SDME update

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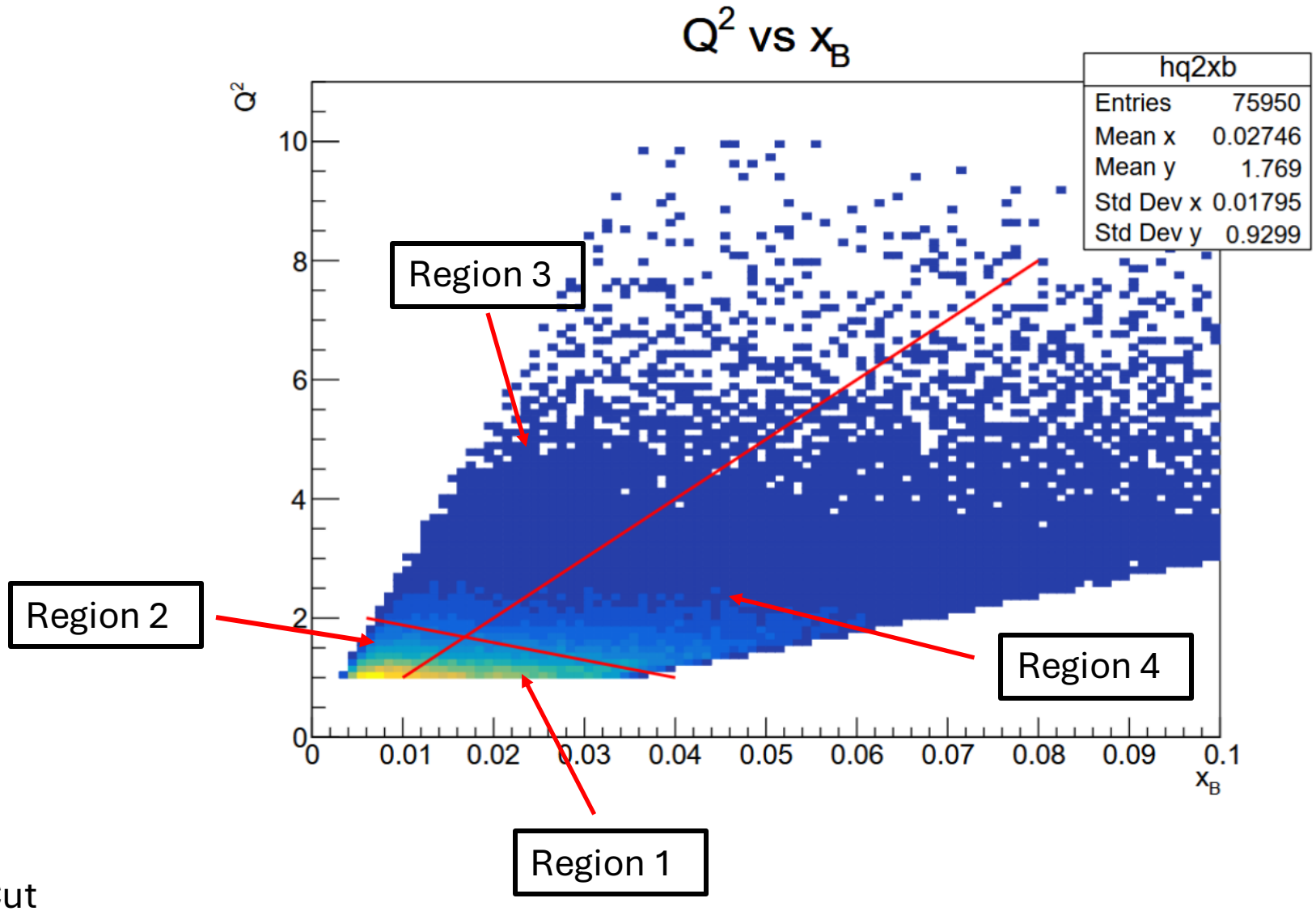
Updates

- Ran all run periods for both data and MC
  - Enough data to bin the SDME results 3D {Q2,xB,-t} and split the muon beam type up
- I have been cross checking with Kamil
  - As I will show later, some problems have came up here and I am checking my MLM code

