Benchmarking with DVMP

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Experiment

- The simulation of ep->e'p'π^0 (10X100) for ePIC is now available.

- It is expected to be updated in the simulation campaign.

- The performance of the B0 spectrometer will be monitored when new simulation files are produced.

- It will also be monitored as a full reaction.

Files

- Current using files from Alex's Dropbox (S3 directory TBD)
  The total size is about 1.5Gb.

- Generator files: github.com/eic/DVMPdataset
  EPIC generator (used with the Athena Proposal)

- Afterburned with ip6_hiacc_100x10 setting.

- 100k events have been generated.

Event Coverage
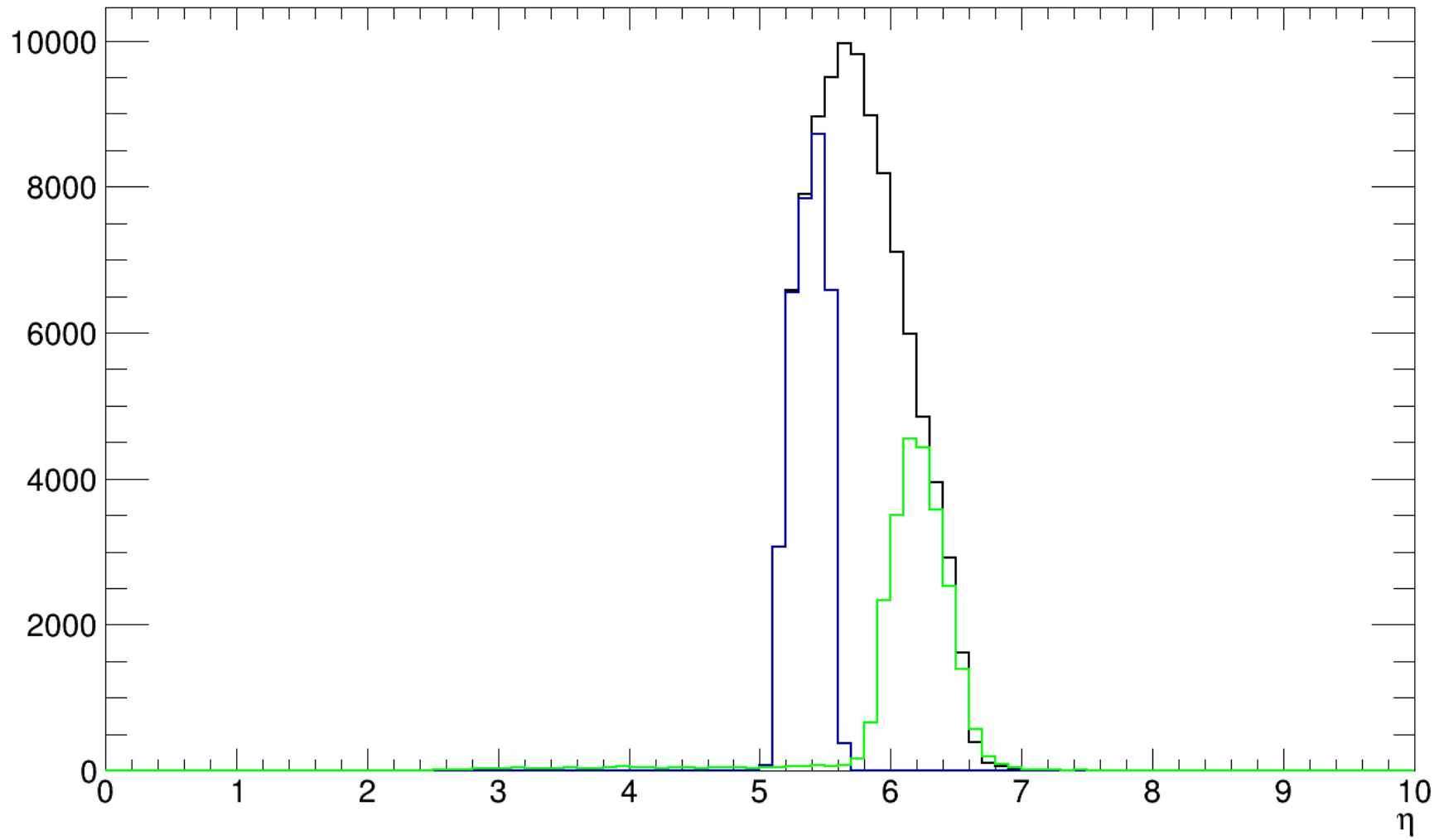
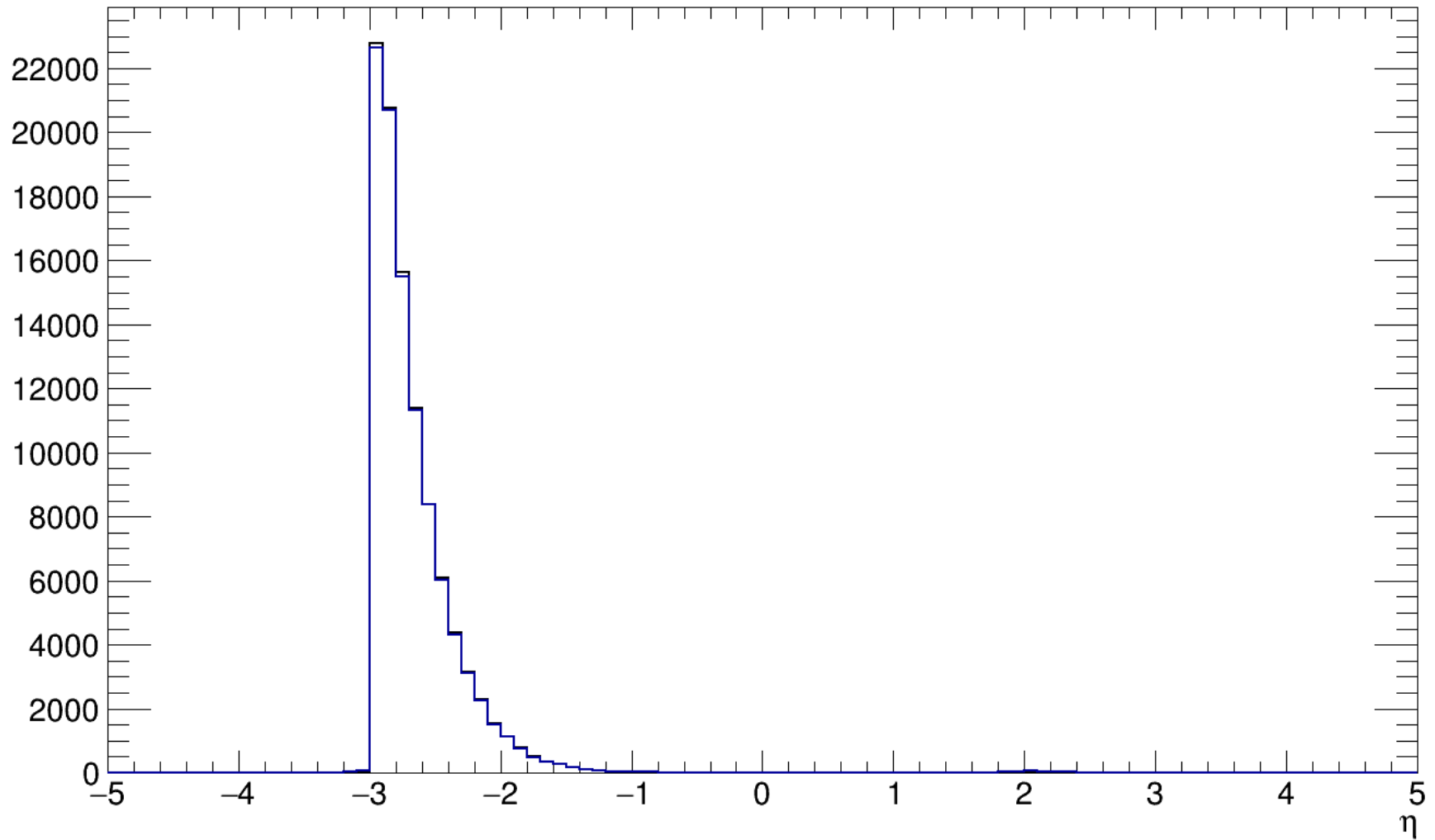About 33% of the protons are reconstructed by B0 and 26% by roman pots.

