Looking at SHMS optics

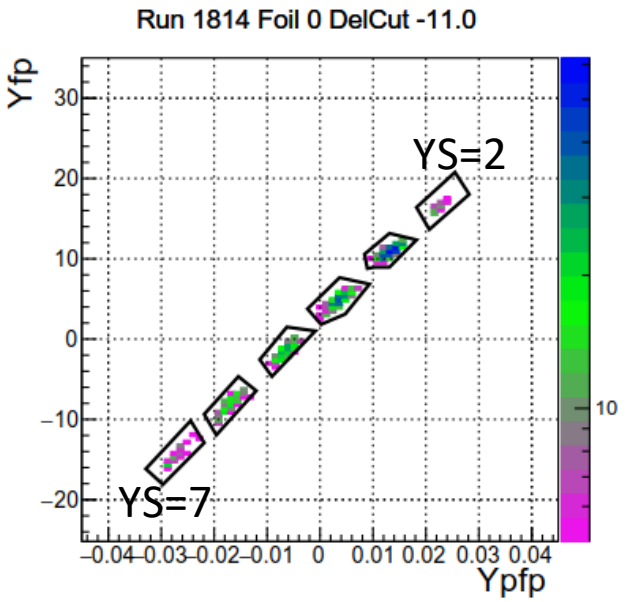
- First look at SHMS Run 1814 with centered sieve and 3 foil optics target
  - Central momentum = 3.2 GeV
  - Central Angle = 22 deg
  - Beam energy 6.430 GeV
  - Foils at 10,0 and -10cm . Ytar = -3.74,0,+3.74cm. Labeled foils 0,1,2
- Initial optics matrix optimization
  - Start with the COSY recon matrix for all quads=1.018 tune.
  - Use the cuts on ysieve and xsieve integrated over –10< delta <25 to do fitting
- First look at how well the yptar optics works in different delta bins
  - 10 delta bins: -12,-10,-8,-6,-5,-2,2,6,10,15,25
  - Put cuts on Yfp versus Ypfp to select vertical columns of sieve (yptar).
  - Comparisons between data and mc-single-arm

