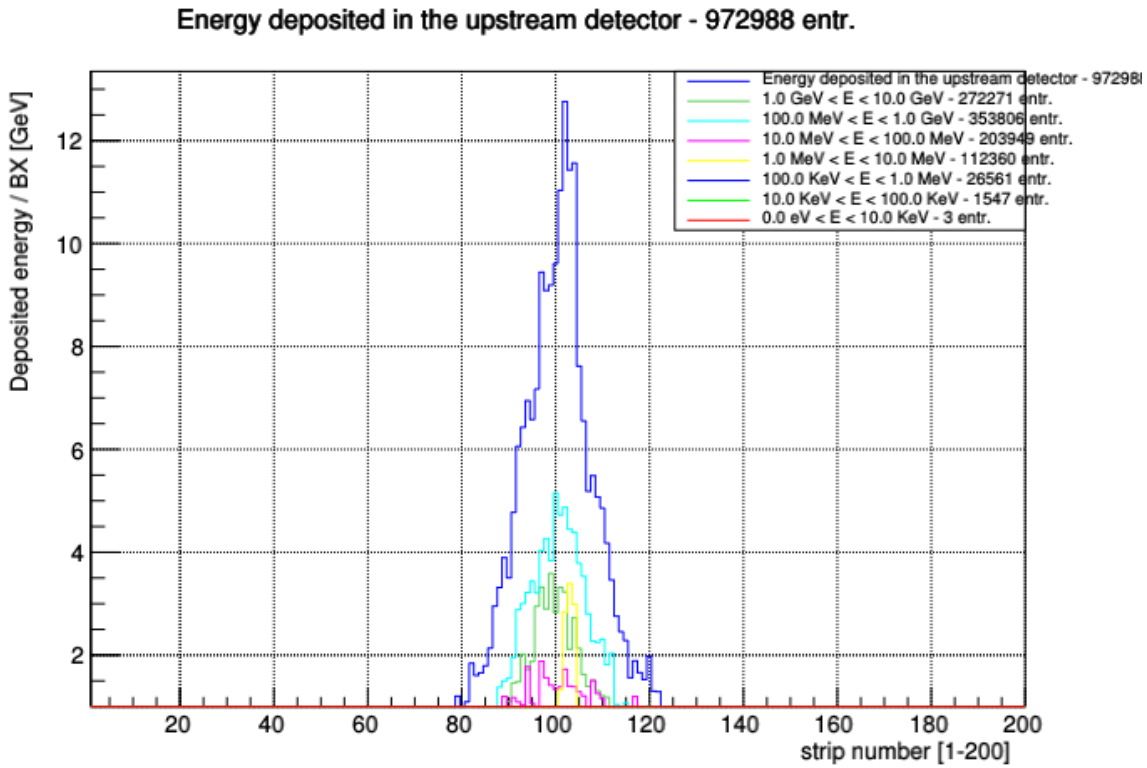
χ = 5 - Total energy deposited / BX vs strip nb.

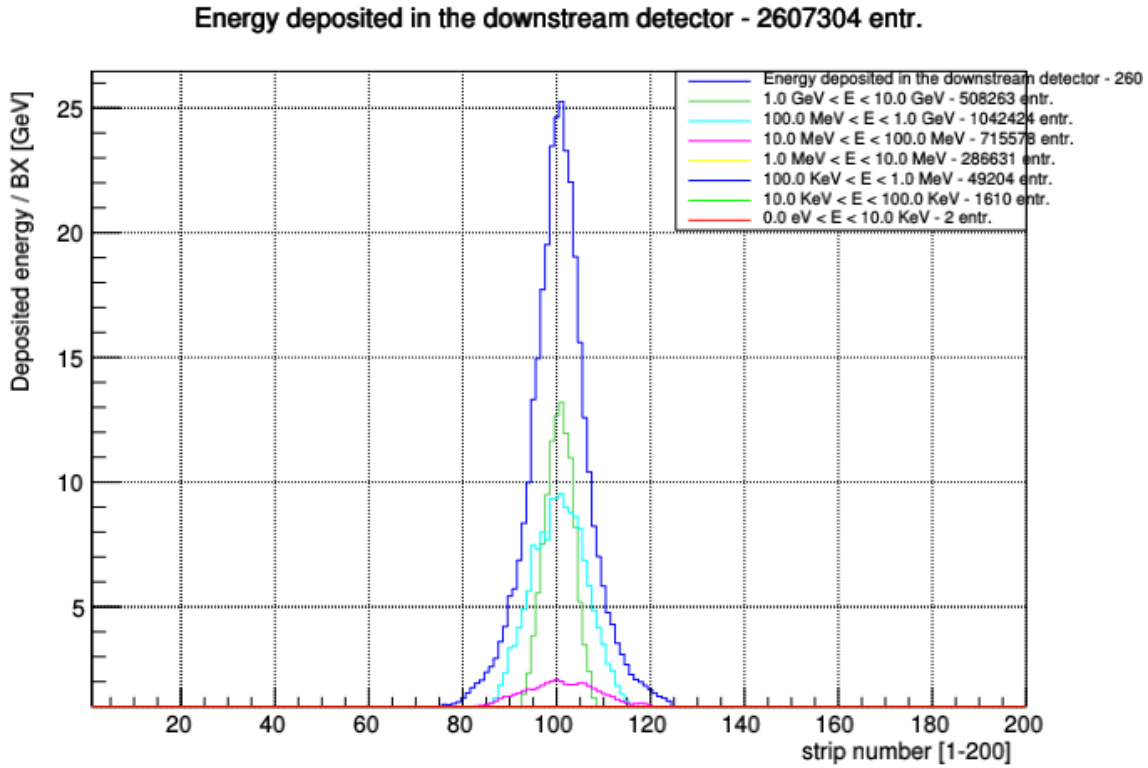




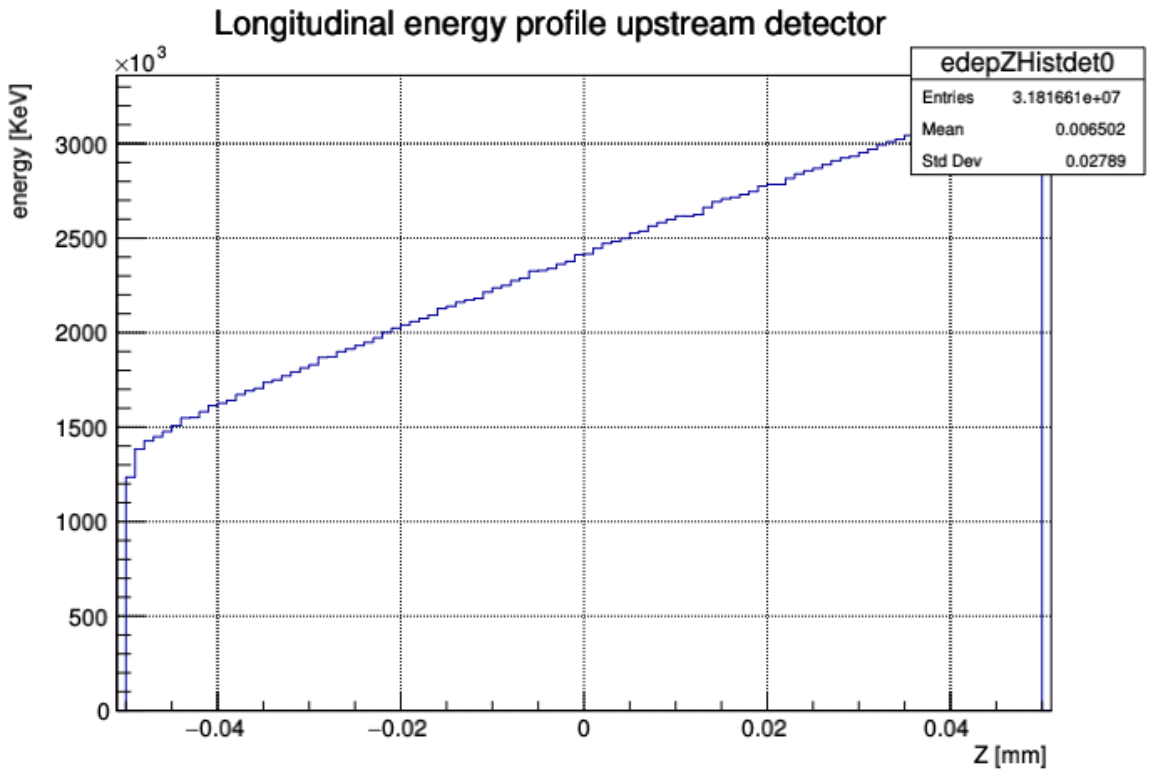
The different entries here (between up/downstream det.) are normal. Consider that (a) entries in monitor histograms are MC weighted (to 1 entry corresponds 1500 particles); (b) of the T=1500*1142604 initial particles a number N will interact with the upstream detector and a number M > N with the downstream detector; (c) only interactions with energy deposition are entries in the plots above.

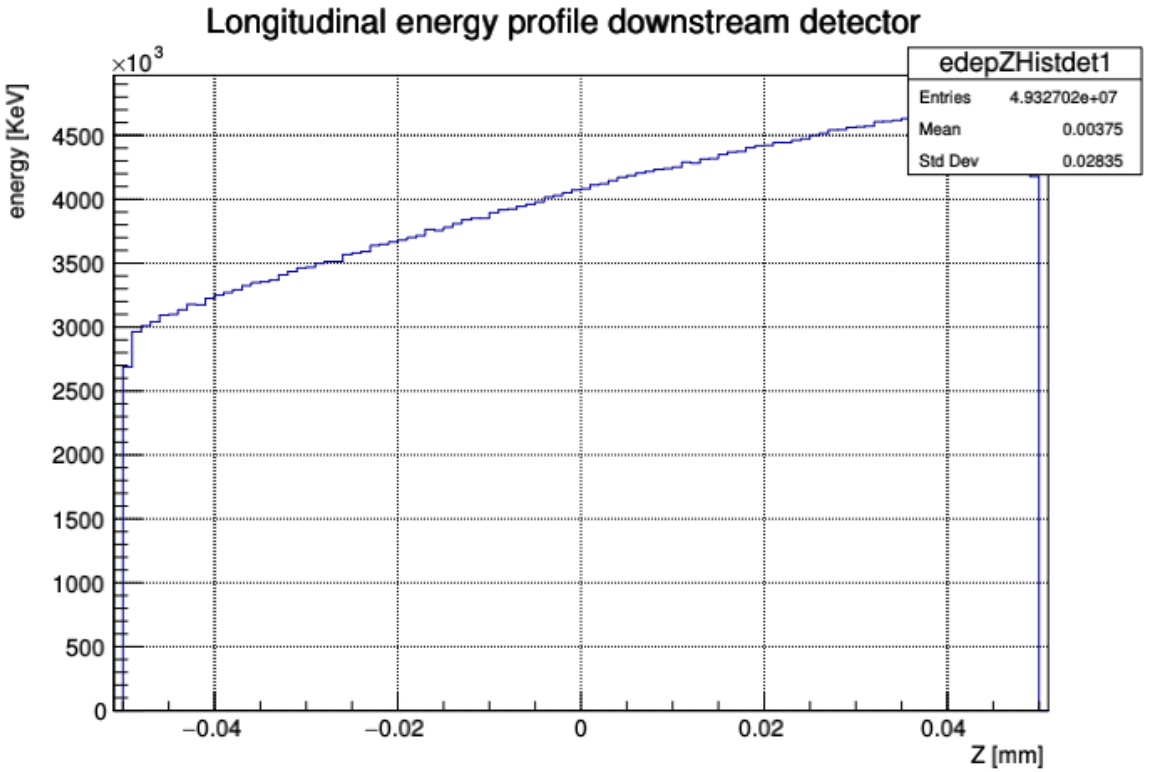
χ = 5 - Total energy deposited / BX vs strip nb.