3

-t
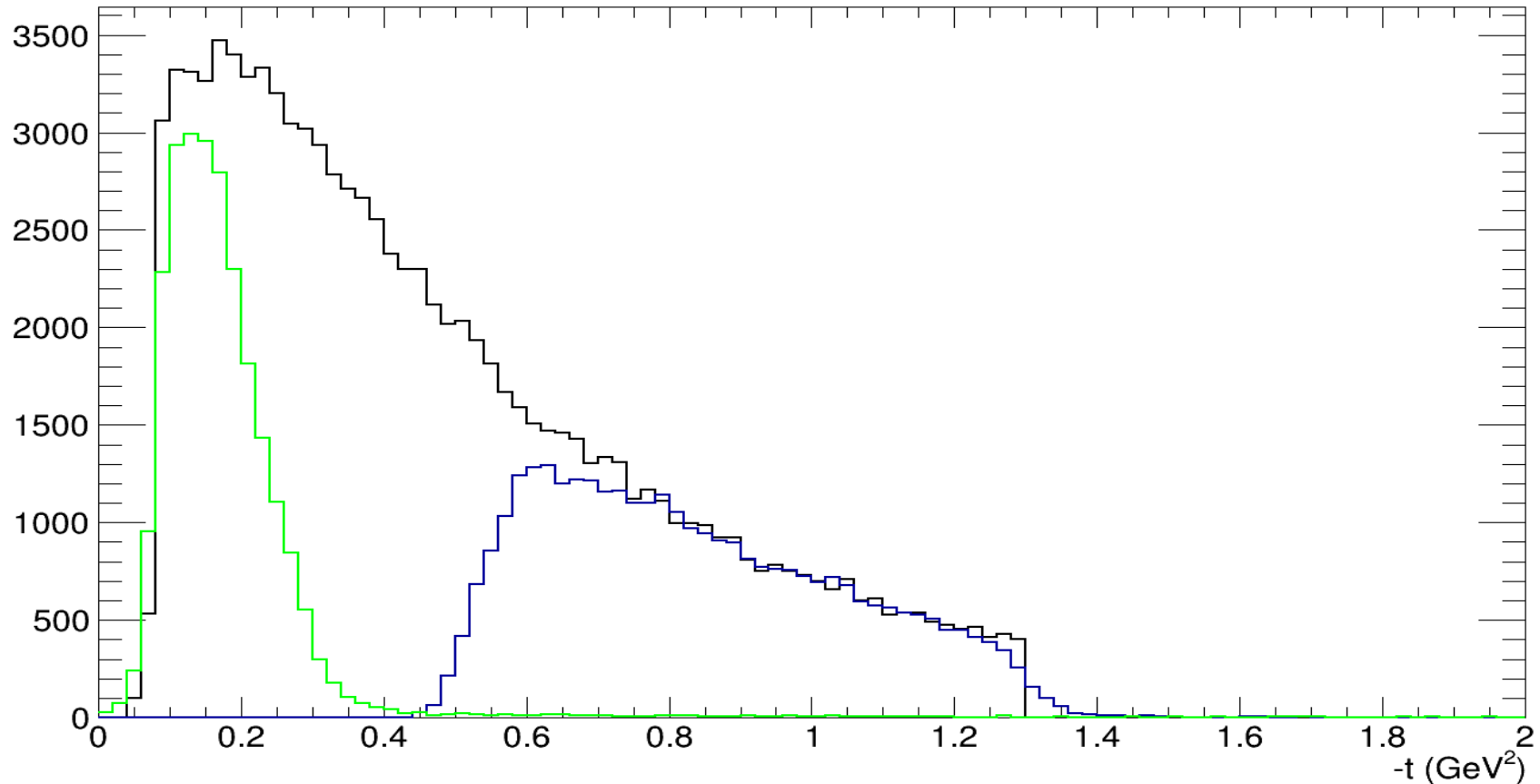
The black curve indicates the generated -t distribution while the blue and green curves