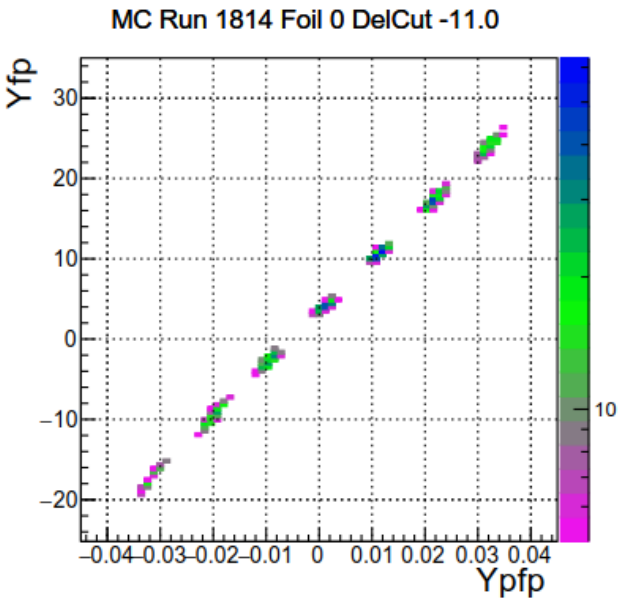
- Z=10cm foil
- -12< delta < -10

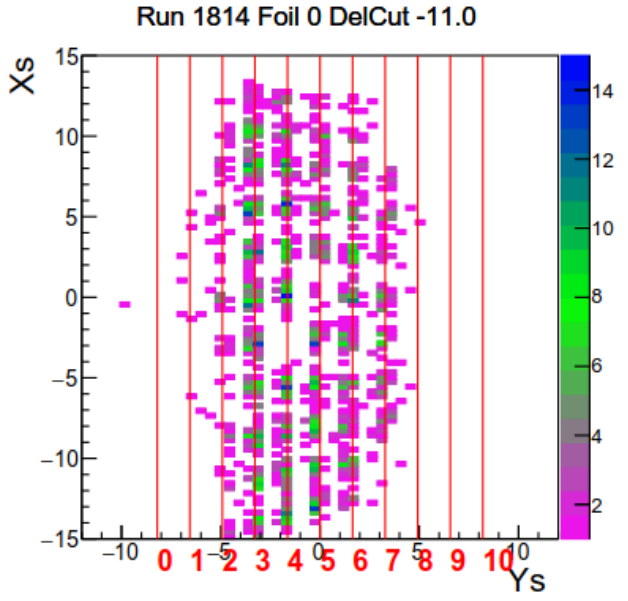
- Remember to 1st order Yptar = -0.7* Ypfp