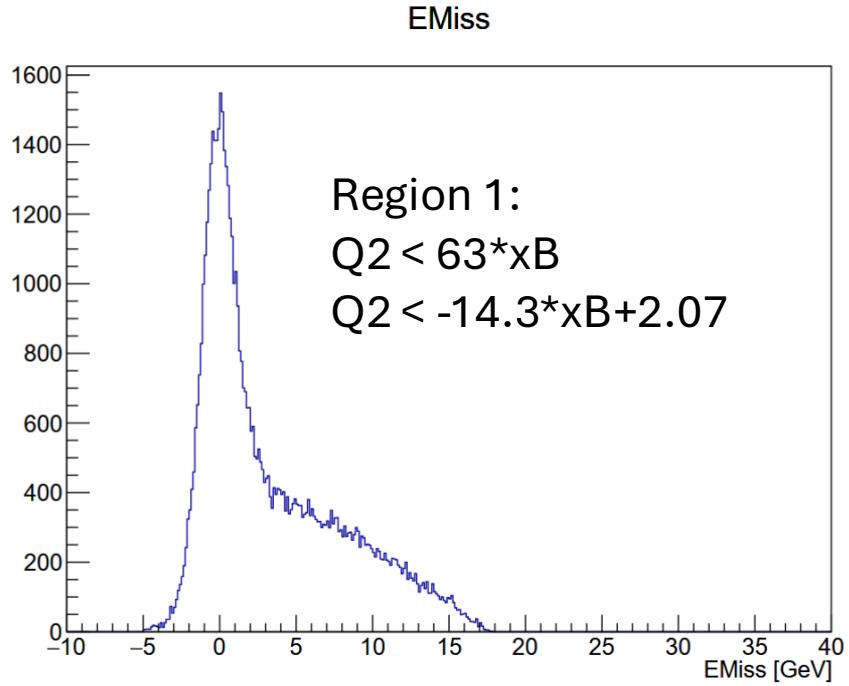
Binning Scheme: Q2 and xb

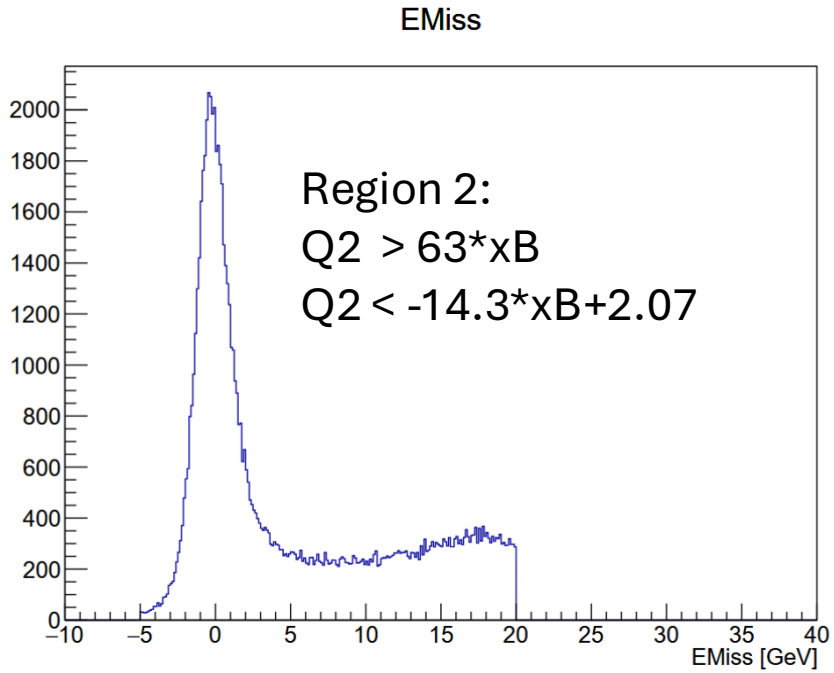
2D {Q2,xB} Binning for Background Subtraction