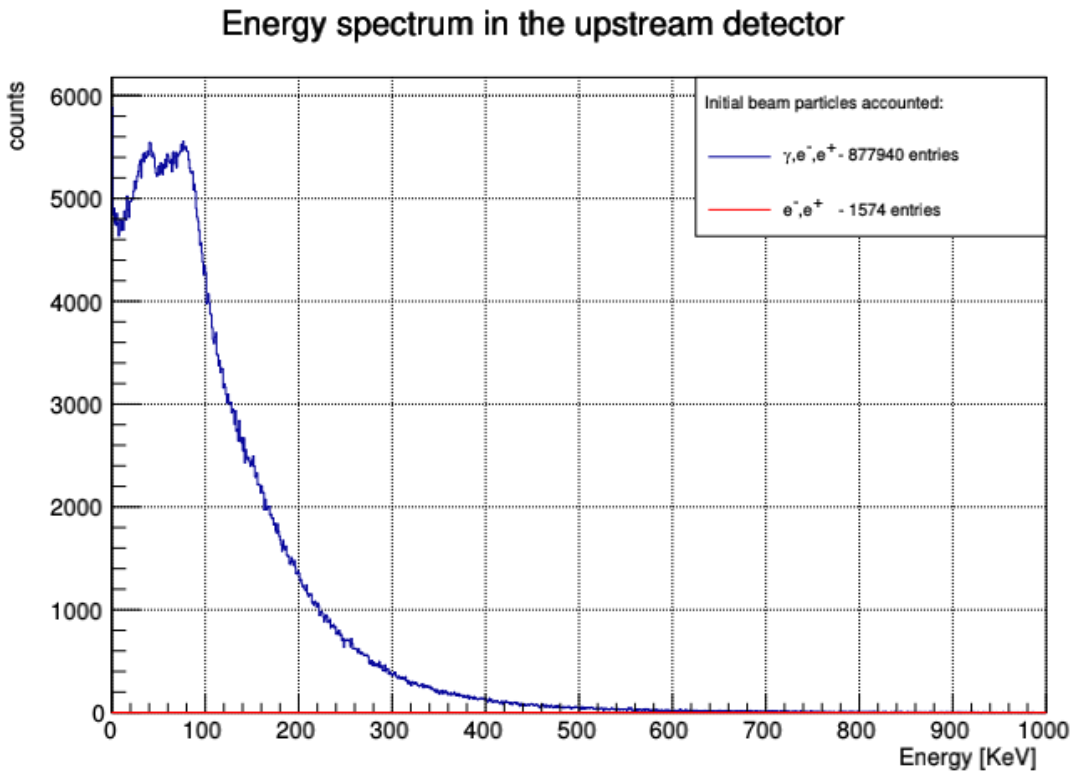


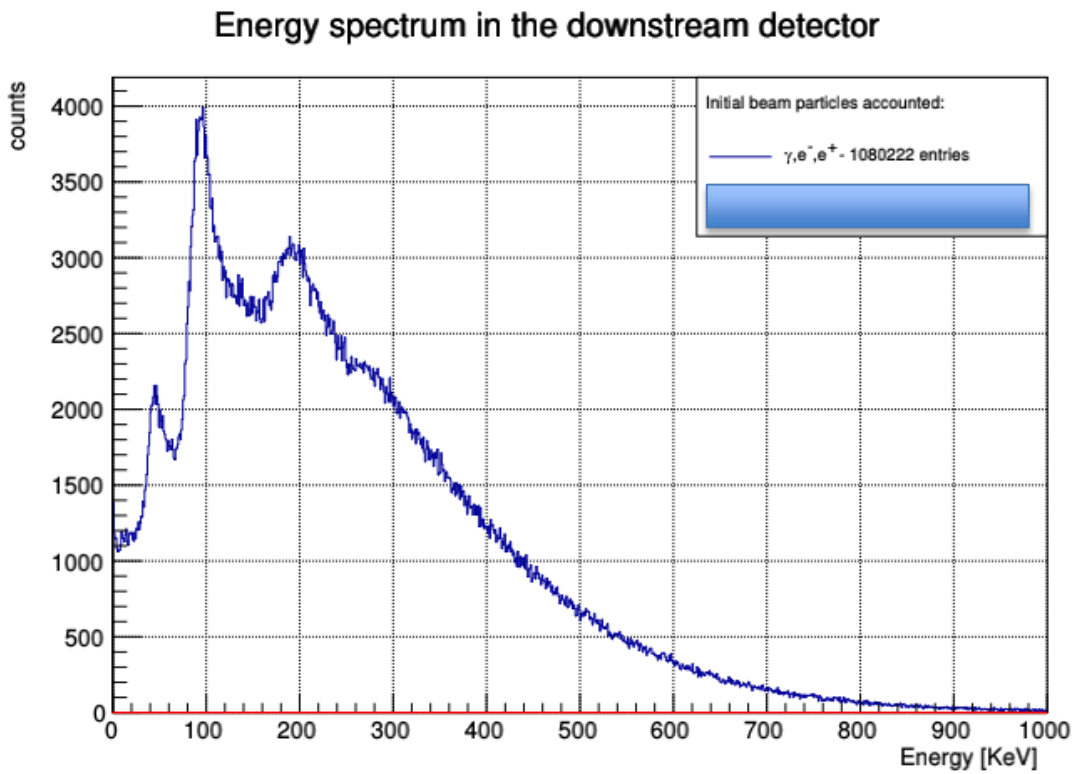
χ = 5 - Longitudinal depositions profile



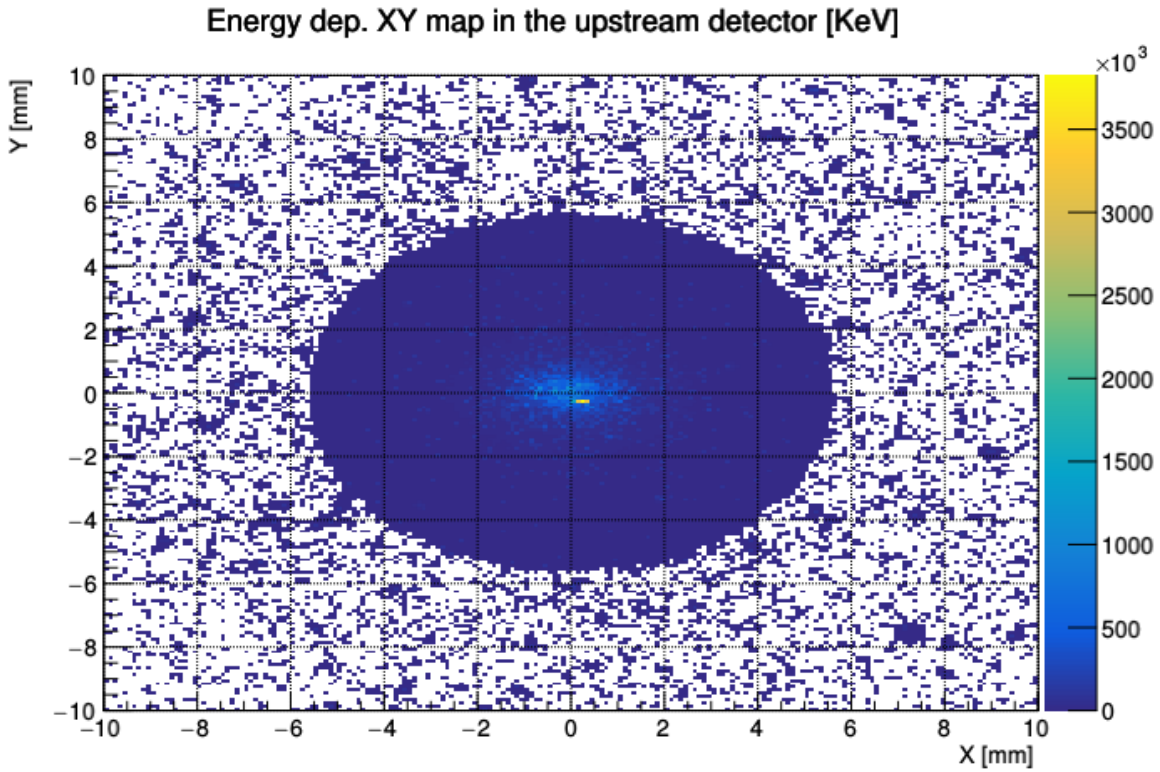


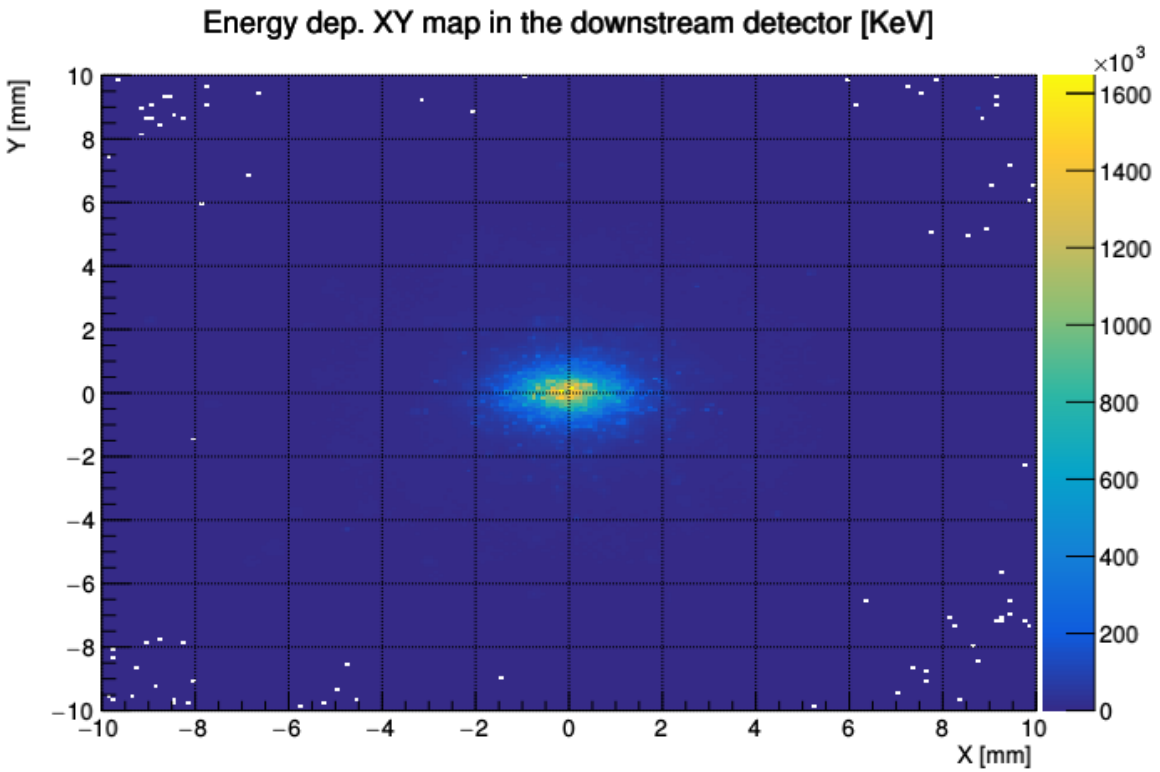
χ = 5 - Spectrum of e.dep.s (chg)