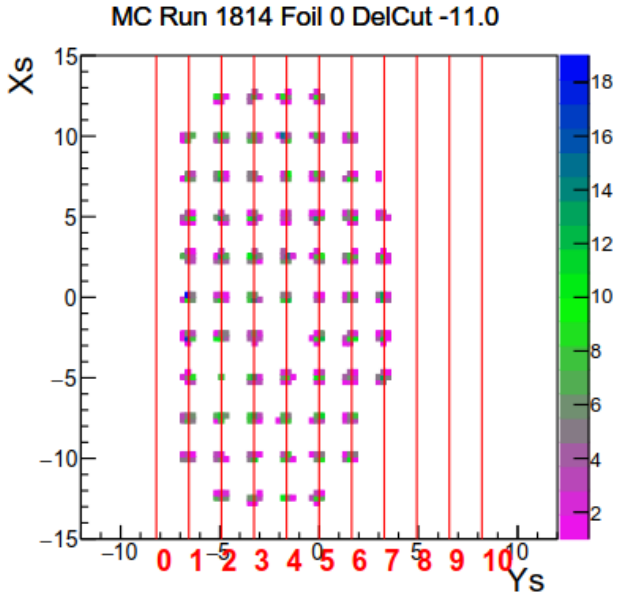
- Reasonable match between data and MC

- Notice that Ys=1 is seen in MC but not in Data





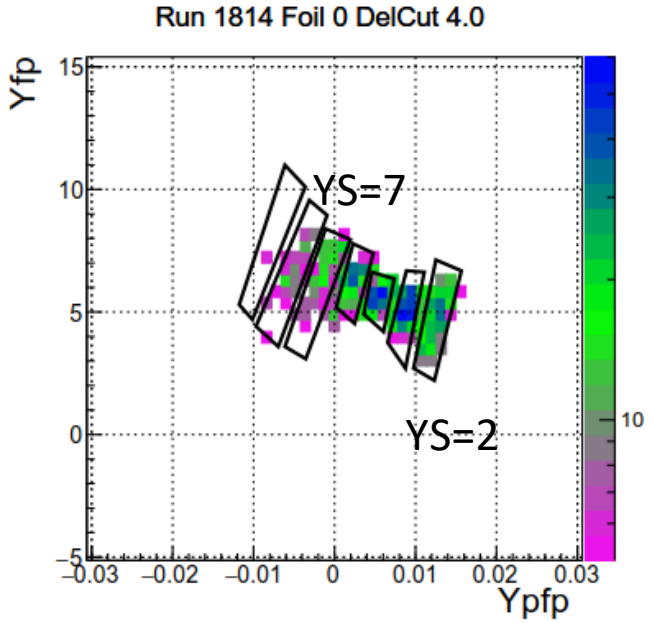


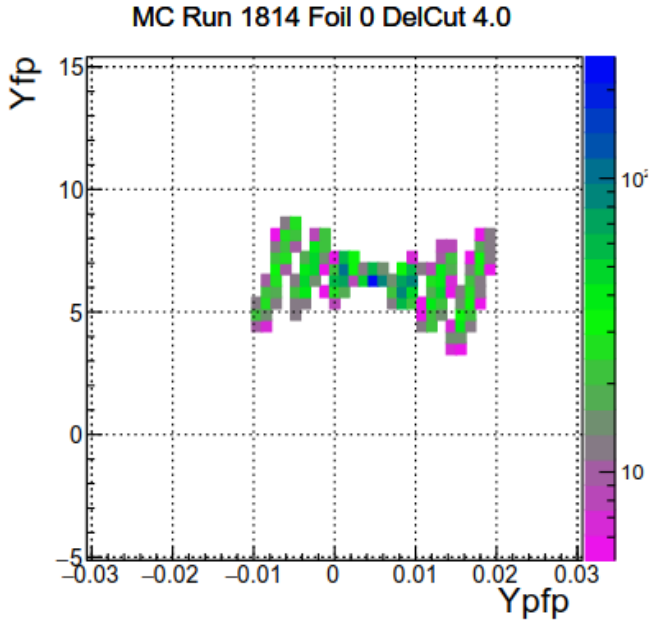


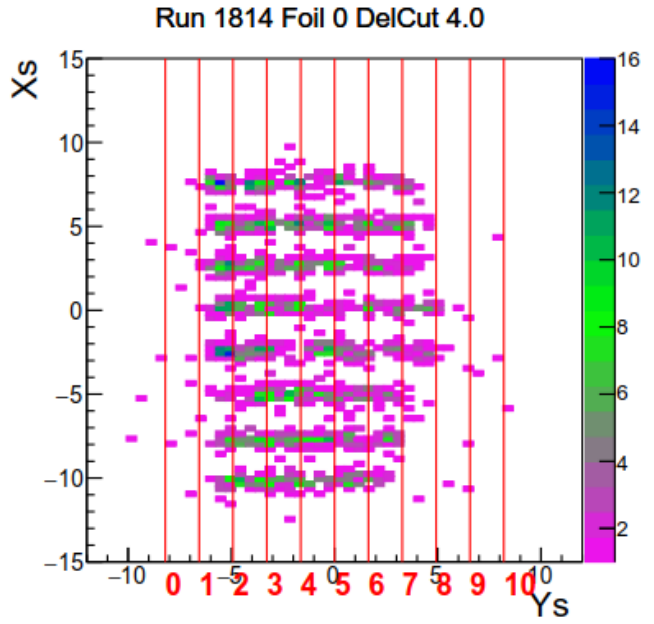
- Z=10cm foil
- 2< delta < 6

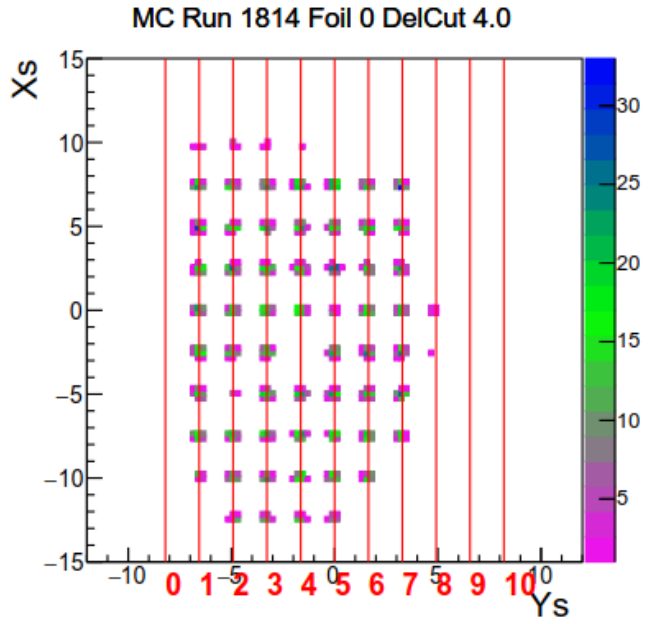
