

# B0 Benchmarking with DVMP

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# Experiment

- The simulation of  $ep \rightarrow e'p'\pi^0$  (10X100) for ePIC is now available.
- It has been included in the simulation campaign since last December.
- 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

- S3/eictest/EPIC/RECO/23.12.0/epic\_craterlake/EXCLUSIVE/DVMP/EpIC1.0.0-1.0

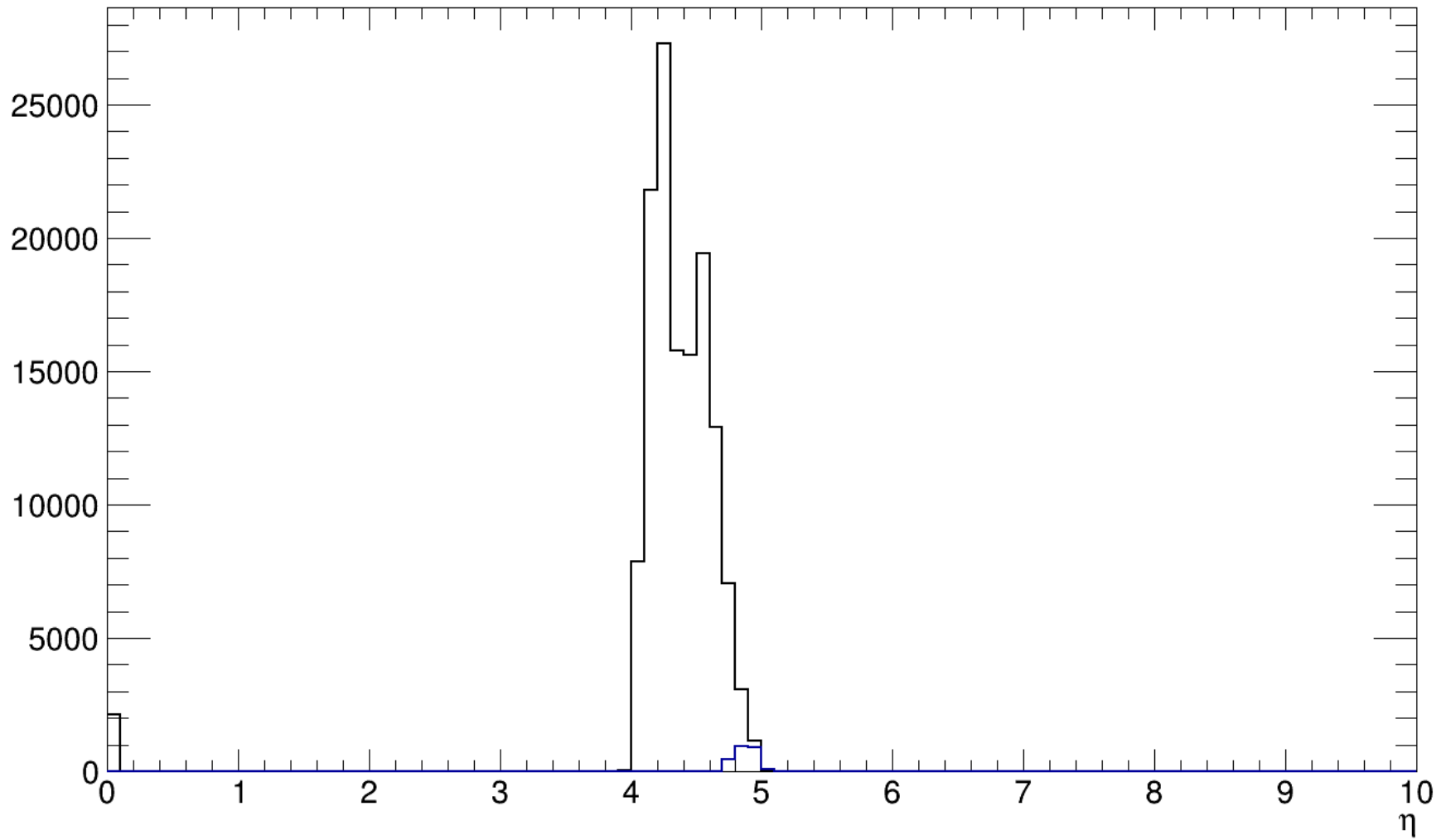
The total size is about 2.3Gb.