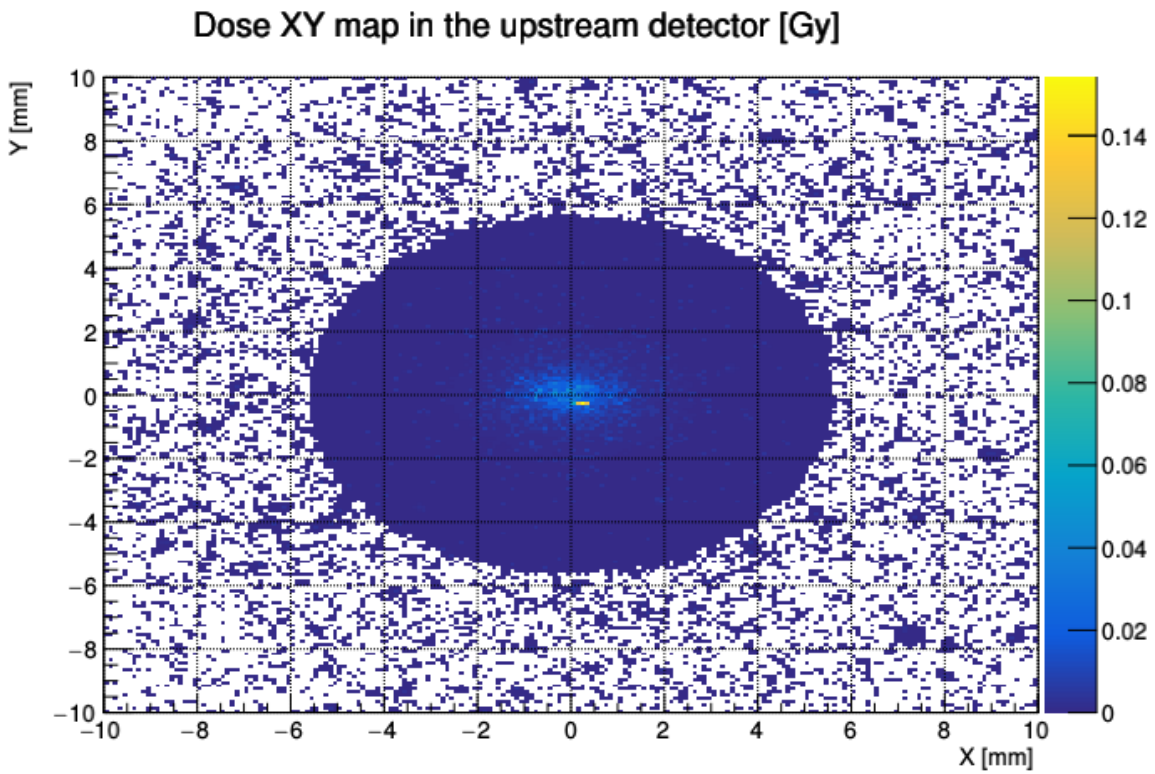


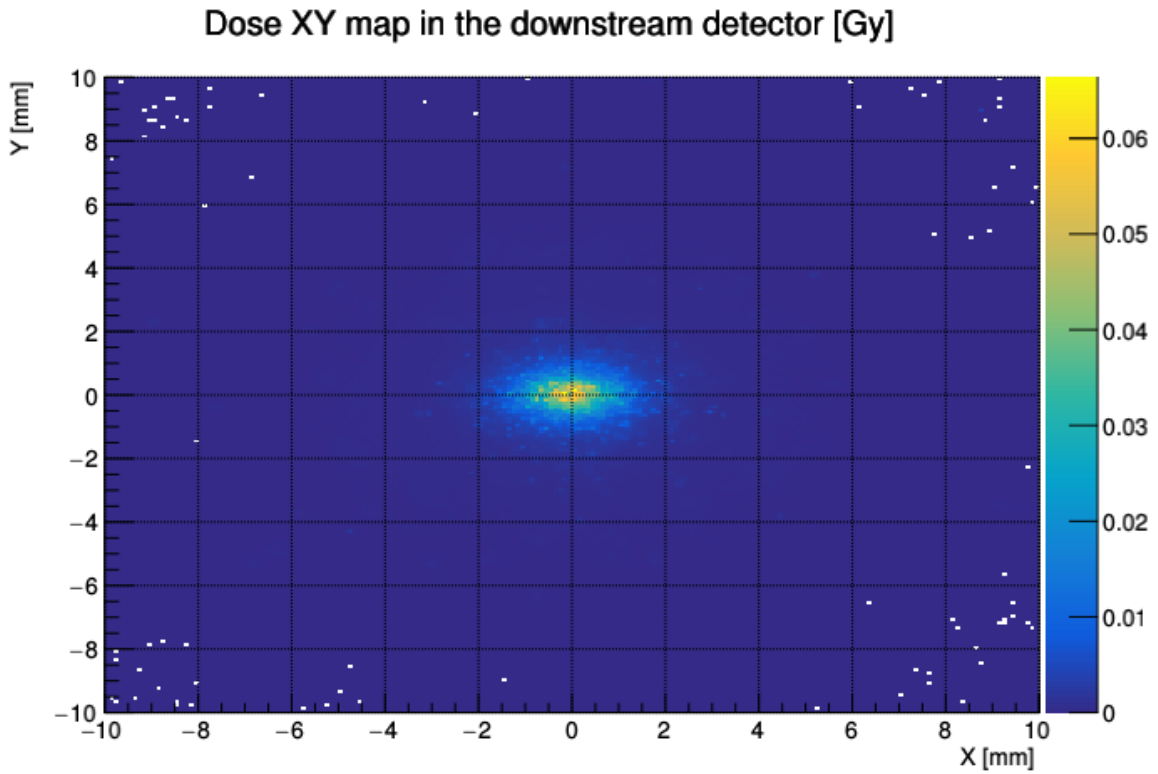
χ = 5 - Map of energy depositions



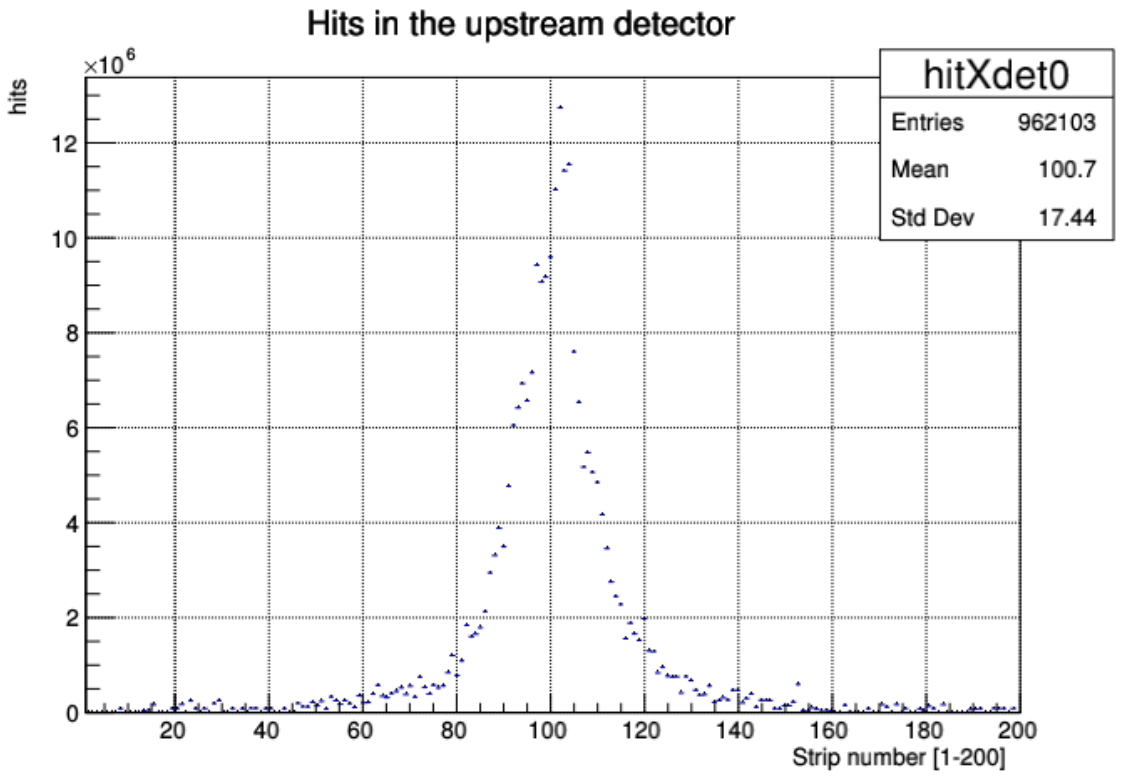


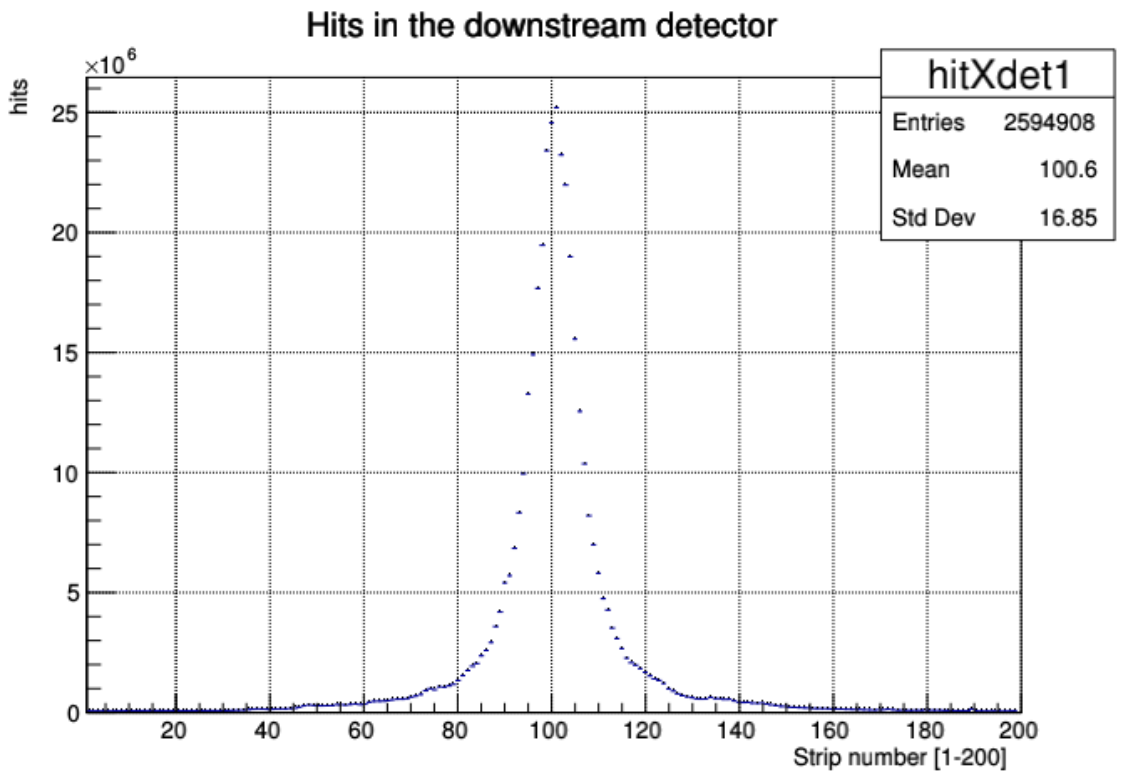
χ = 5 - Dose map


Dose XY map in the upstream detector [Gy]
Y [mm]
X [mm]
10
8
6
4
2
0
−2
−4
−6
−8
−10
−10
−8
−6
−4
−2
0
2
4
6
8
10
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0