indicate the reconstructed one.
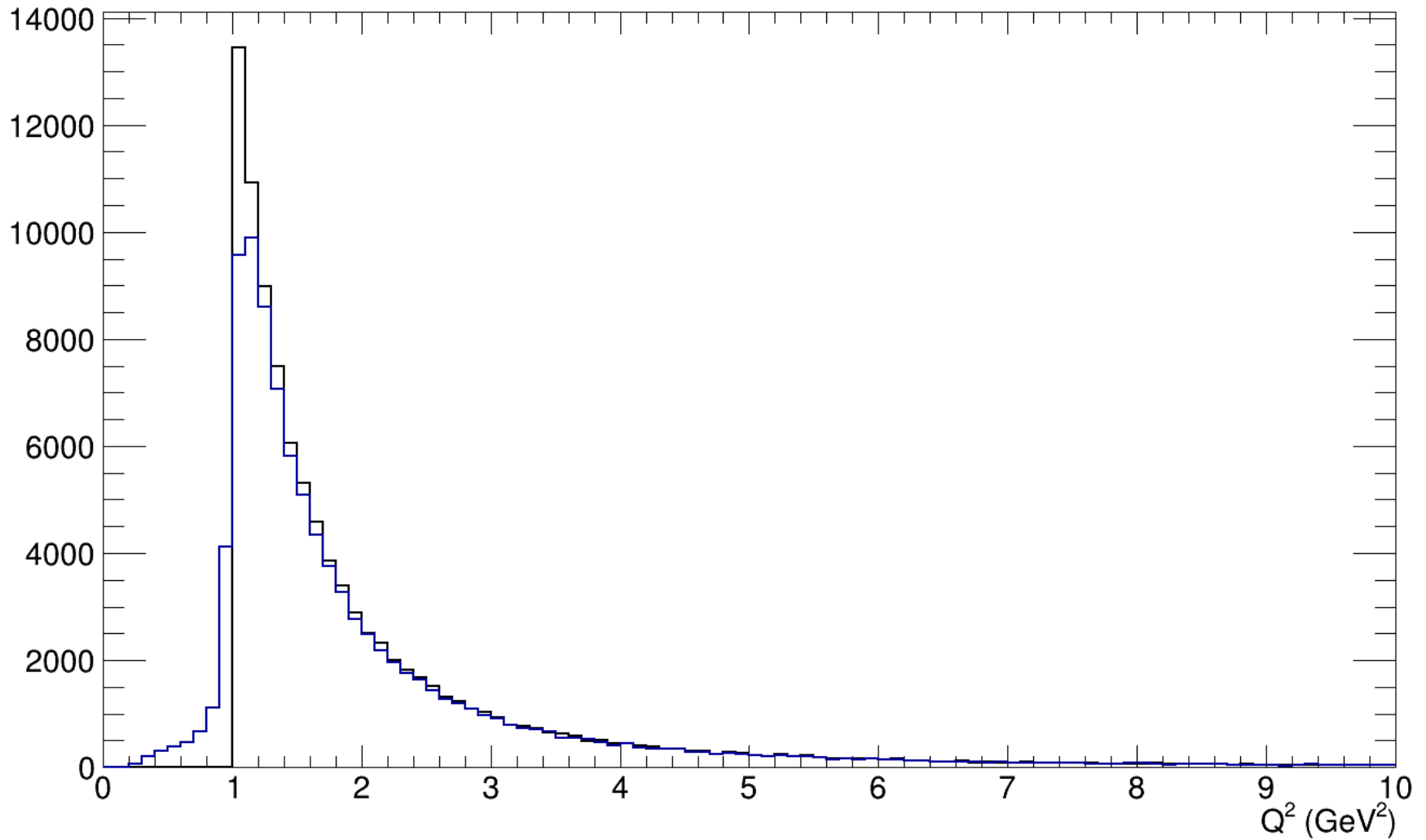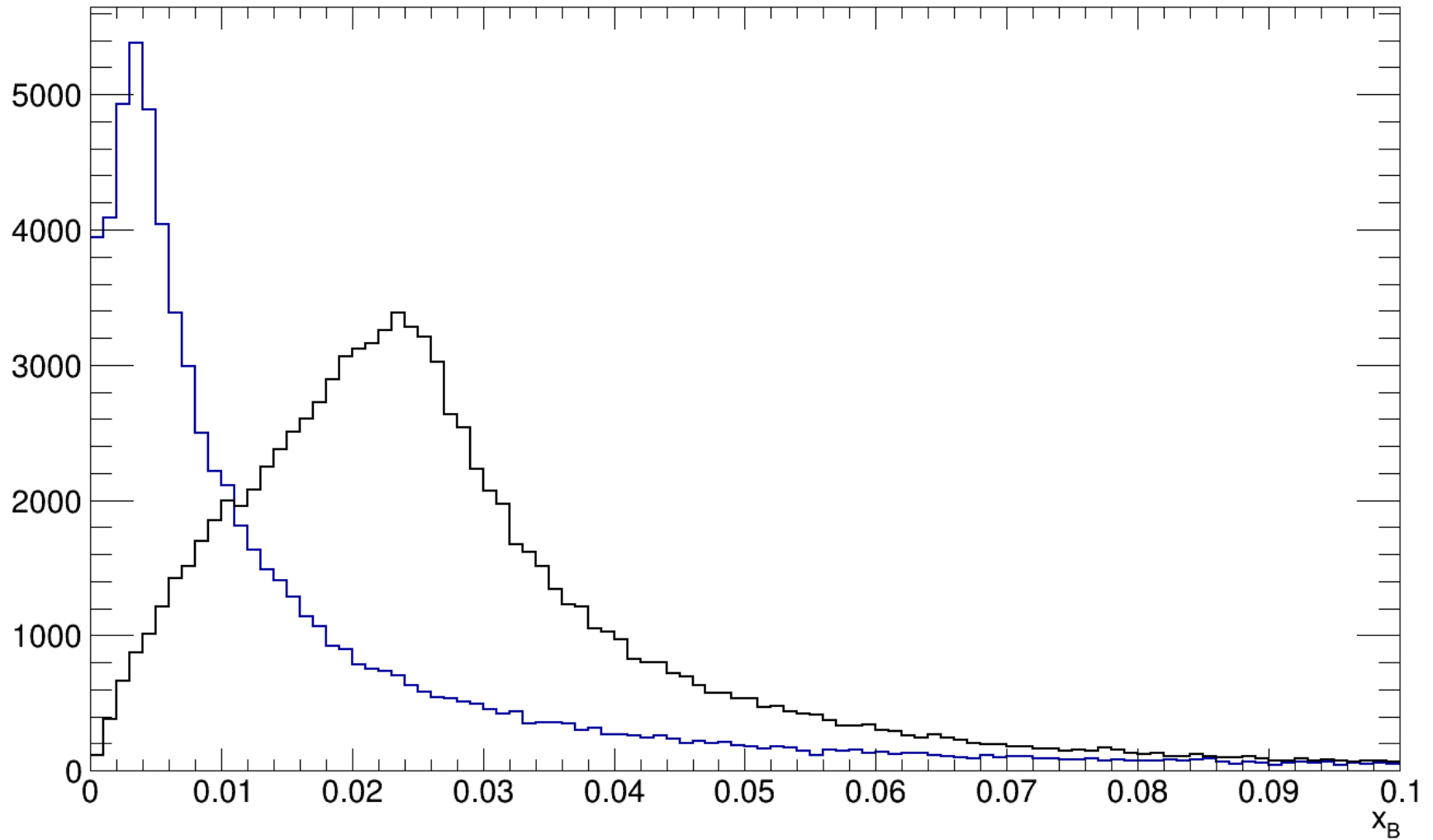
$$t = (p - p')^2$$