- Reasonable match between data and MC

- Notice that Ys=1 is seen in MC but not in Data





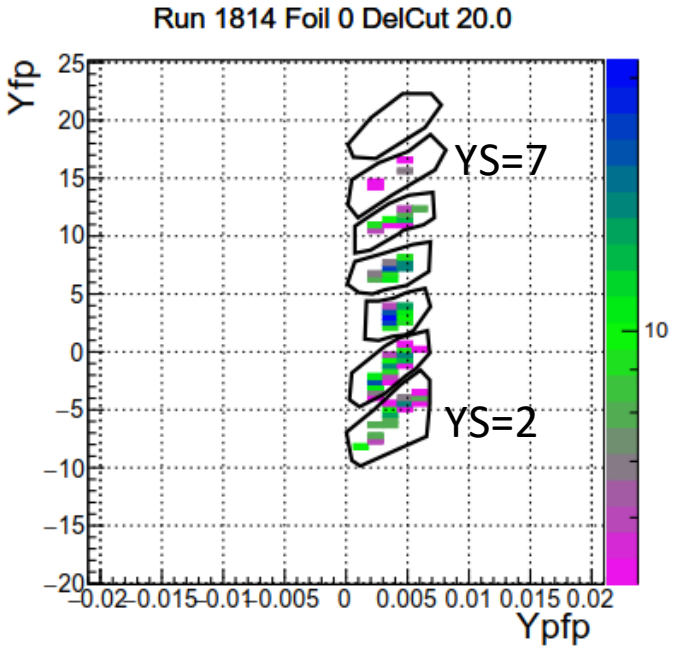


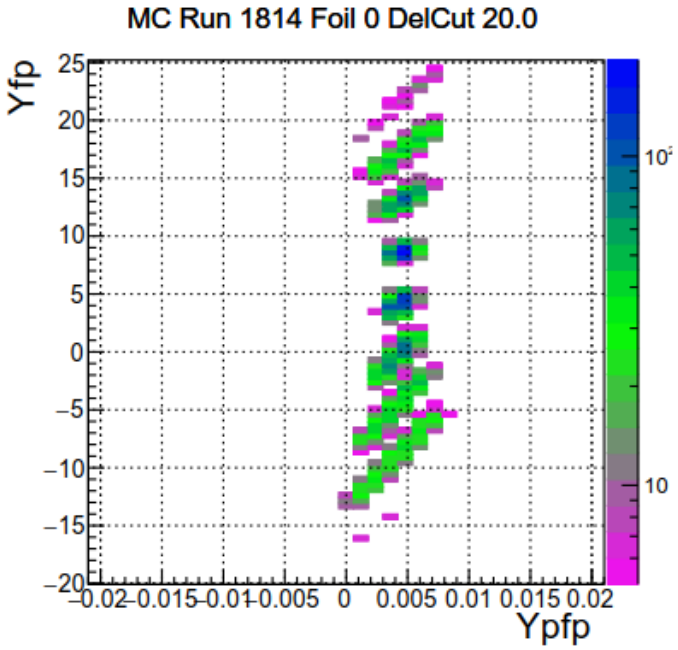


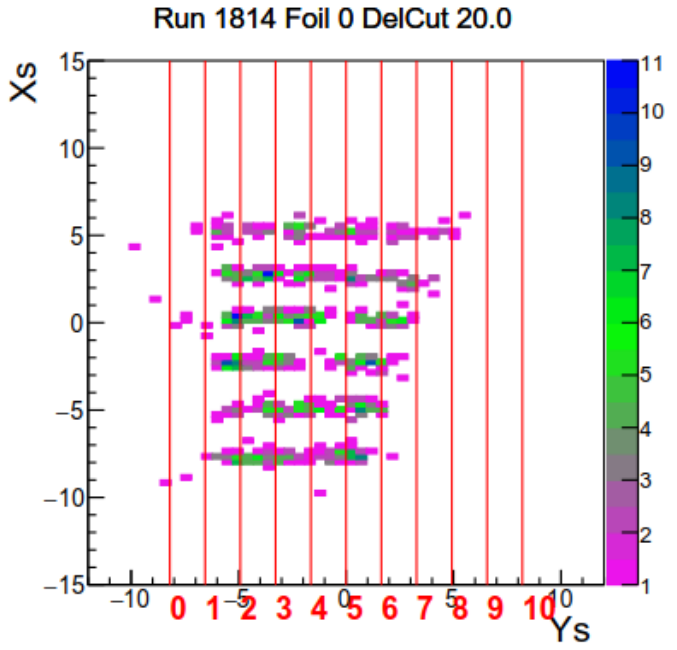
- Z=10cm foil
- 15< delta < 25

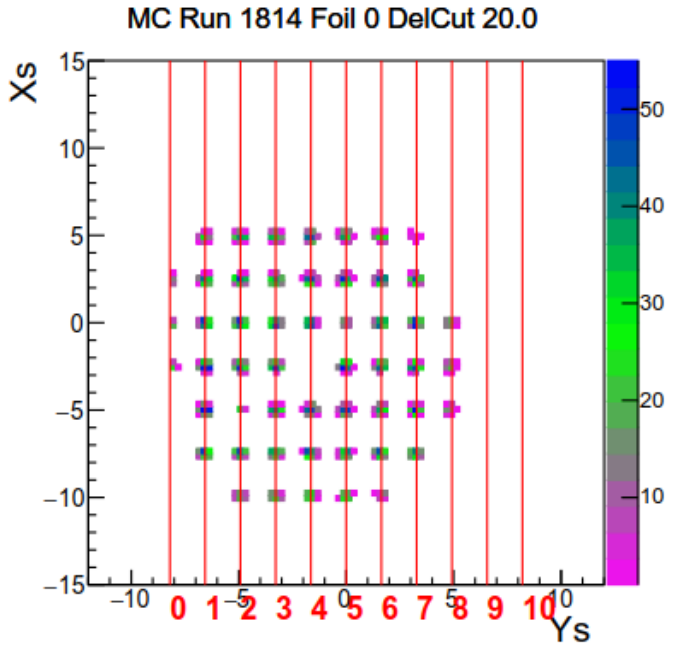
- Reasonable match between data and MC