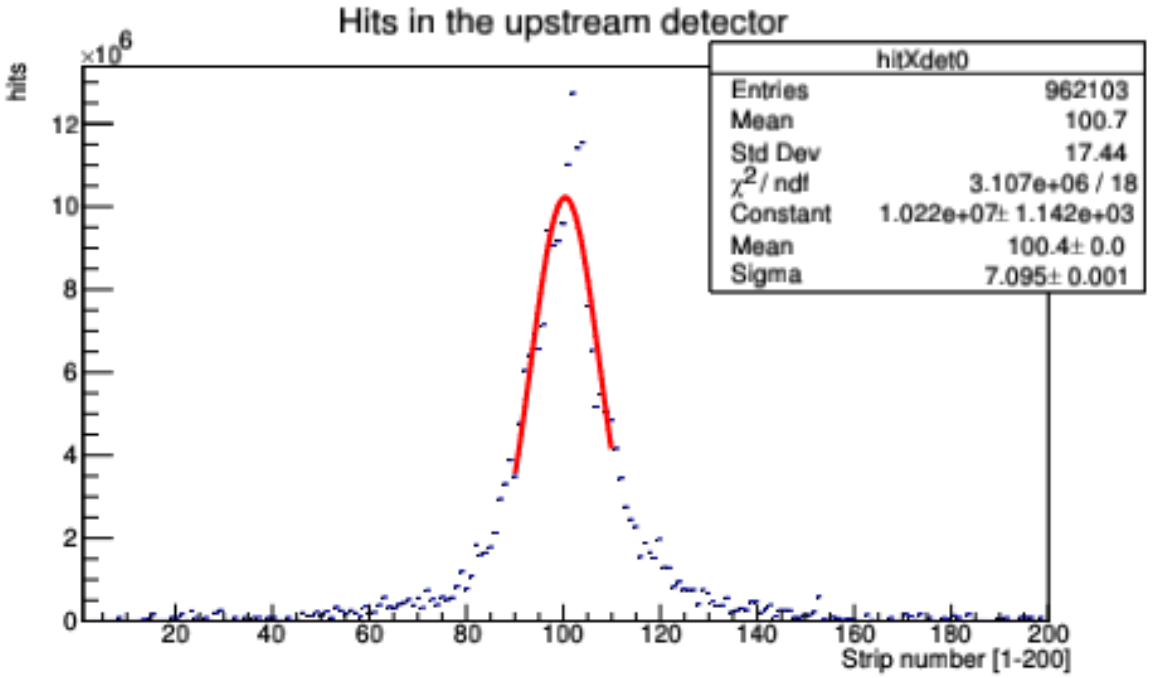

Dose XY map in the downstream detector [Gy]
Y [mm]
X [mm]
10
8
6
4
2
0
−2
−4
−6
−8
−10
−10
−8
−6
−4
−2
0
2
4
6
8
10
0.06
0.05
0.04
0.03
0.02
0.01
0