4

Electrons

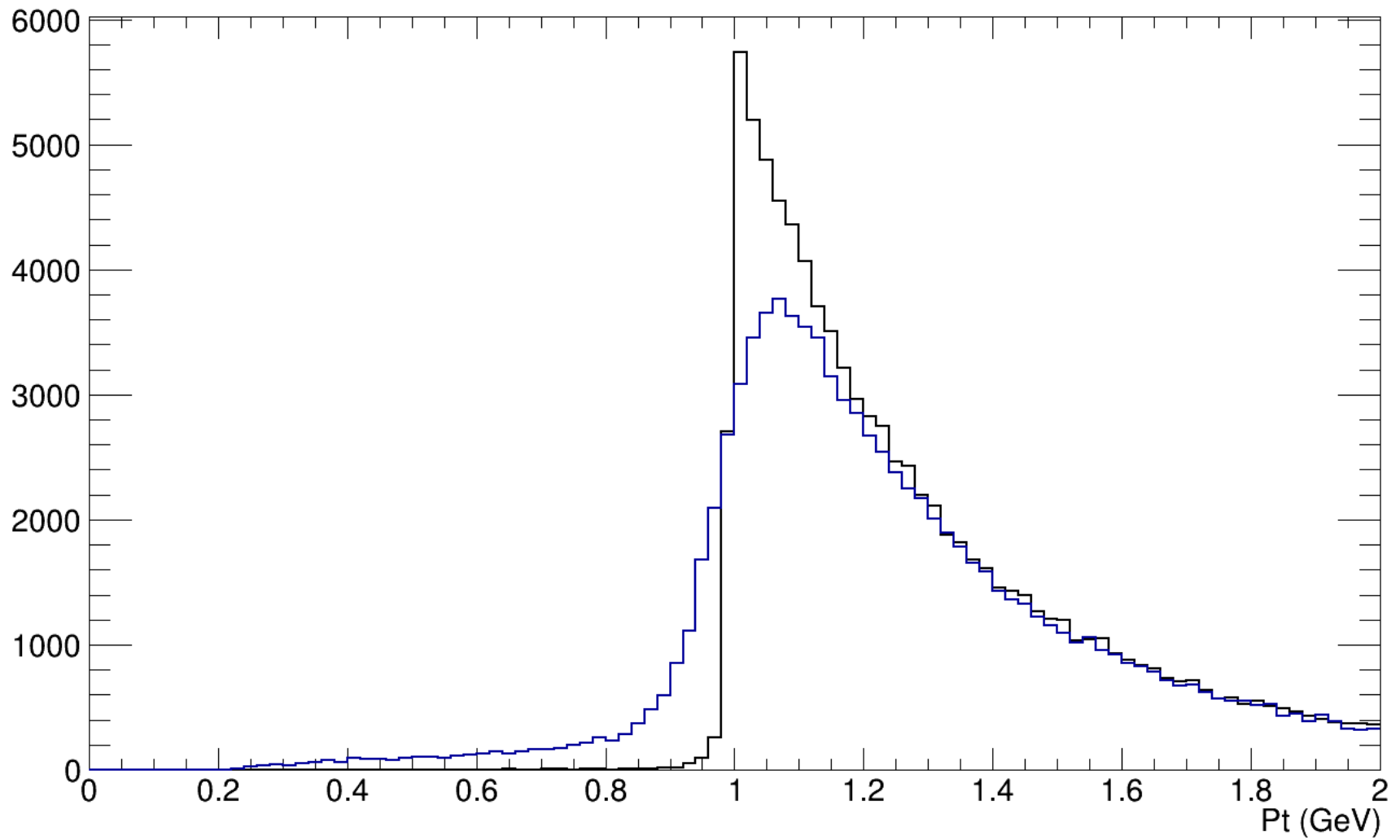Black: Generated   Blue: Reconstructed

5

Q^2

Black: Generated   Blue: Reconstructed
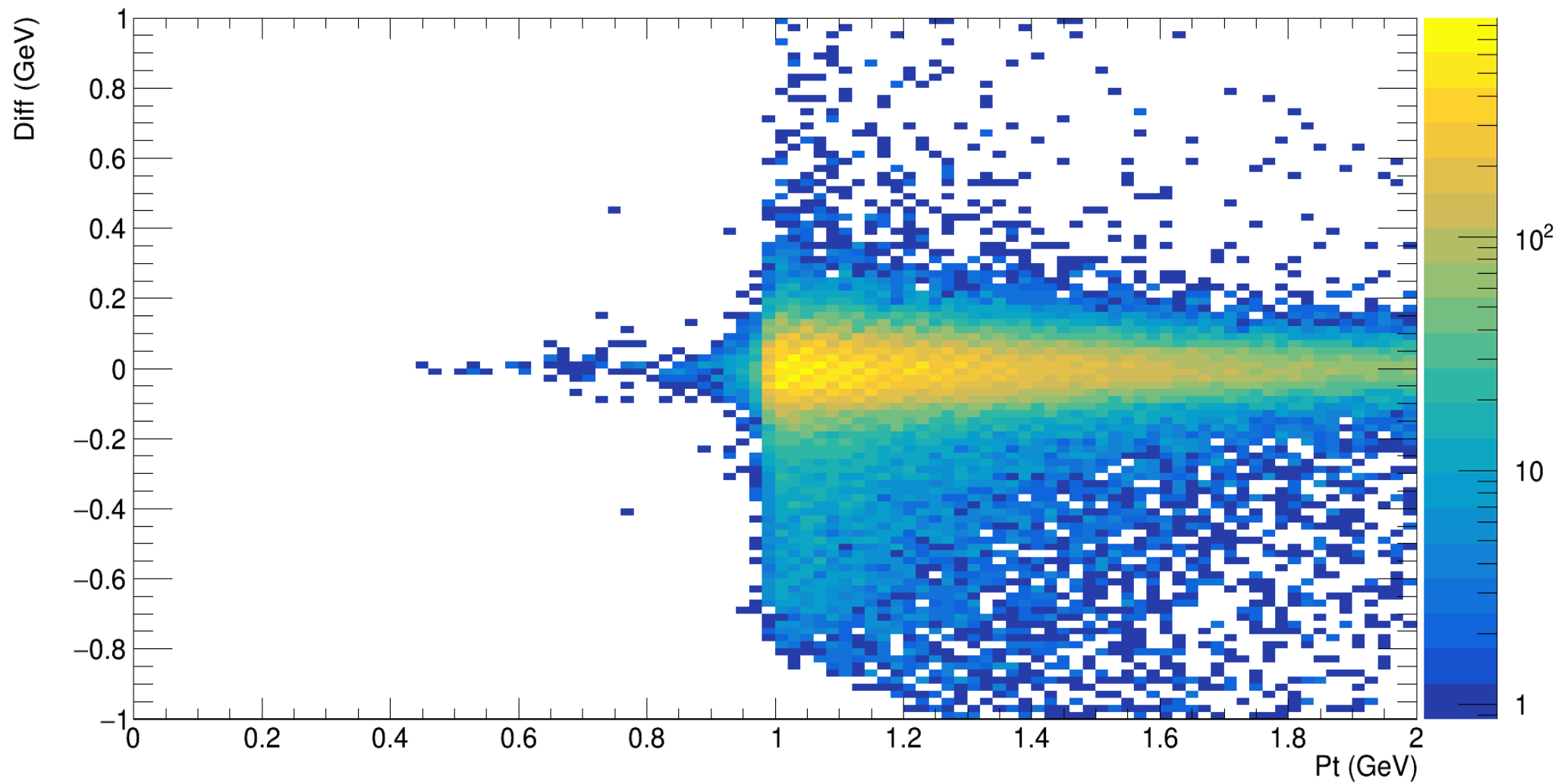
6