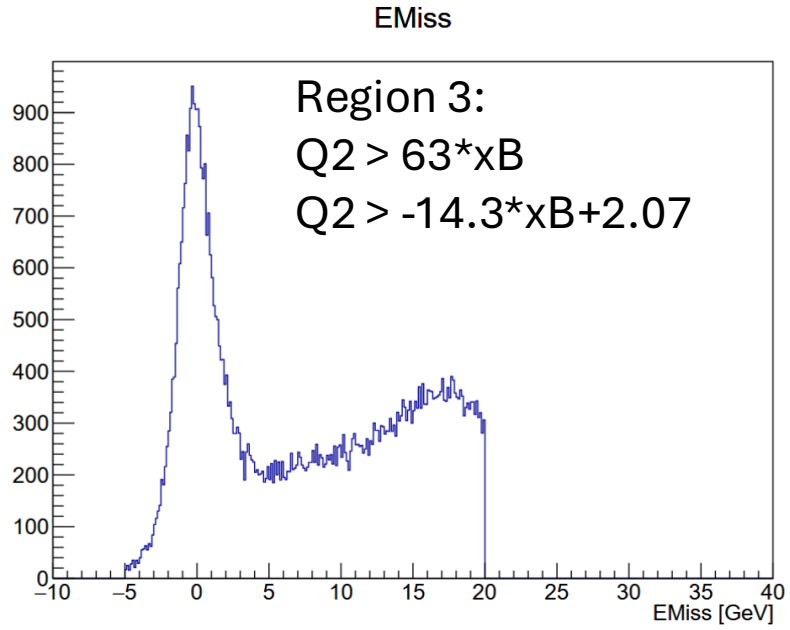


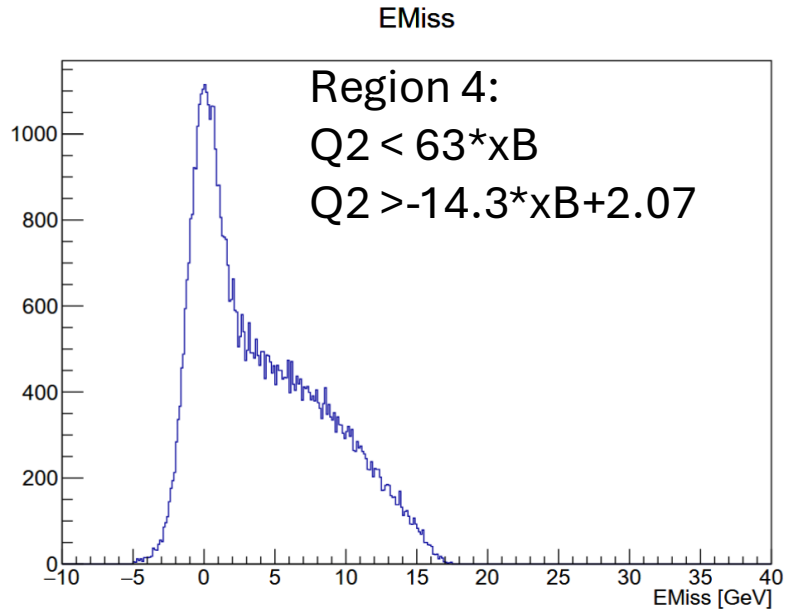
No Missing Energy Cut

EMiss per {Q2,xb} bin



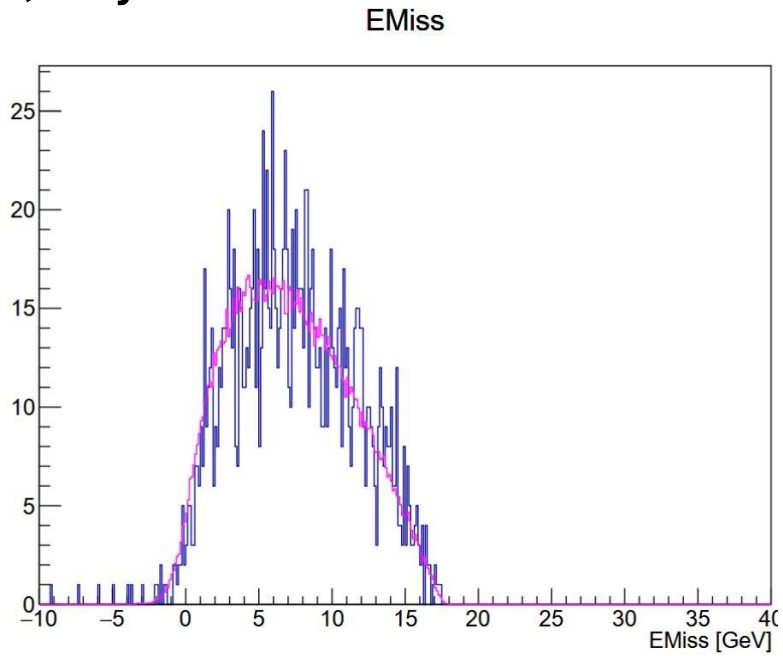