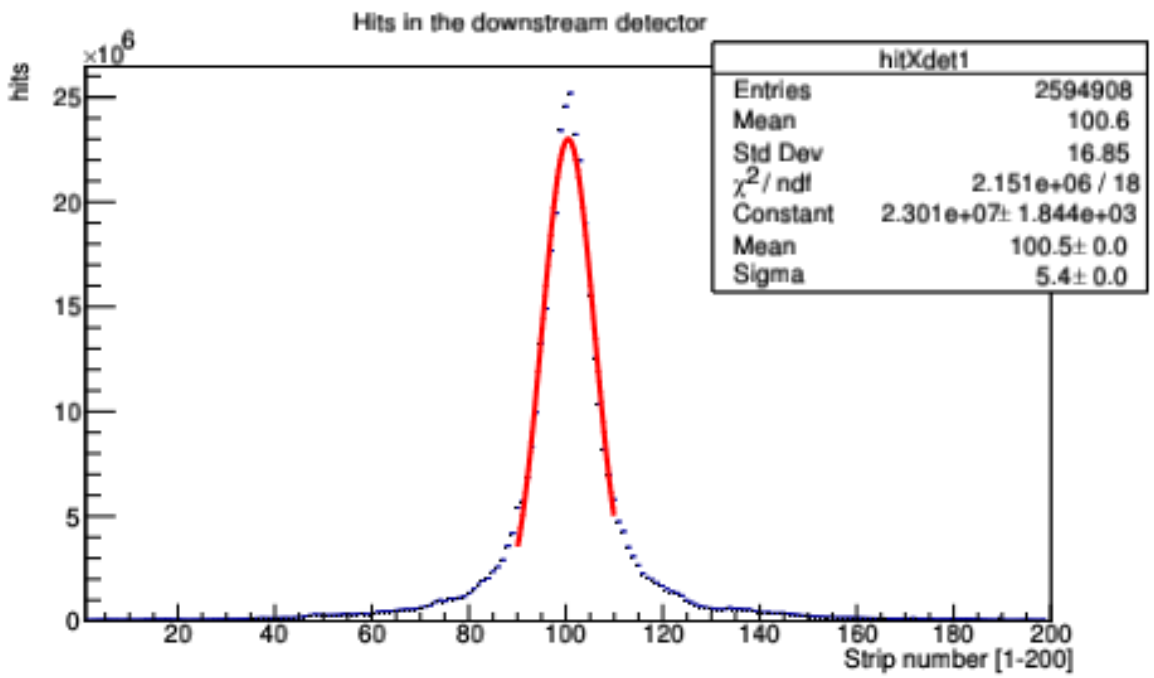
χ = 5 – Profile reconstruction



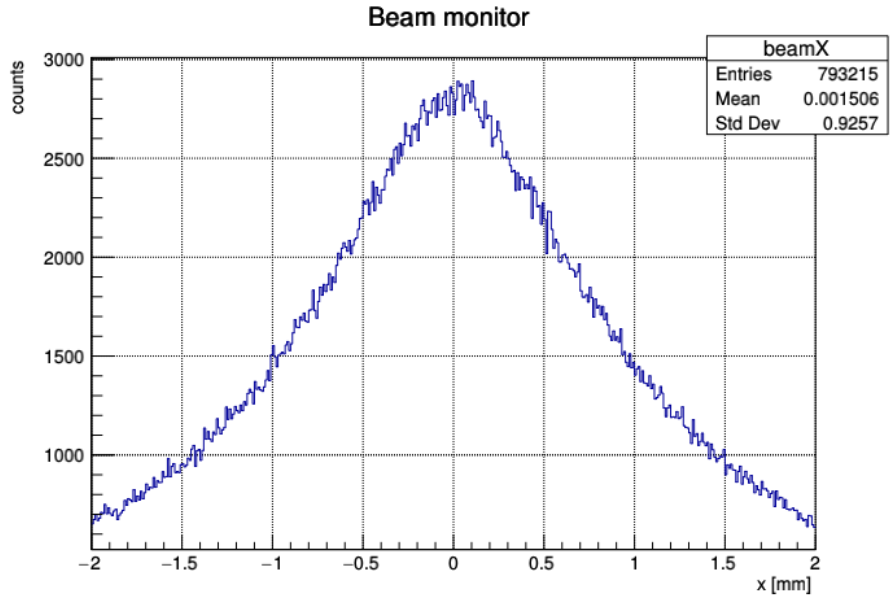


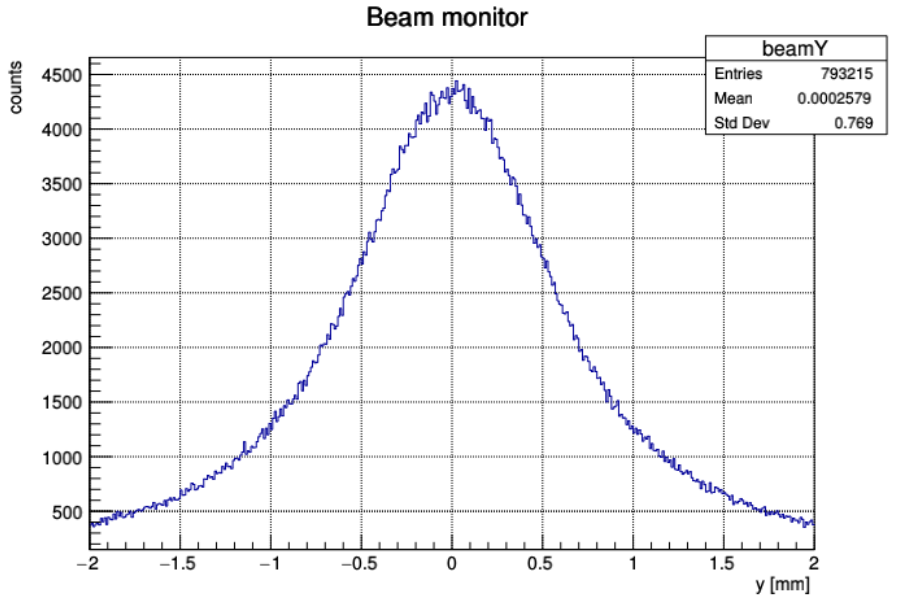
χ = 5 – Profile reconstruction

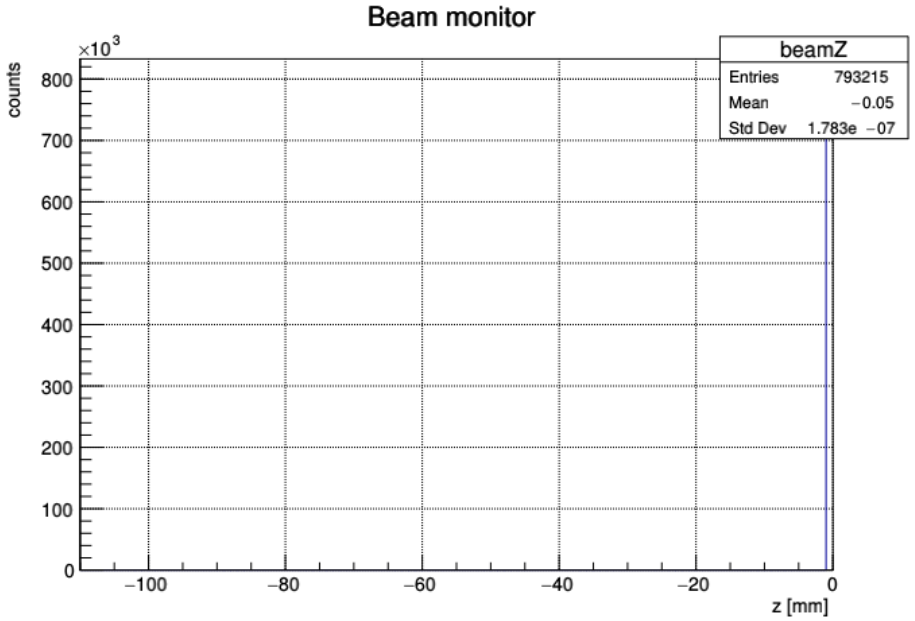


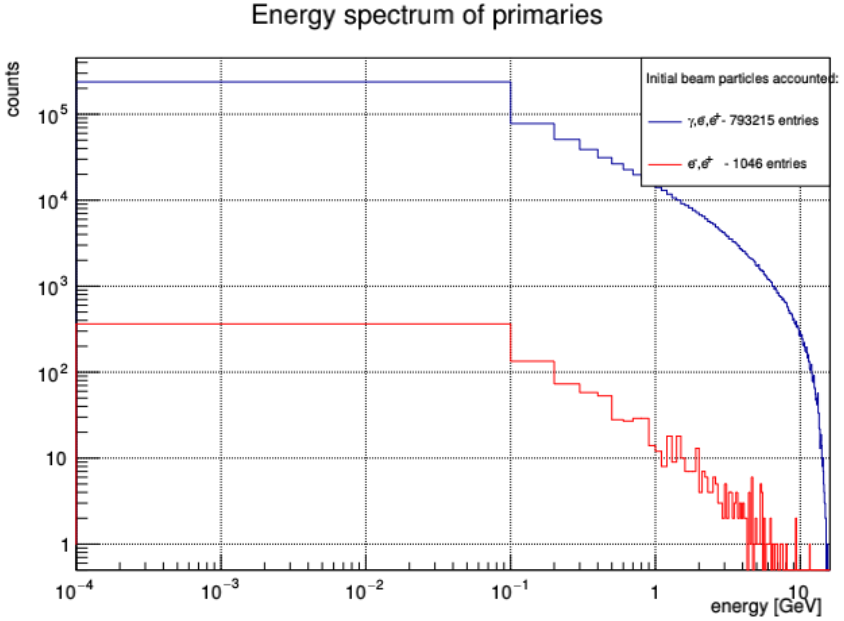


χ = 10 - Beam monitor & energy spectrum

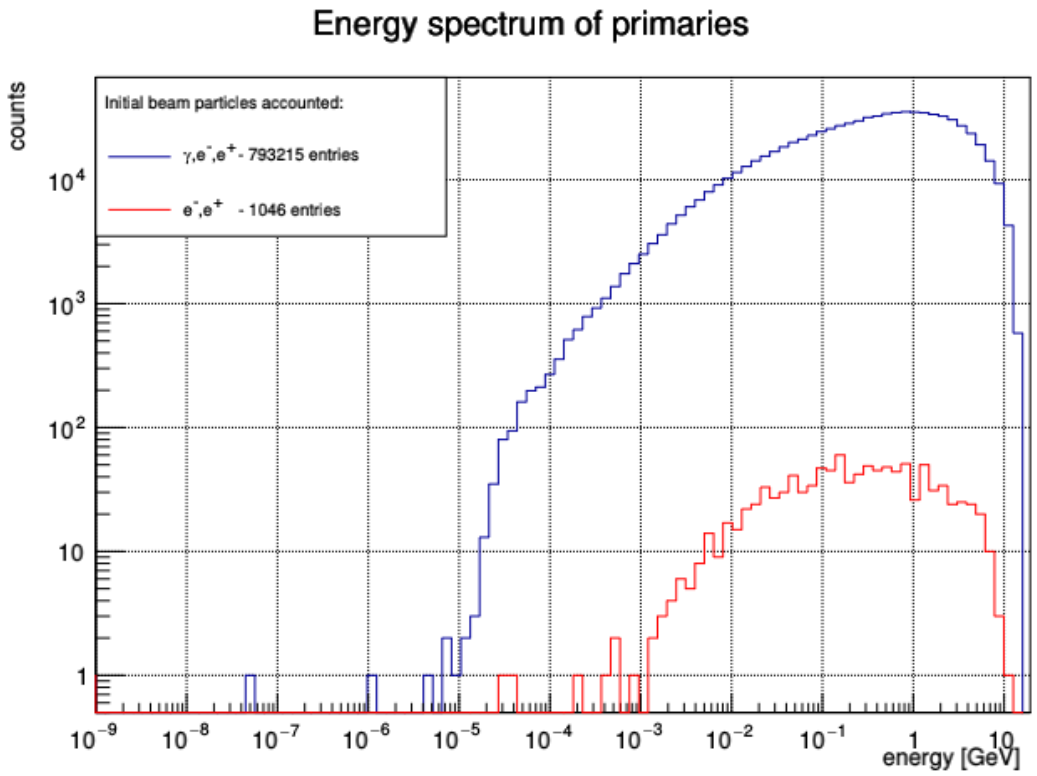


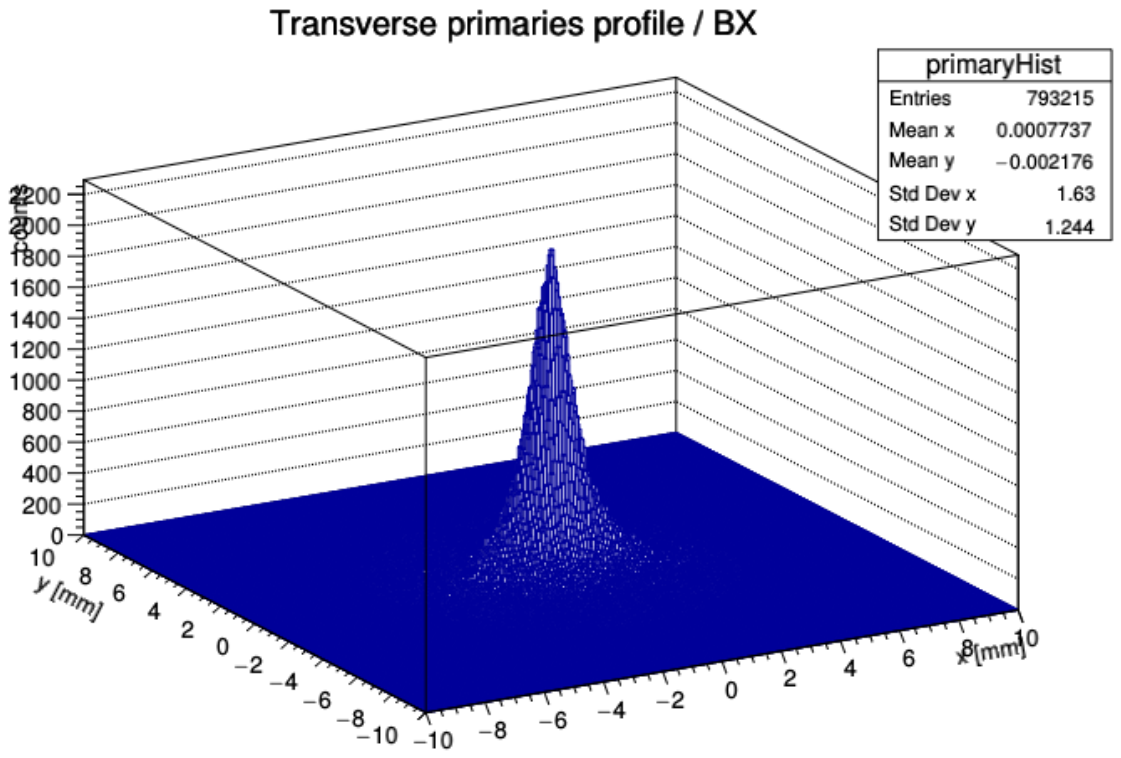




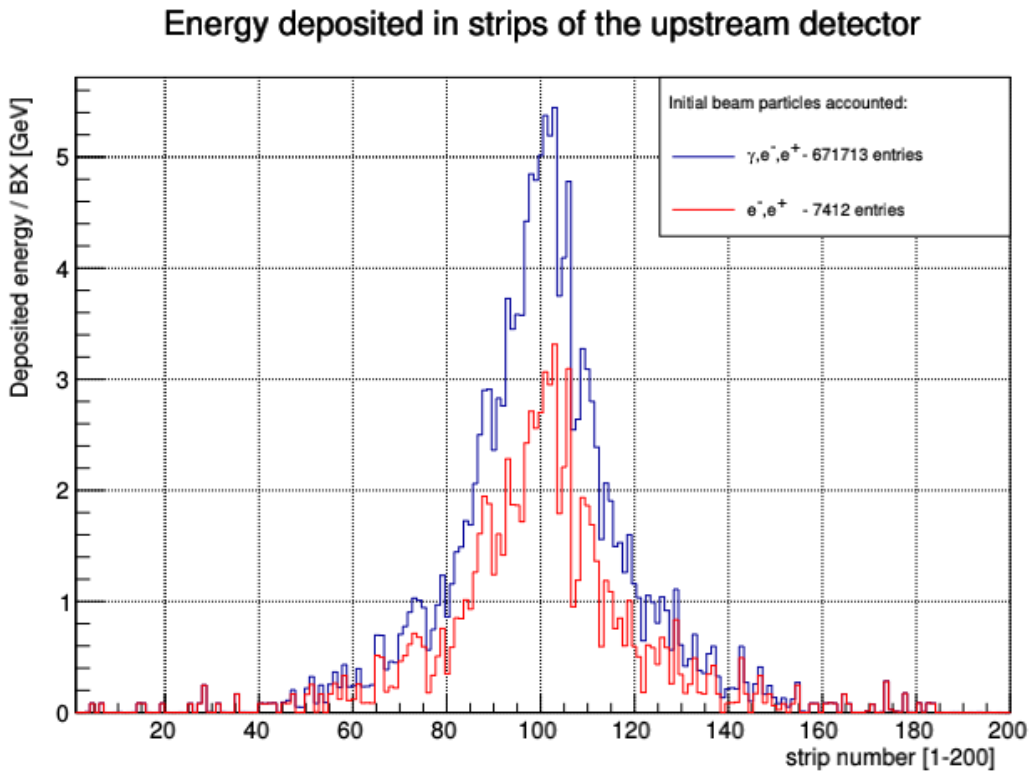


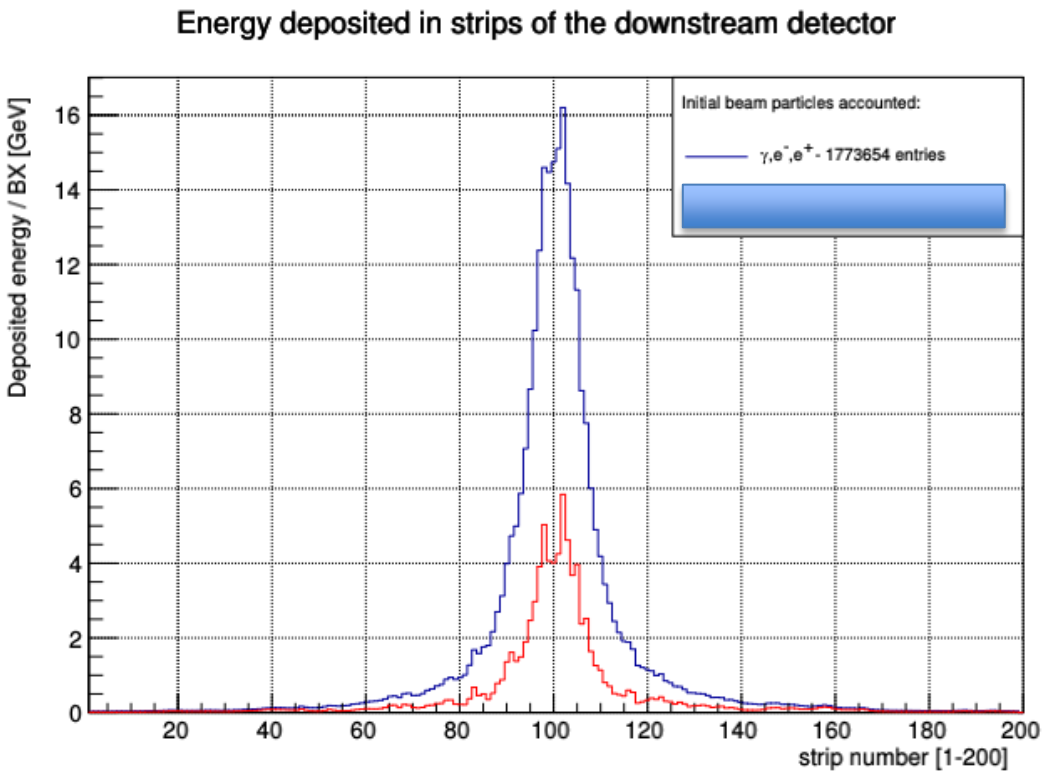
χ = 10 - Primaries energy spectrum & profile