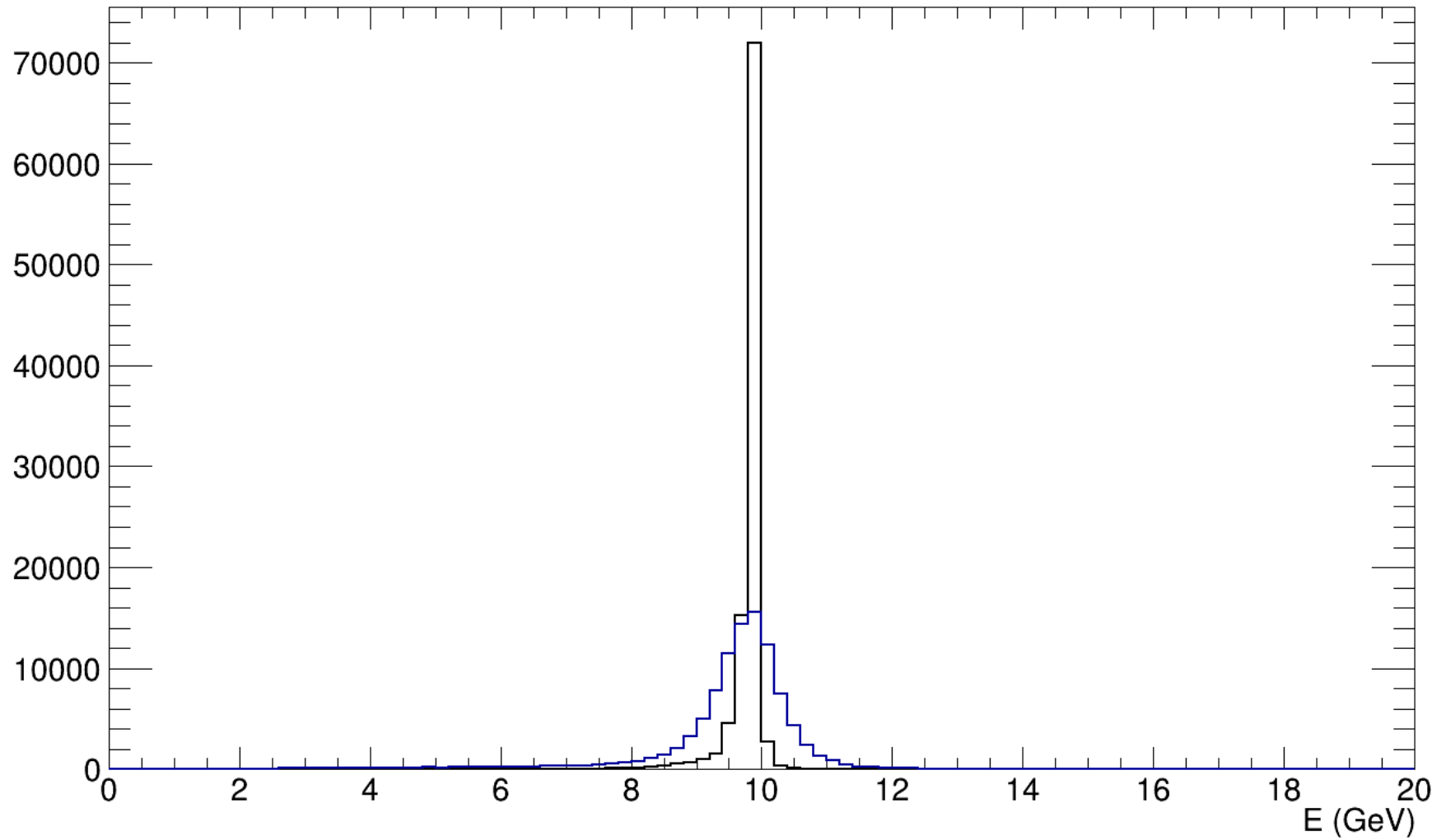$$x_B = Q^2/(2pq)$$

Black: Generated   Blue: Reconstructed

Pt (electron)