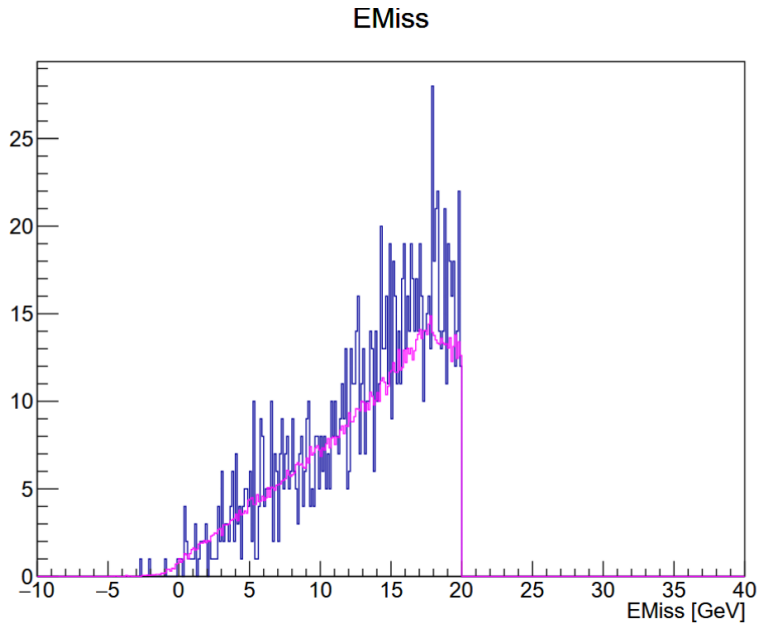




EMiss per {Q2,xb} bin for Events with same charge hadrons

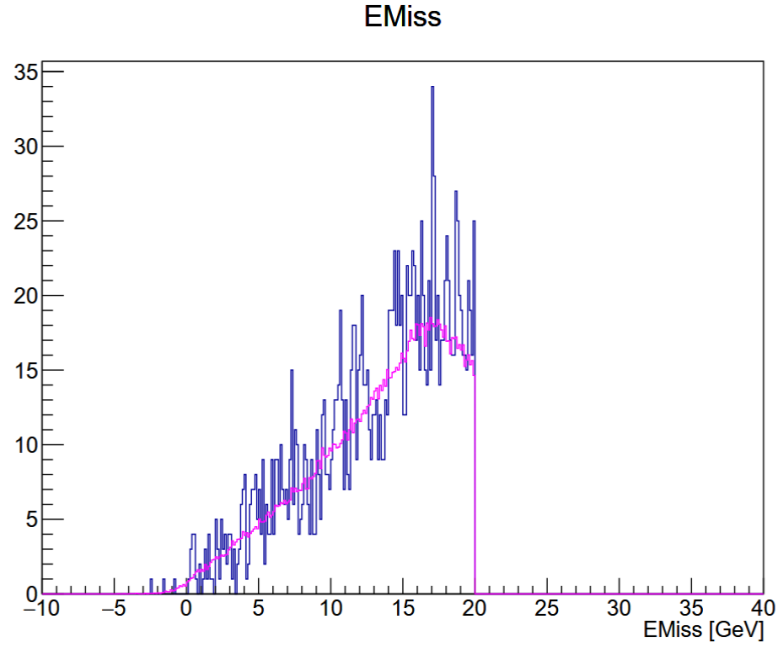
Region 1:
Q2 < 63*xB
Q2 < -14.3*xB+2.07