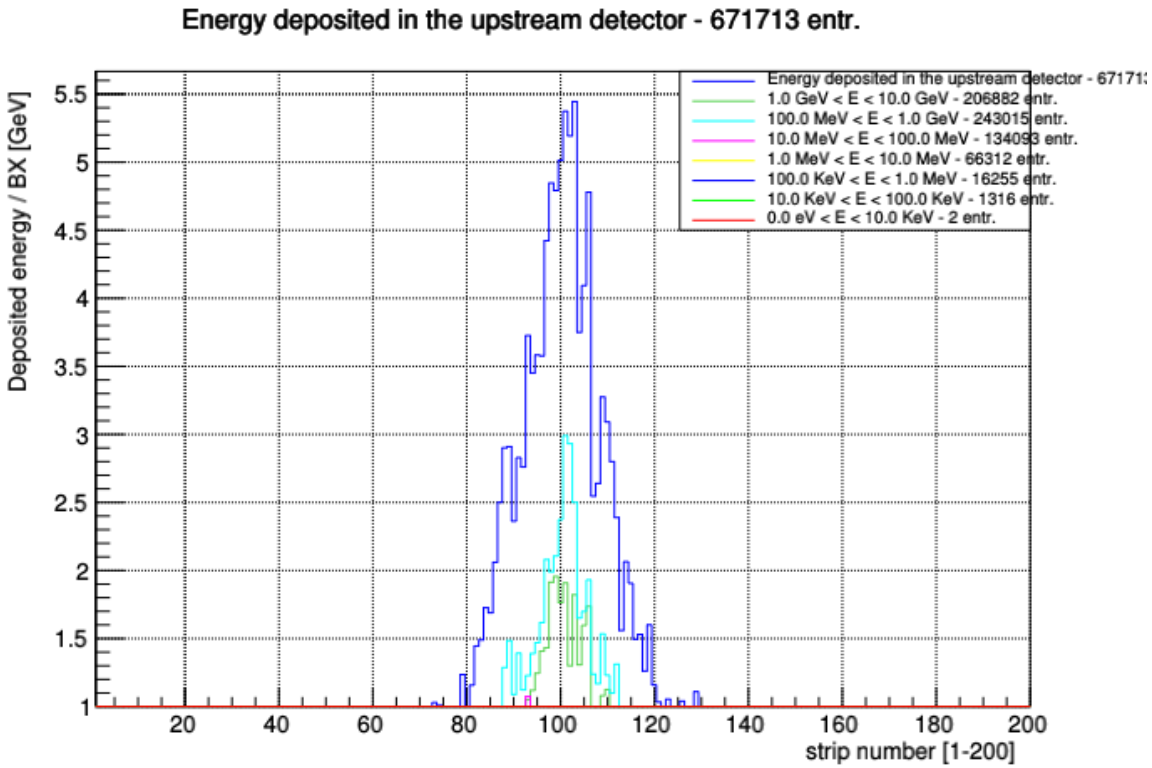
χ = 10 - Total energy deposited / BX vs strip nb.

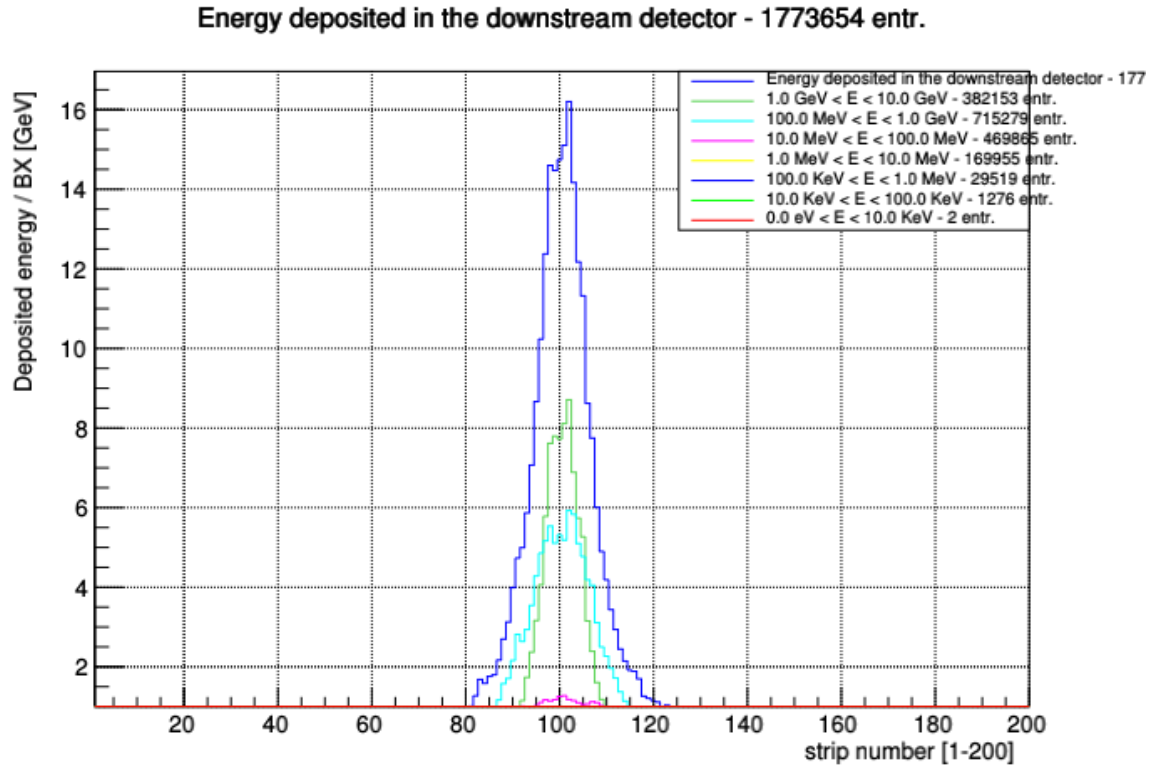




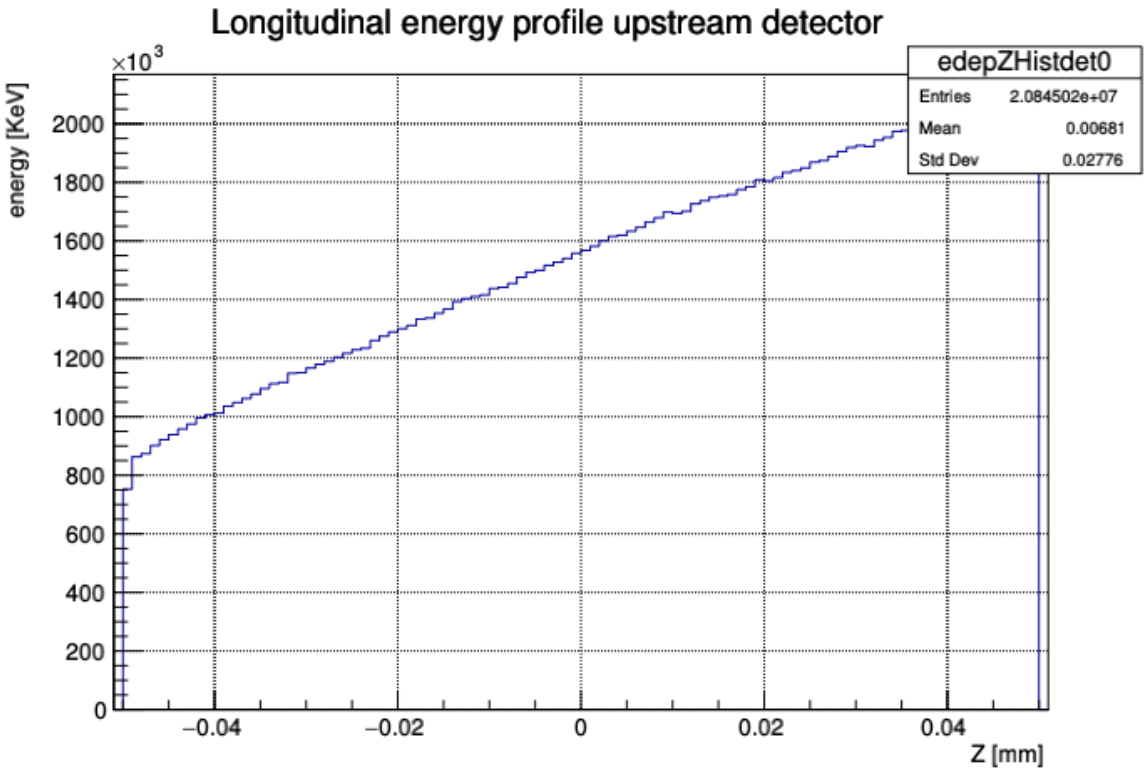
The different entries here (between up/downstream det.) are normal. Consider that (a) entries in monitor histograms are MC weighted (to 1 entry corresponds 1500 particles); (b) of the T=1500*1142604 initial particles a number N will interact with the upstream detector and a number M > N with the downstream detector; (c) only interactions with energy deposition are entries in the plots above.

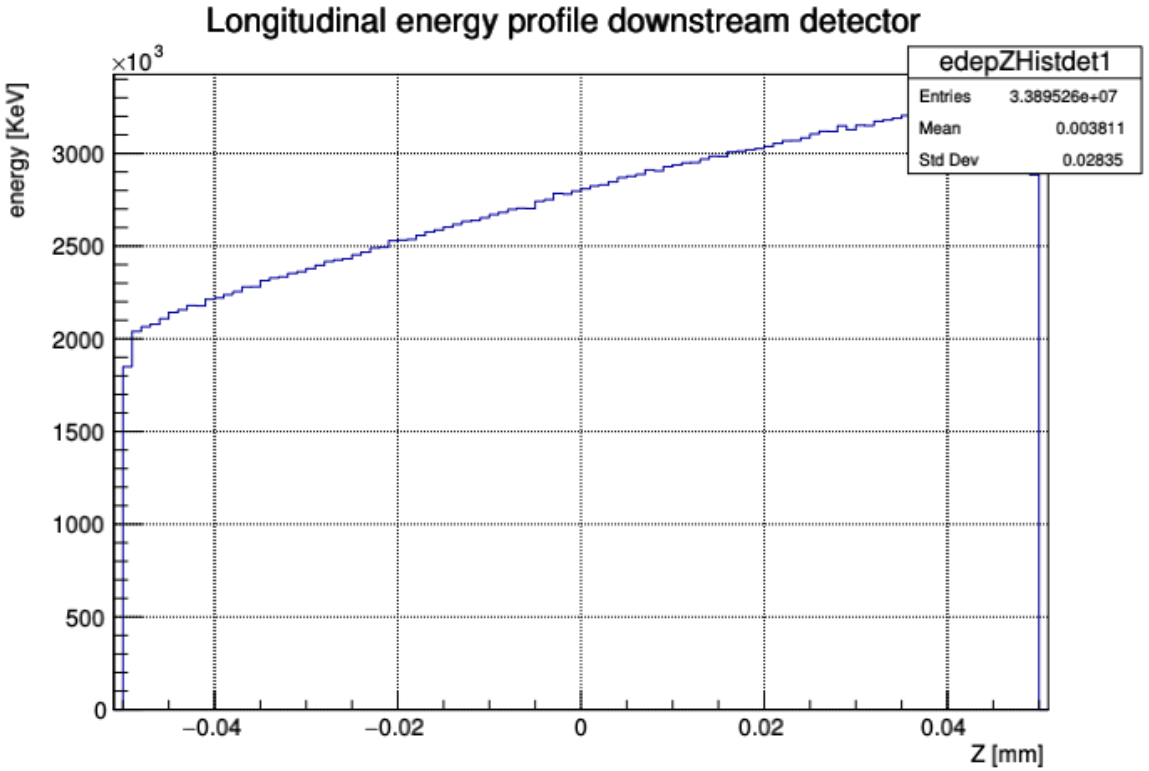
χ = 10 - Total energy deposited / BX vs strip nb.