8

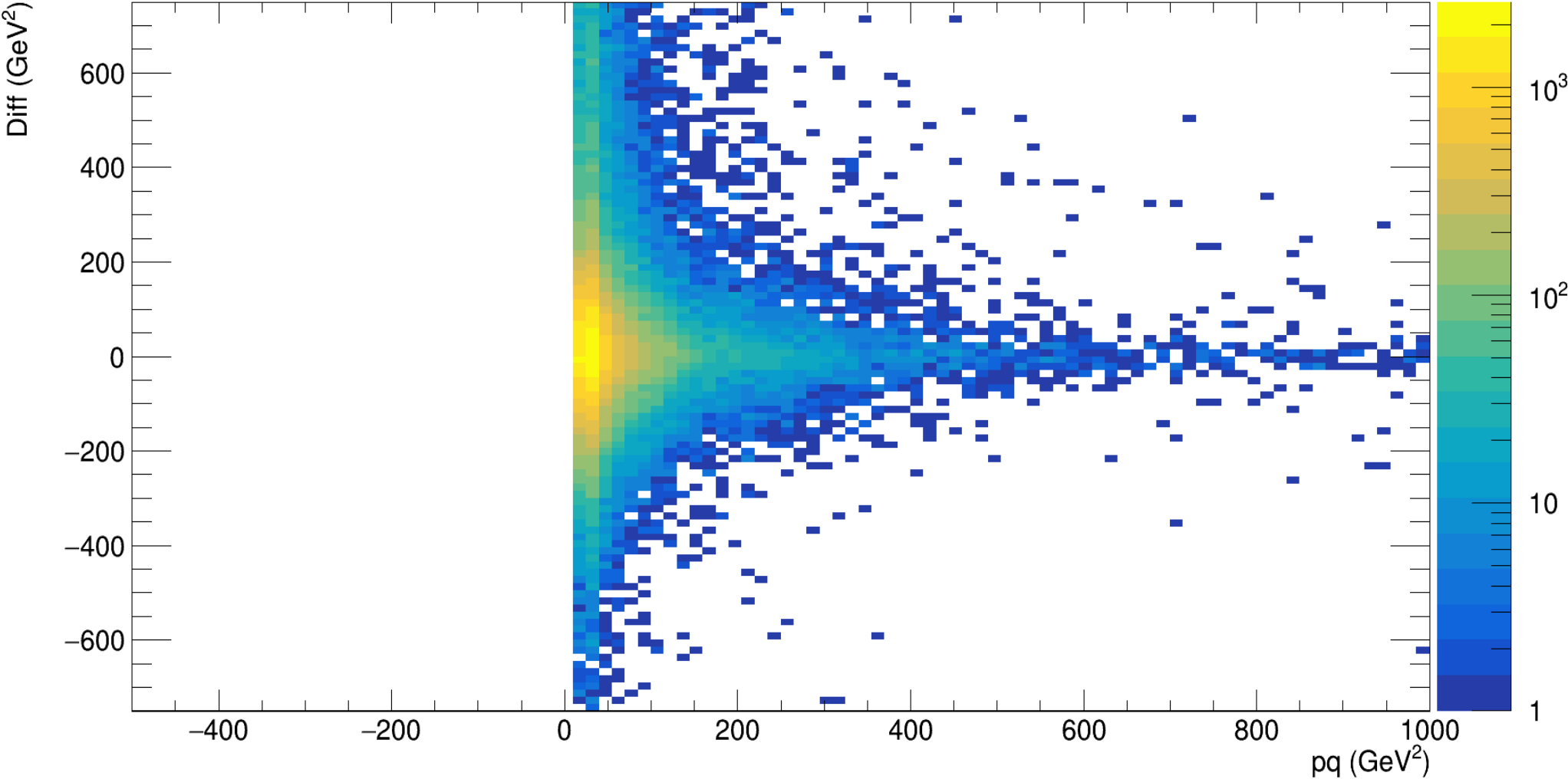# Reconstructed - Generated

9

E (electron)
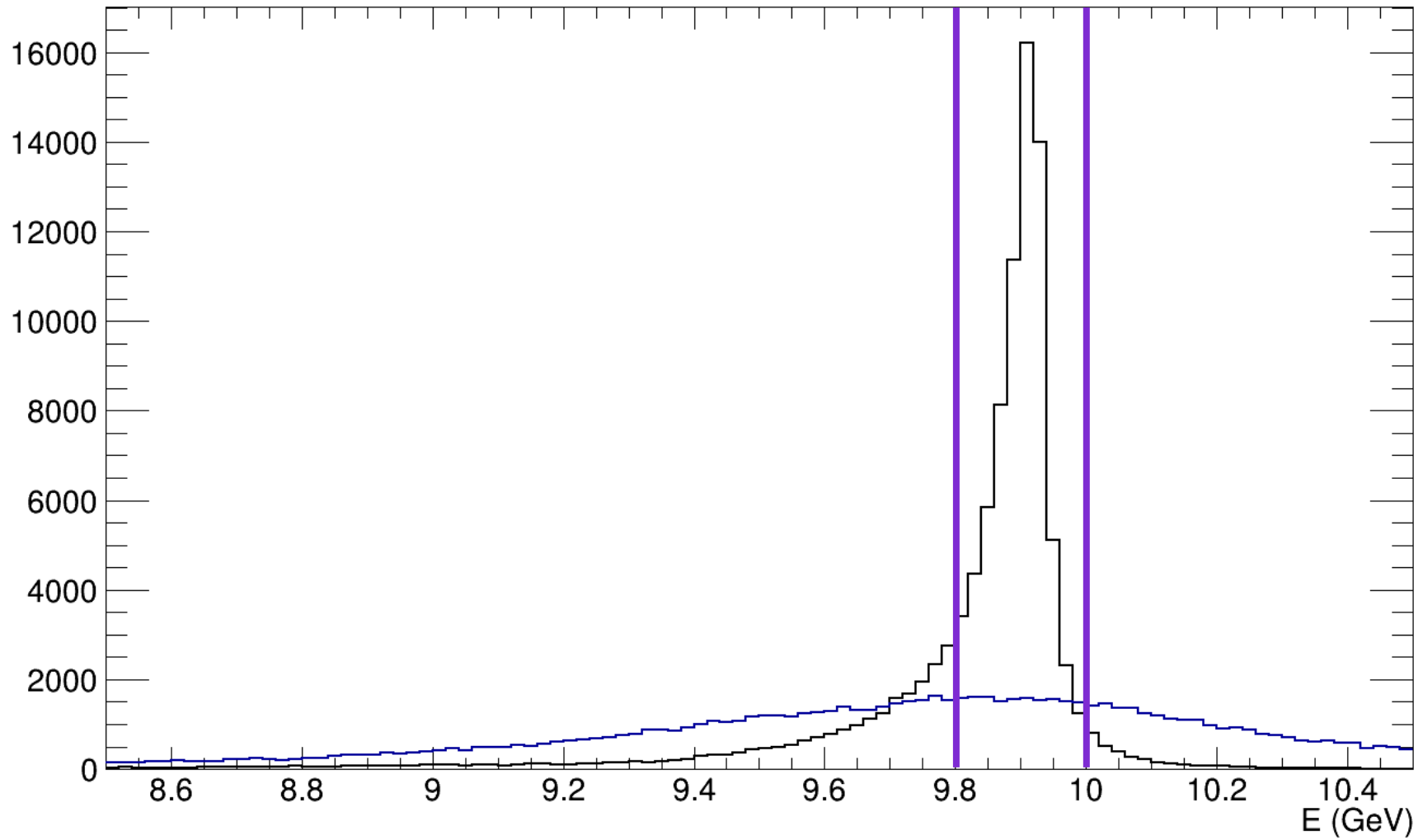

10

Reconstructed - Generated