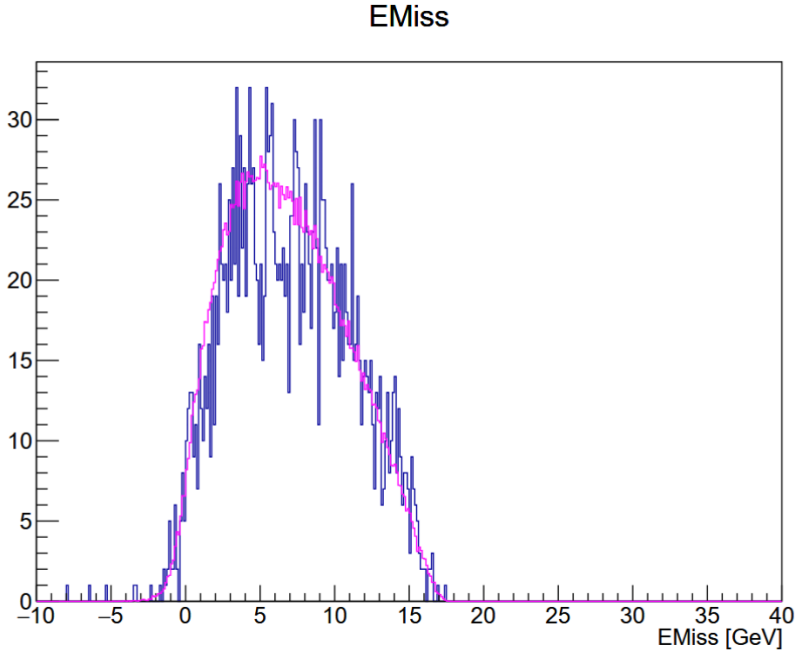




Region 2:
Q2 > 63*xB
Q2 < -14.3*xB+2.07

Region 3:
Q2 > 63*xB
Q2 > -14.3*xB+2.07

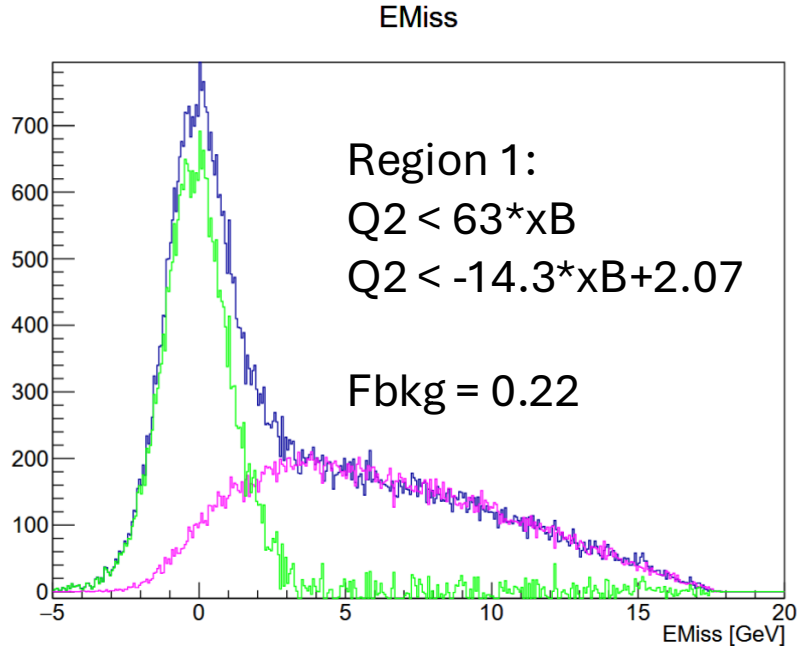


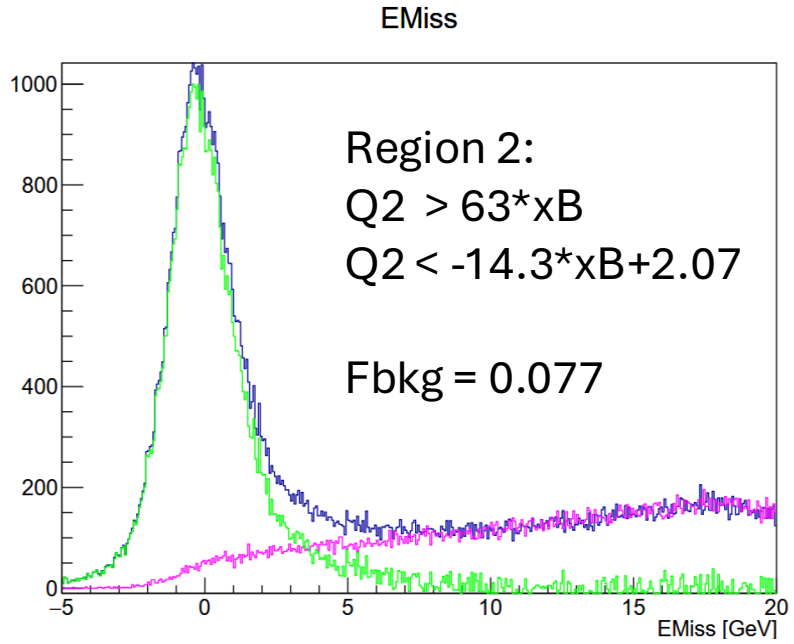