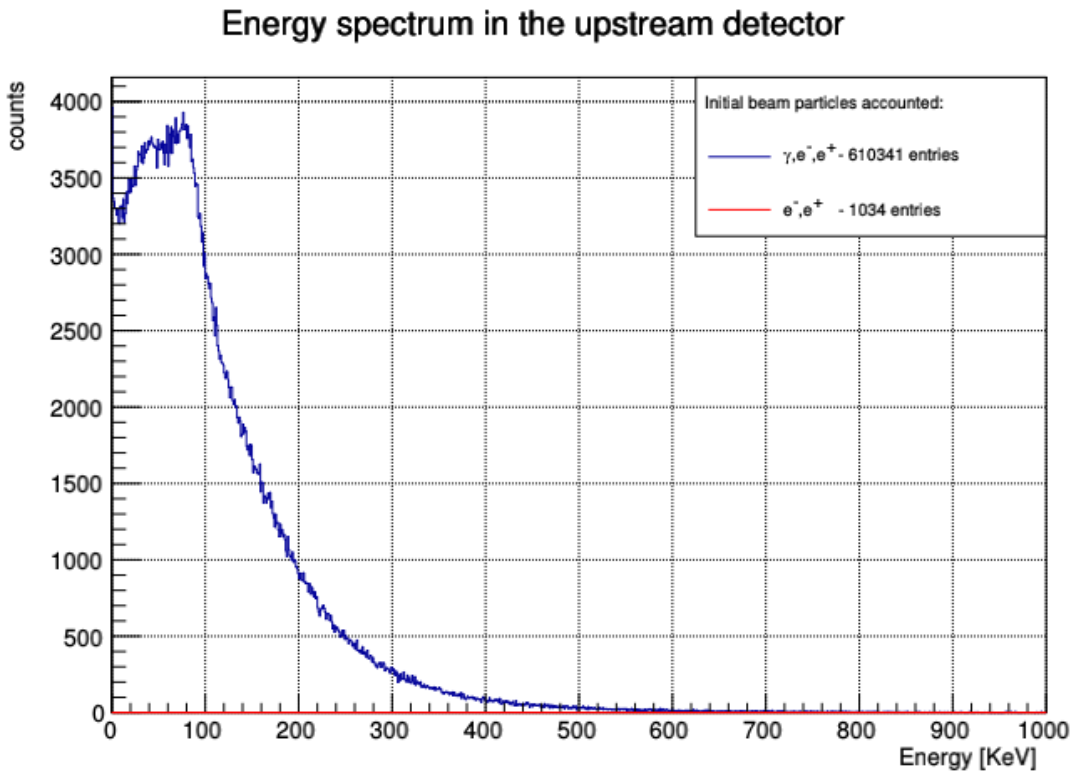


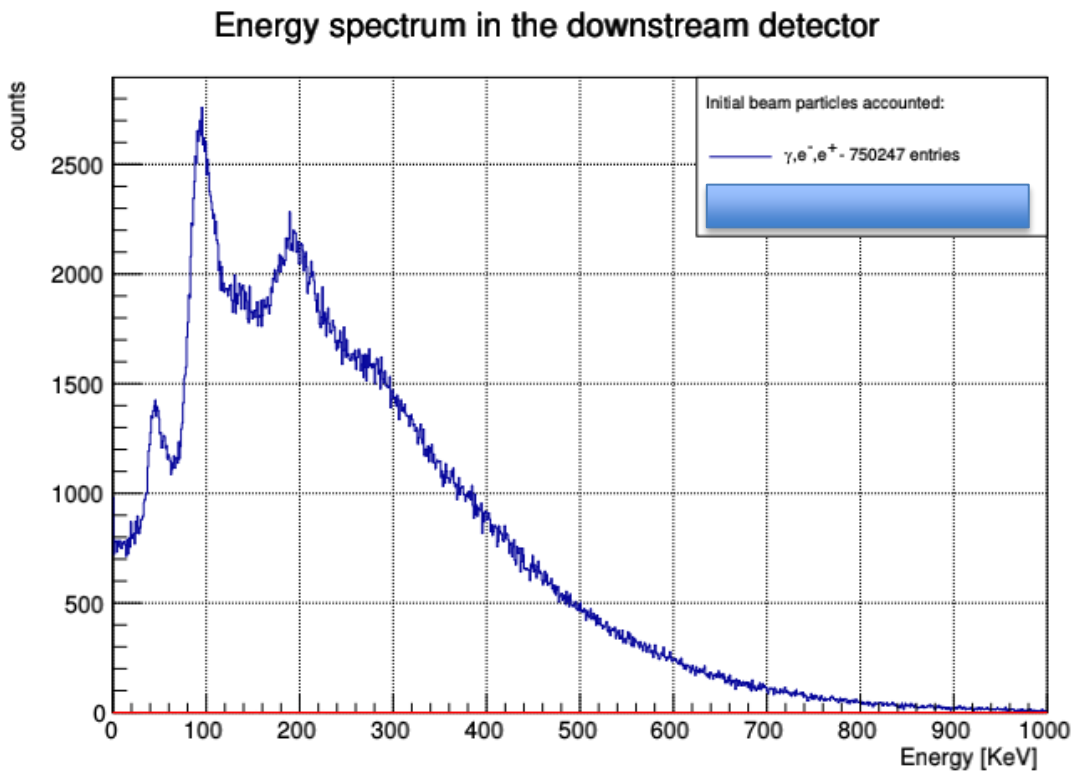
χ = 10 - Longitudinal depositions profile



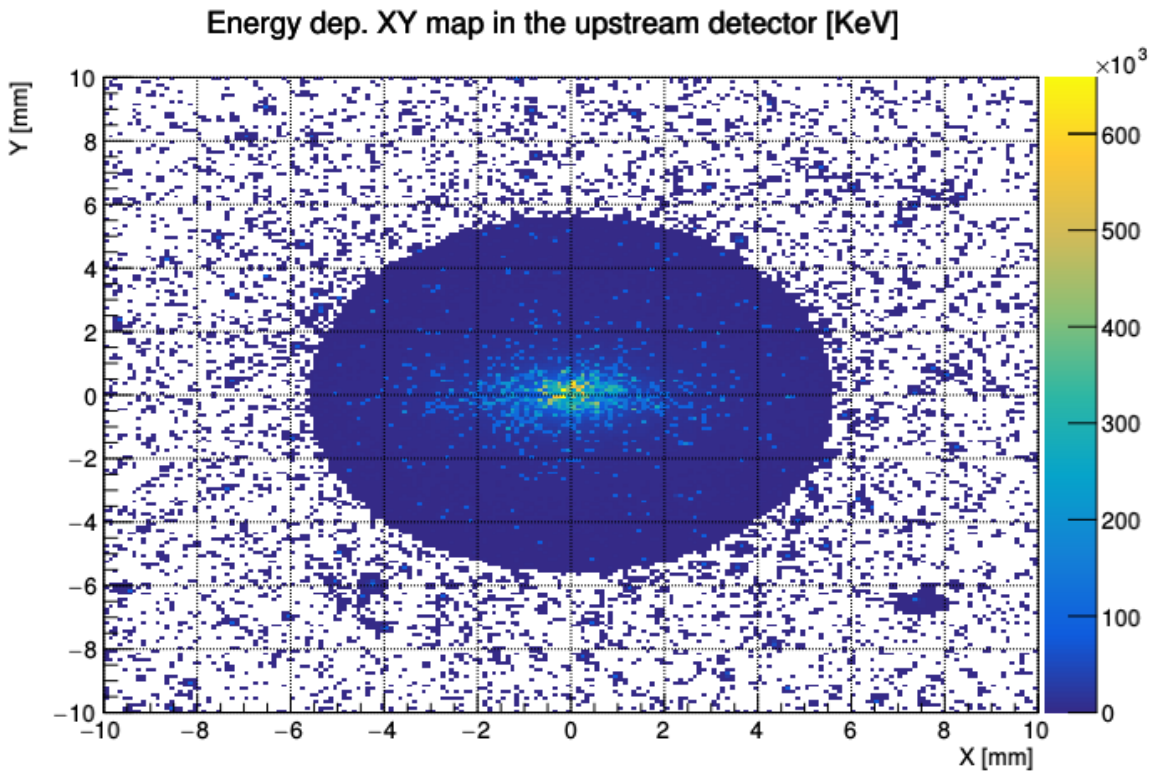


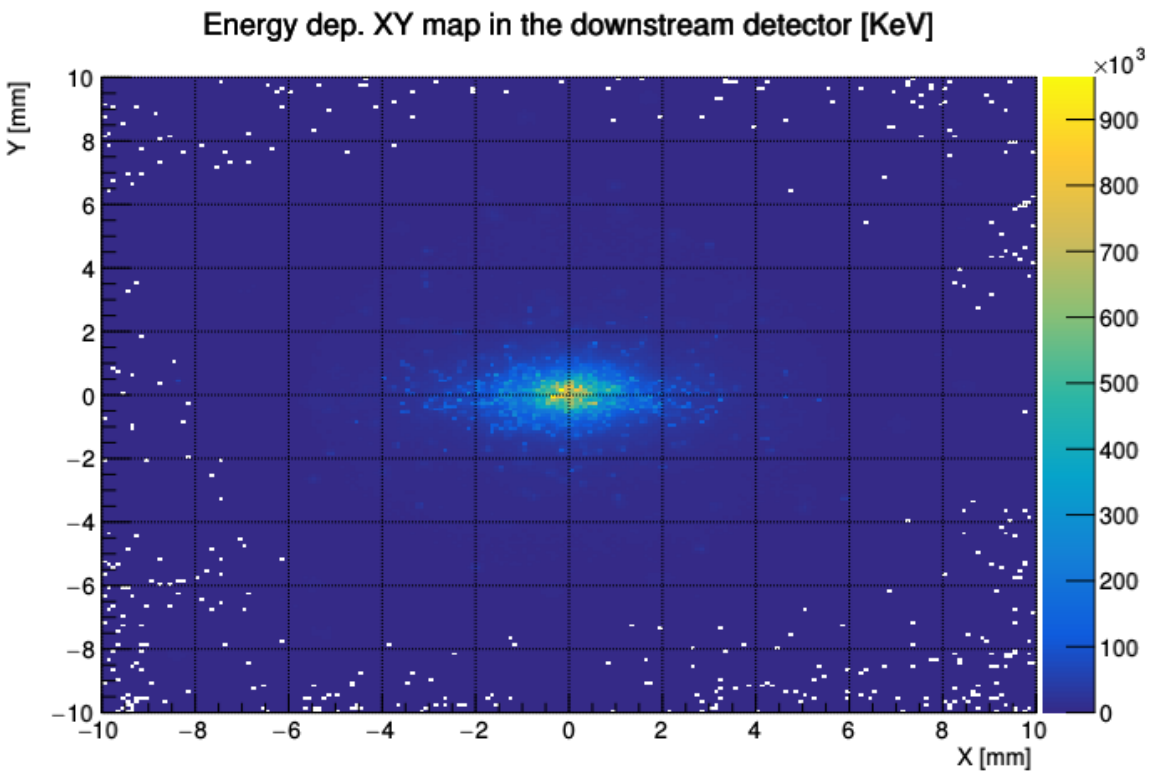
χ = 10 - Spectrum of e.dep.s (chg)