- Notice that Ys=1 is seen in MC but not in Data



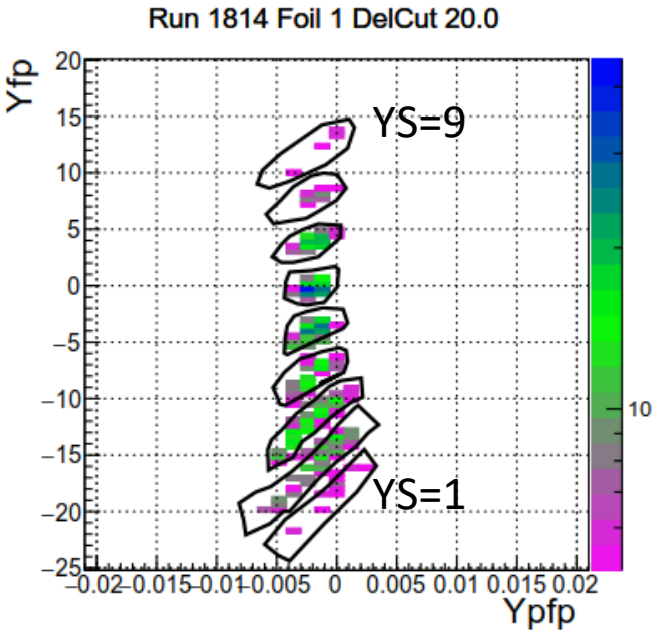


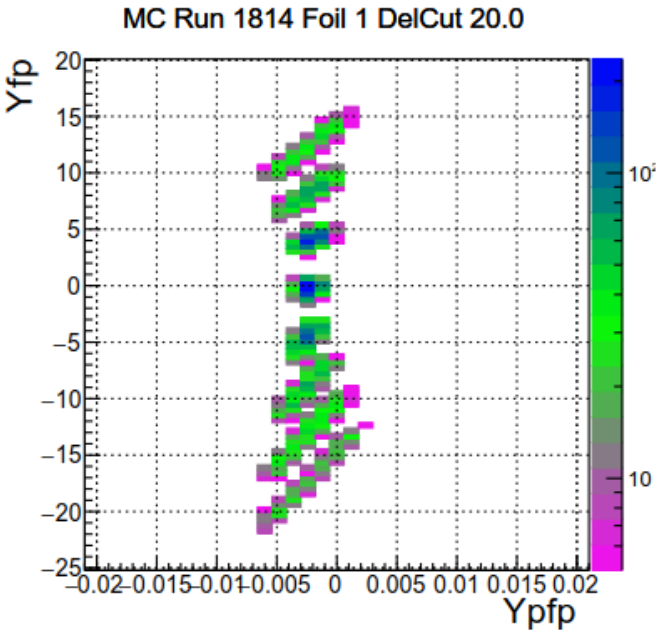


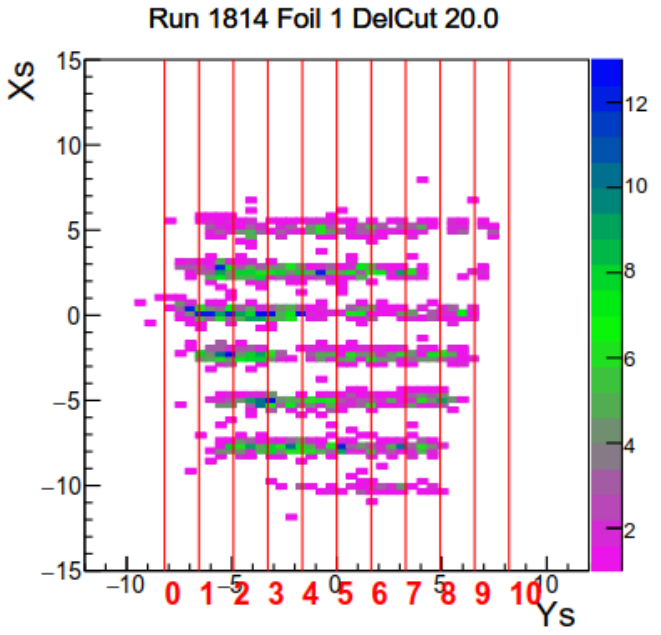


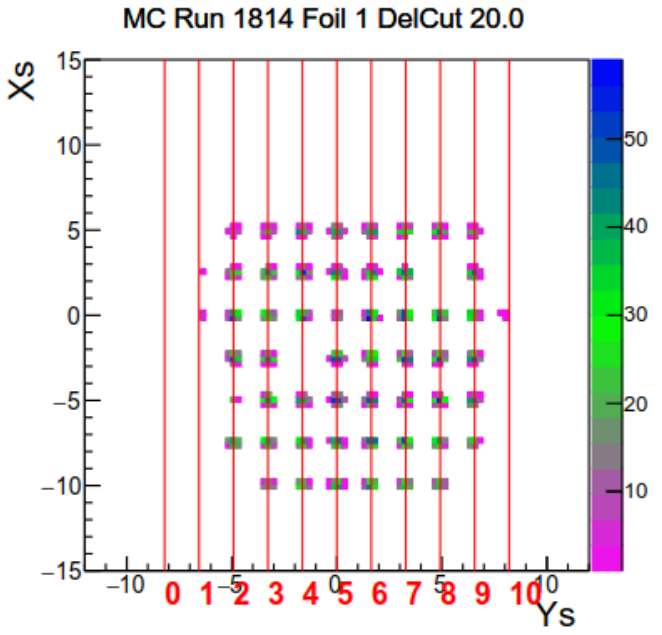
- Z= 0cm foil
- 15< delta < 25

- Reasonable match between data and MC









- Z= 0cm foil
- 15< delta < 25 bin
- Look at Xs versus Ys for each Yfp versus Ypfp cut which is a vertical row of sieve holes.
- +Ys corresponds to +yptar.
- Each Ys column is roughly 6mr.
- At Ys=8 and 9 (24 and 30mr) one sees some problem with the Yptar reconstruction to smaller angles.
- This could explain the "peak" structure seen in Burcu's talk.