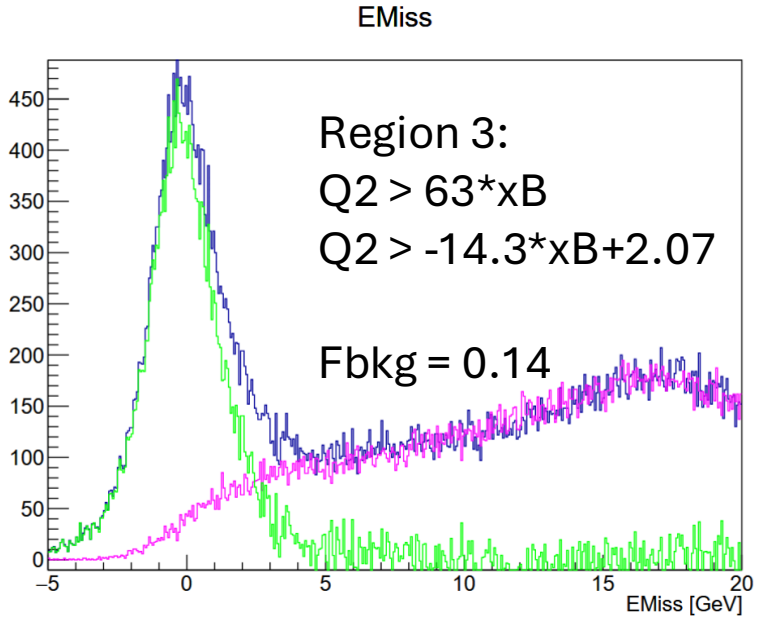
Region 4:
Q2 < 63*xB
Q2 >-14.3*xB+2.07

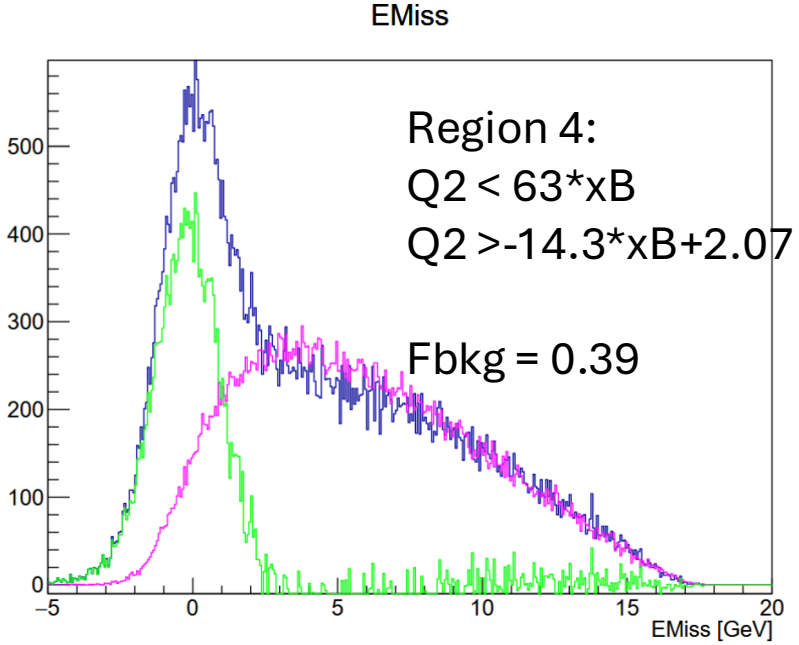
EMiss per {Q2,xb} bin (background subtraction)