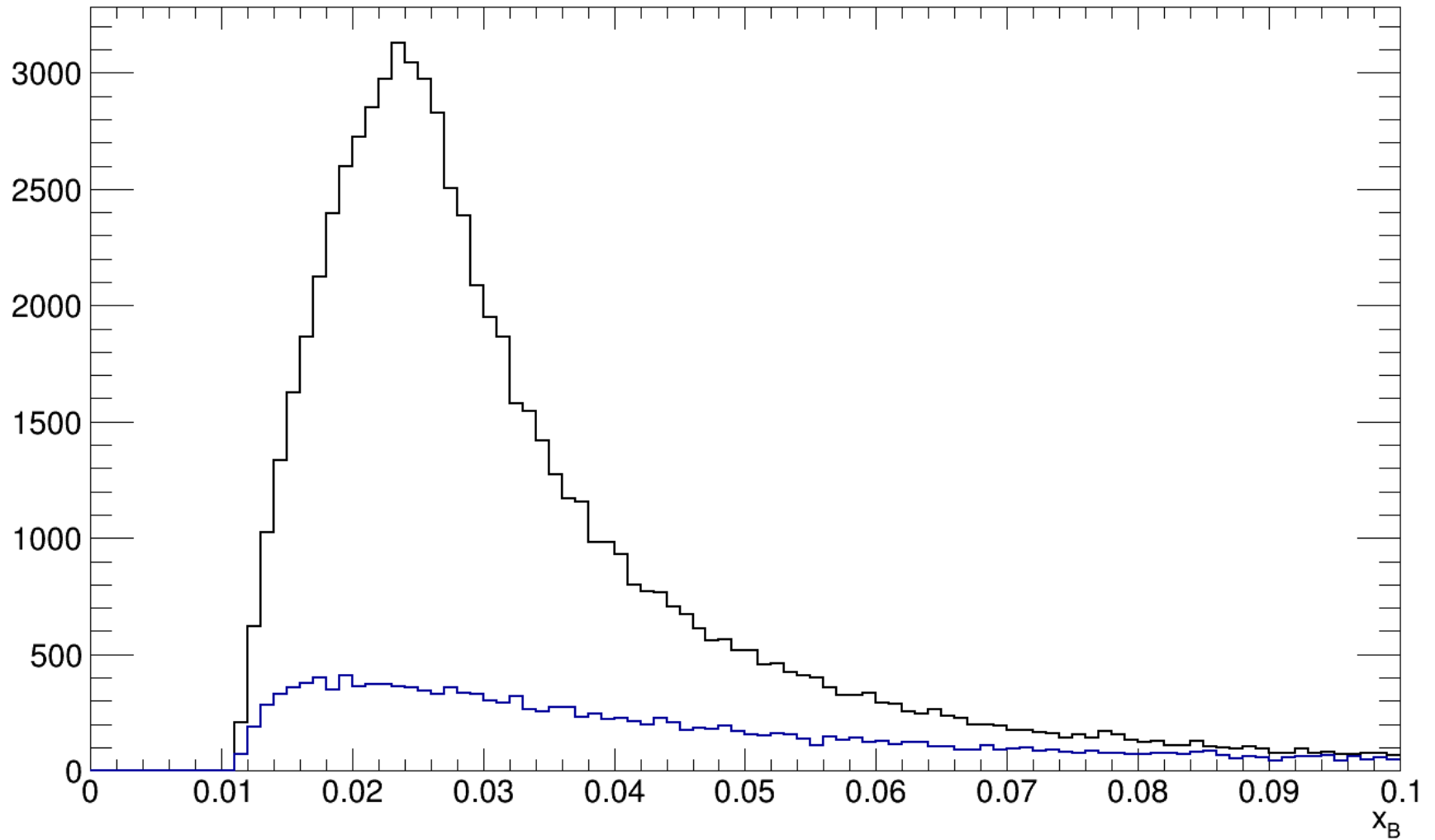

11
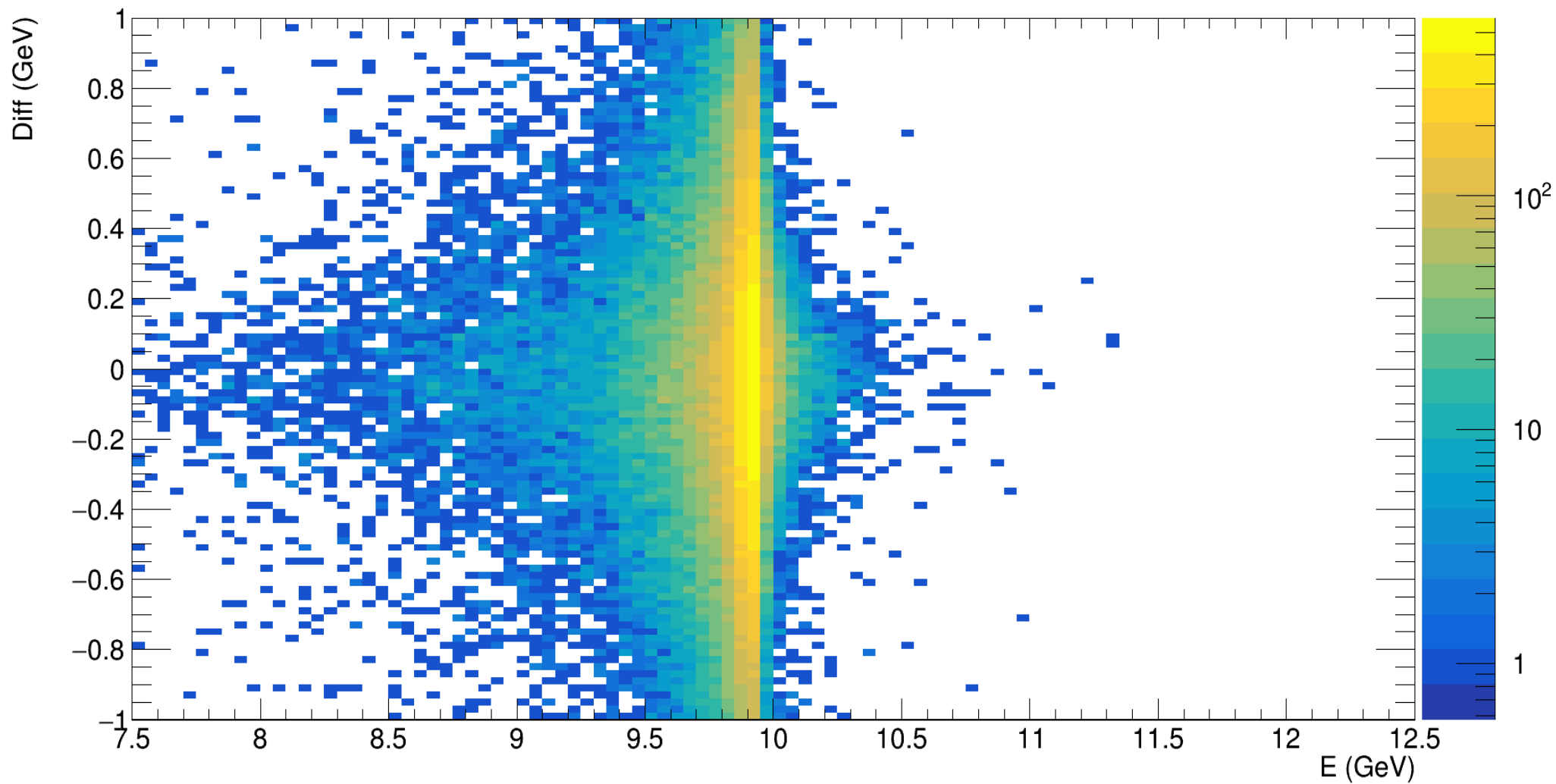
Difference of pq

Smearing

- The difference of the reconstructed x_B and the generated x_B is likely from the smearing.

Apply Cuts on the Energy

X_B after the Cut

Next

Look at the pion and decay photons.