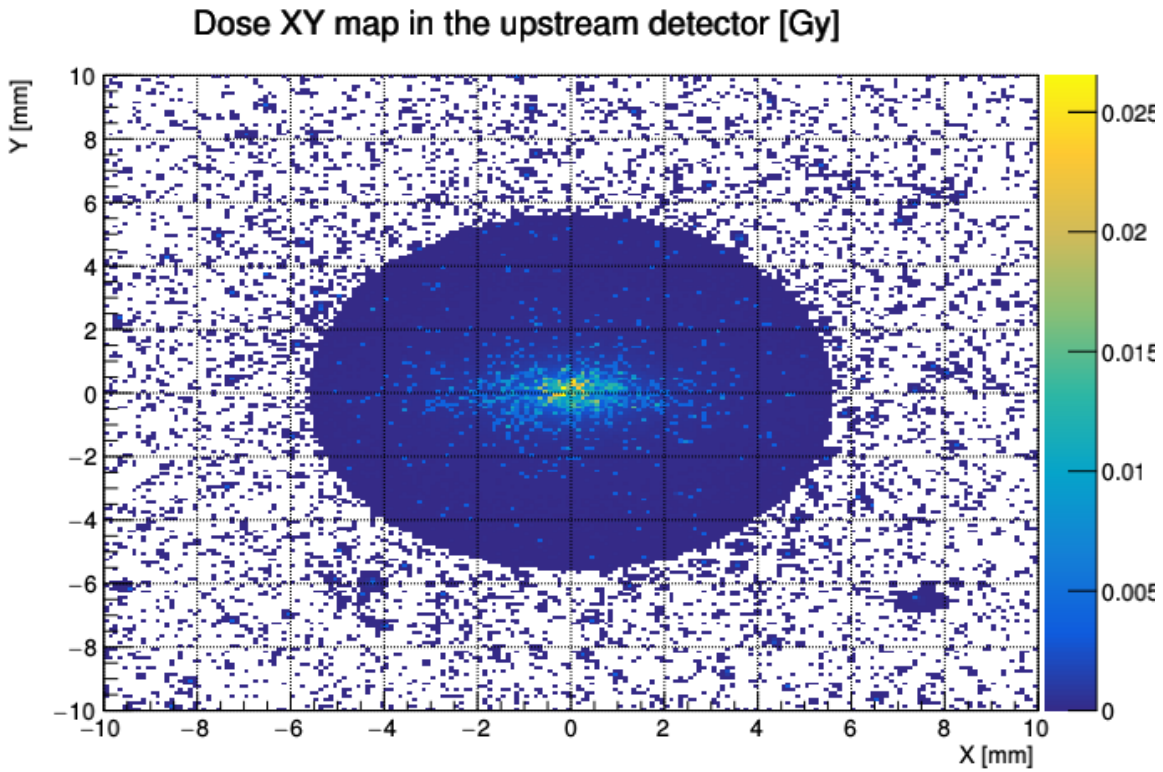


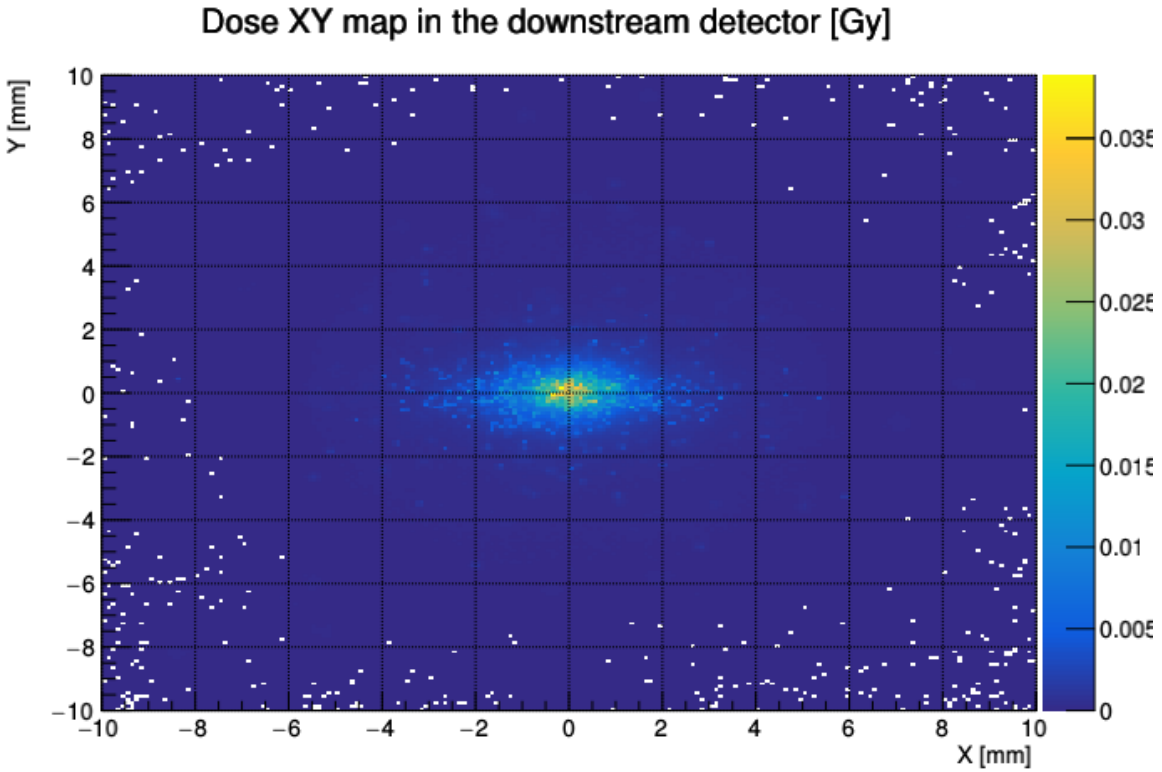
χ = 10 - Map of energy depositions



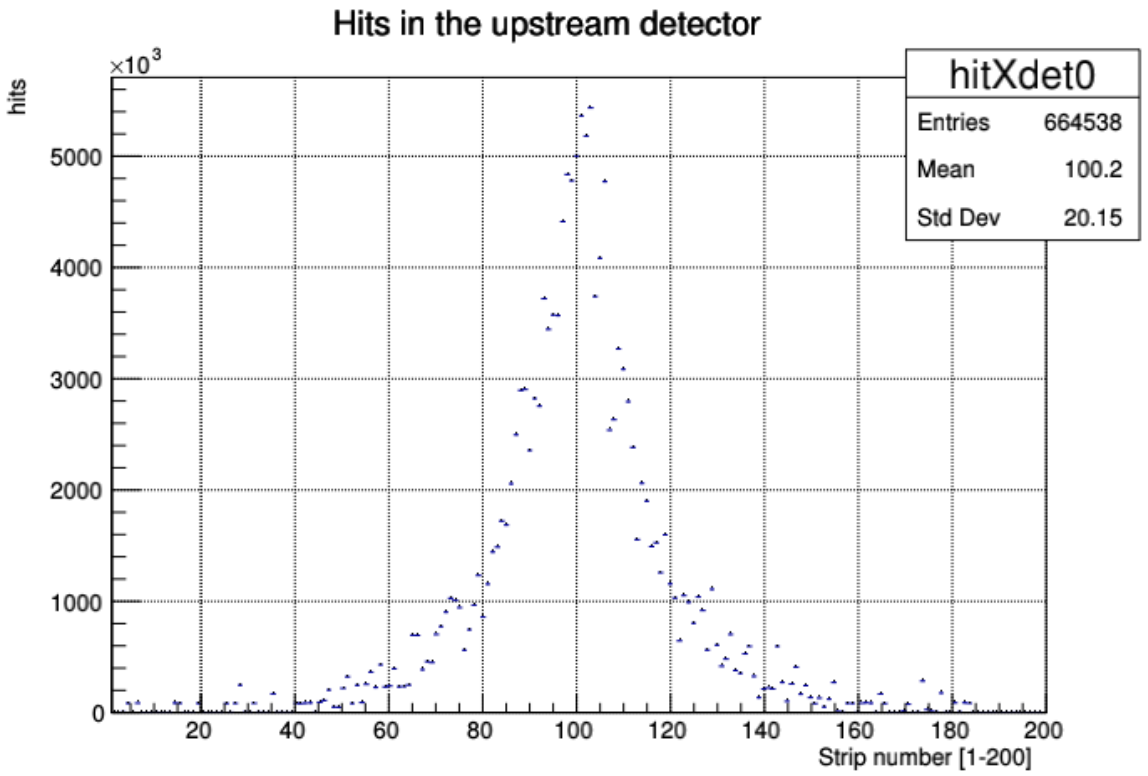


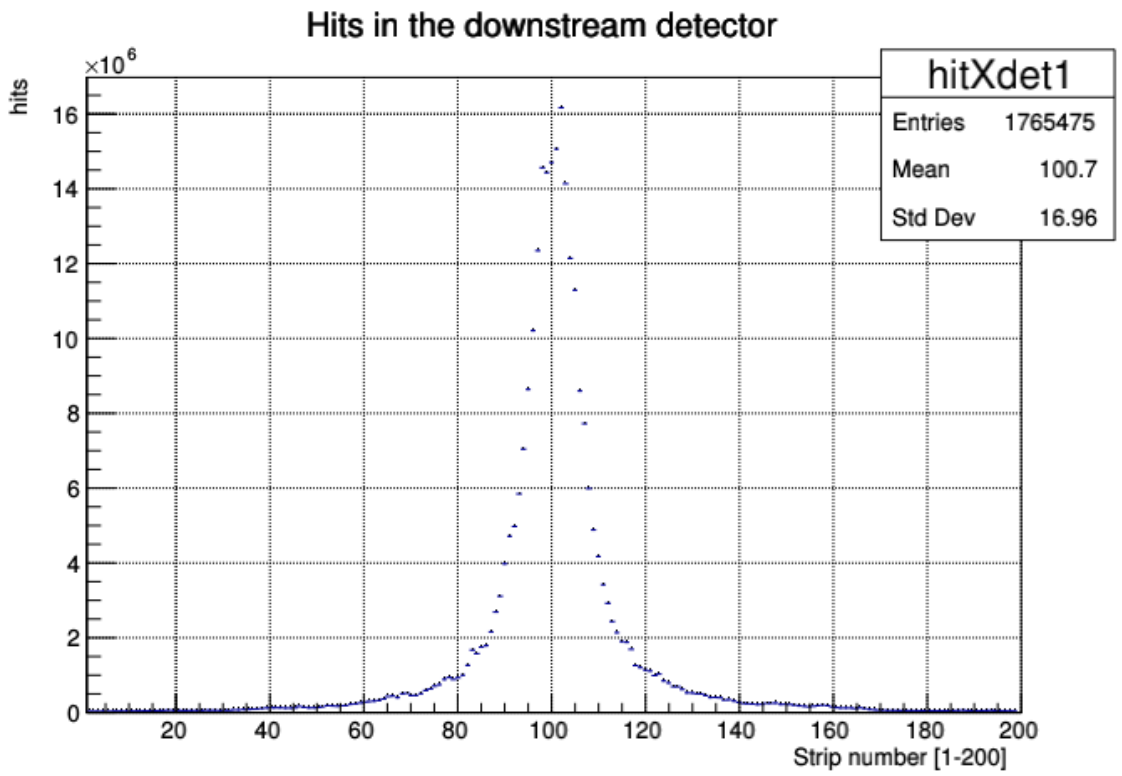
χ = 10 - Dose map


Dose XY map in the upstream detector [Gy]
Y [mm]
X [mm]
10
8
6
4
2
0
−2
−4
−6
−8
−10
−10
−8
−6
−4
−2
0
2
4
6
8
10
0.025
0.02
0.015
0.01
0.005
0


Dose XY map in the downstream detector [Gy]
Y [mm]
X [mm]
10
8
6
4
2
0
−2
−4
−6
−8
−10
−10
−8
−6
−4
−2
0
2
4
6
8
10
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0

χ = 10 – Profile reconstruction





χ = 10 – Profile reconstruction