Fbg is in the region
–2.5 < Emiss < 2.5



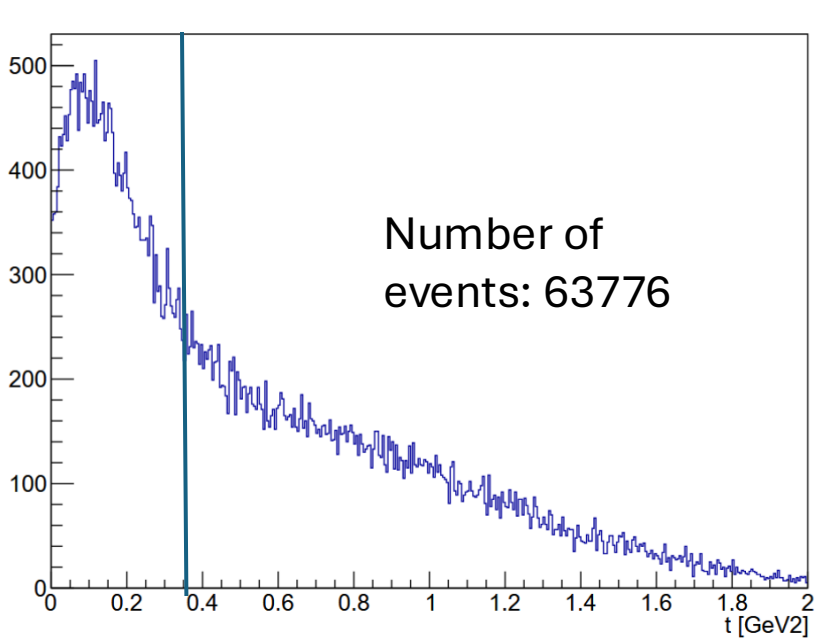


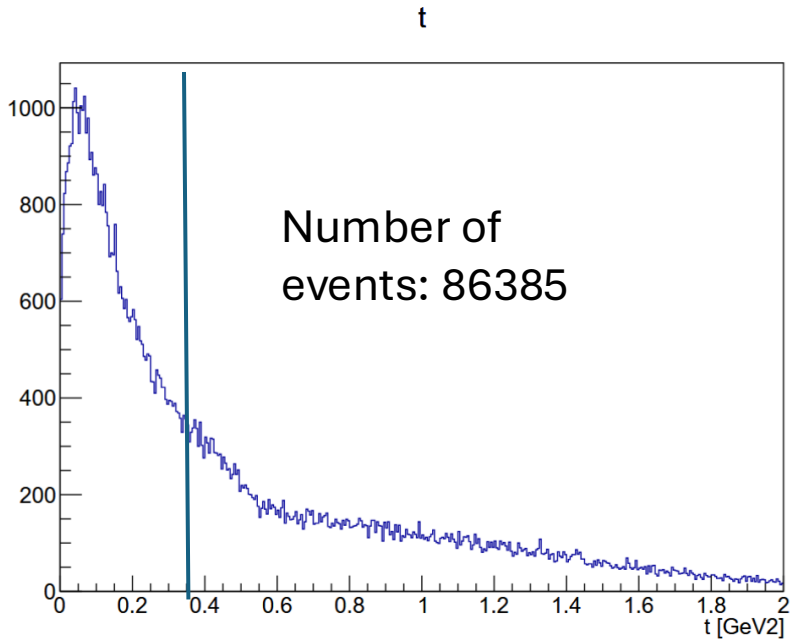


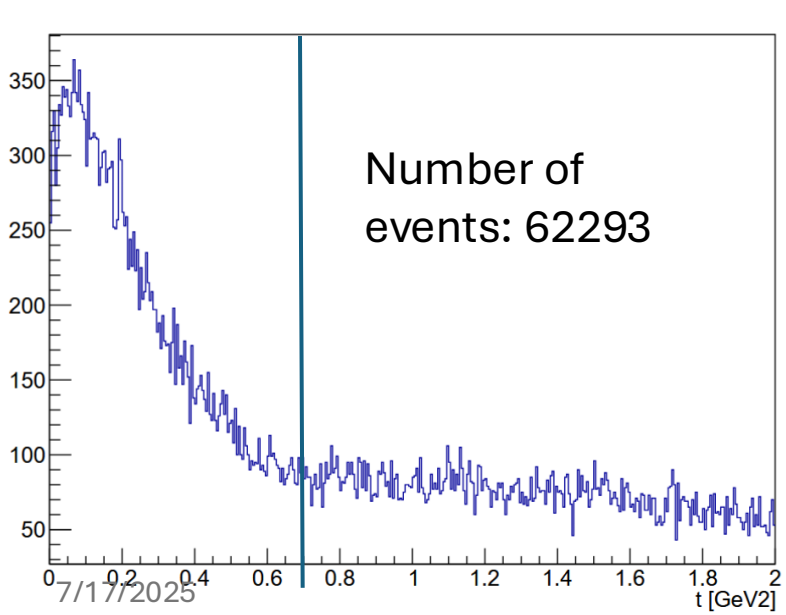


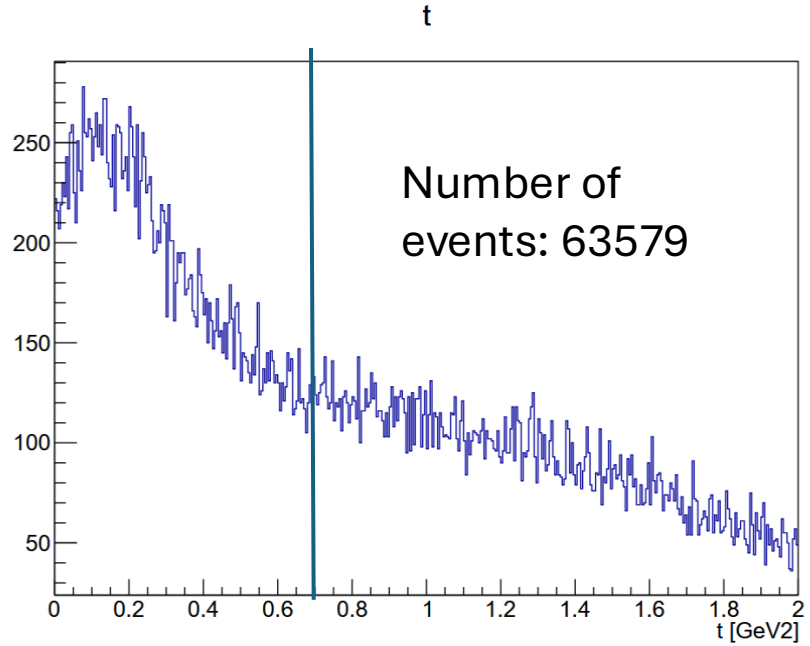
Data Lepto Data - Lepto

For 3D binning, What does –t look like?





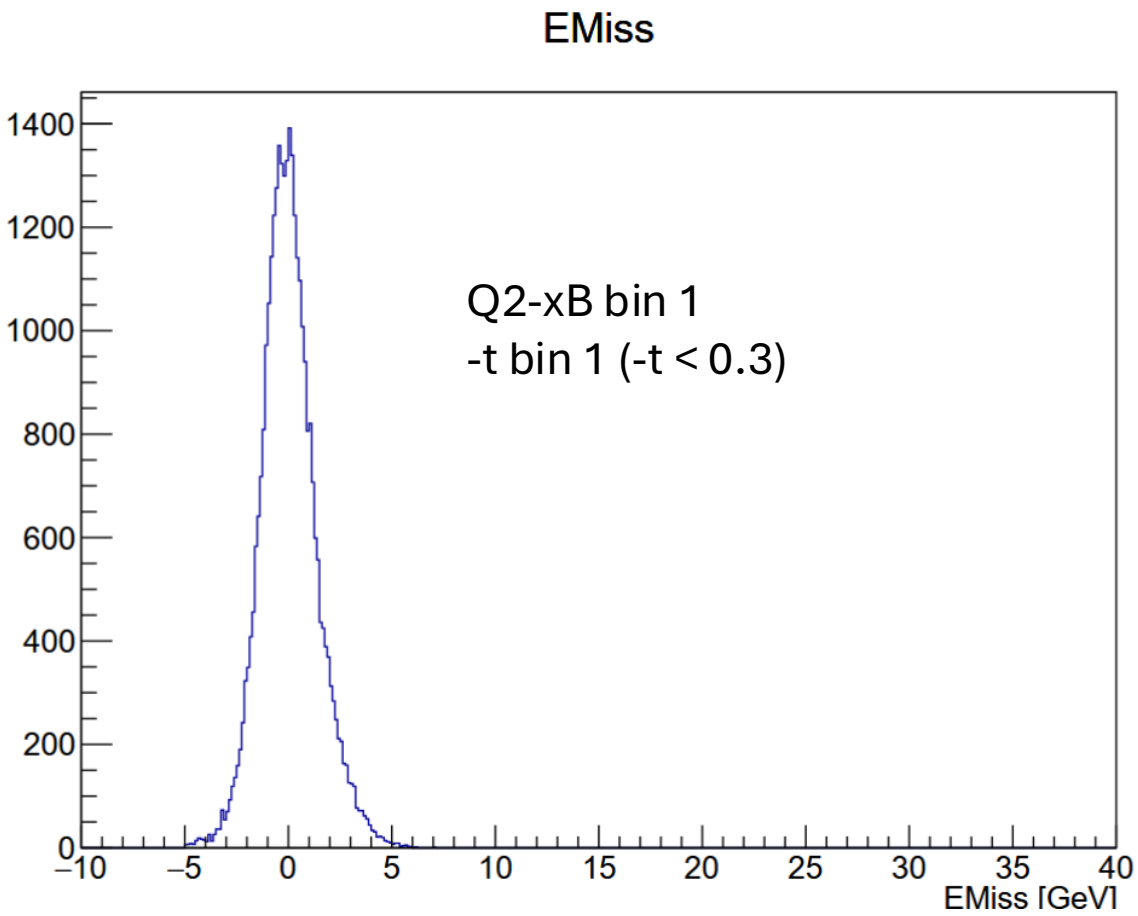


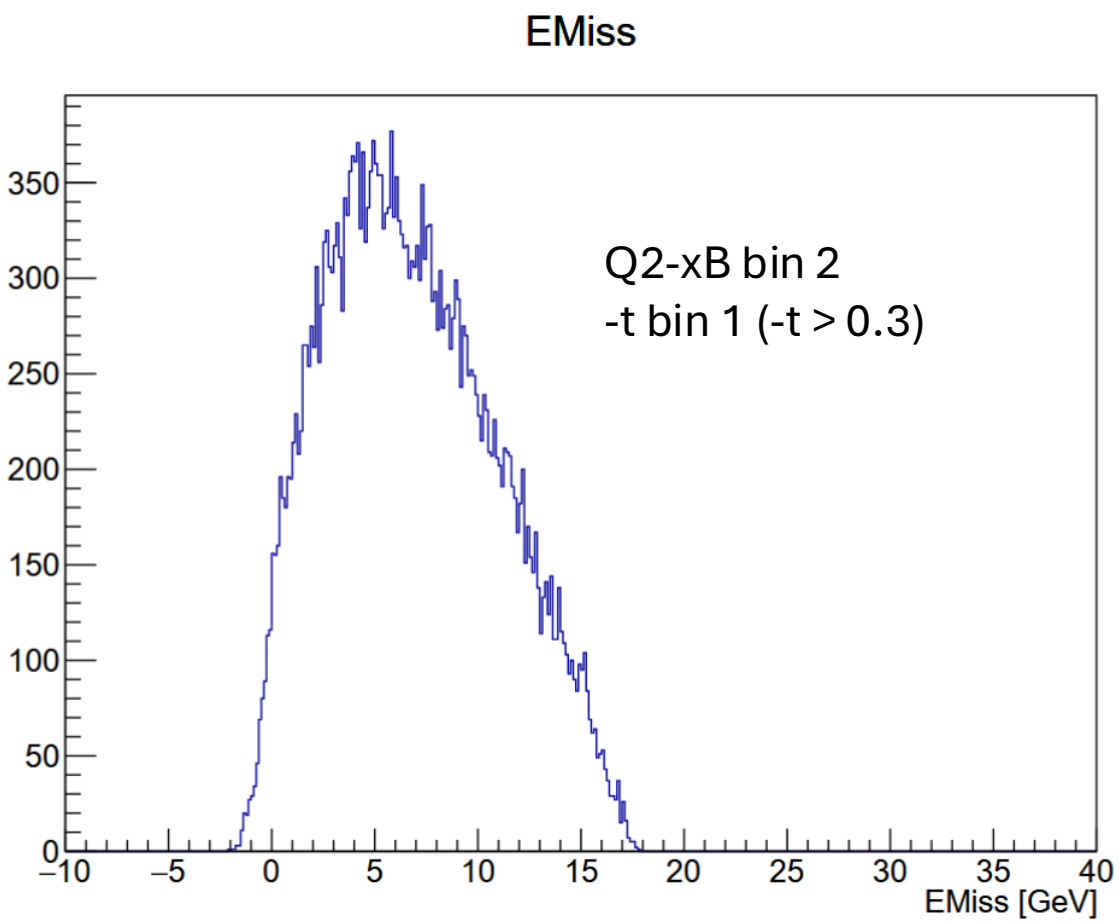


- Got bins to be on the same order of magnitude
  - Each number divided in half for mu+ and mu-
  - Two bins in –t for
- ~20,00 events per 3D for each beam type

Binning Scheme: Q2, xb,-t

Examples of EMiss per {Q2,xb,-t} bin





Cross Check with phi

Cross Check

- I had been getting similar results as Kamil with the phi cross check
- However, my results look very different when I use Minuit1 vs Minuit2.
  - I would not expect this and Kamil does not see this