- Generator files: [github.com/eic/DVMPdataset](https://github.com/eic/DVMPdataset)

Generated with the EPIC generator (used with the Athena Proposal)

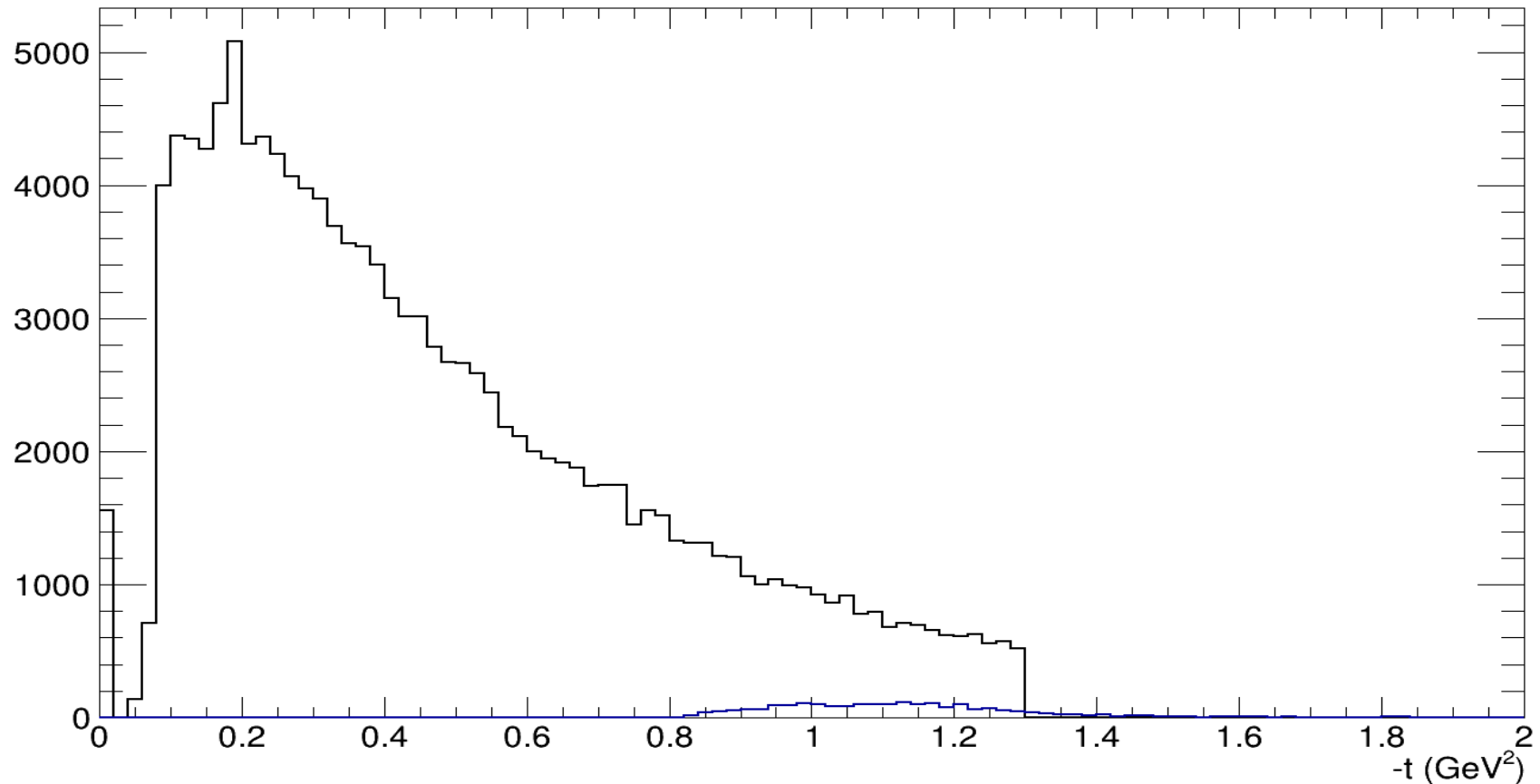
- 100k events have been generated (13.4k available in the files).

# Event Coverage



Only 1.8% of the protons are reconstructed (B0 only so far).

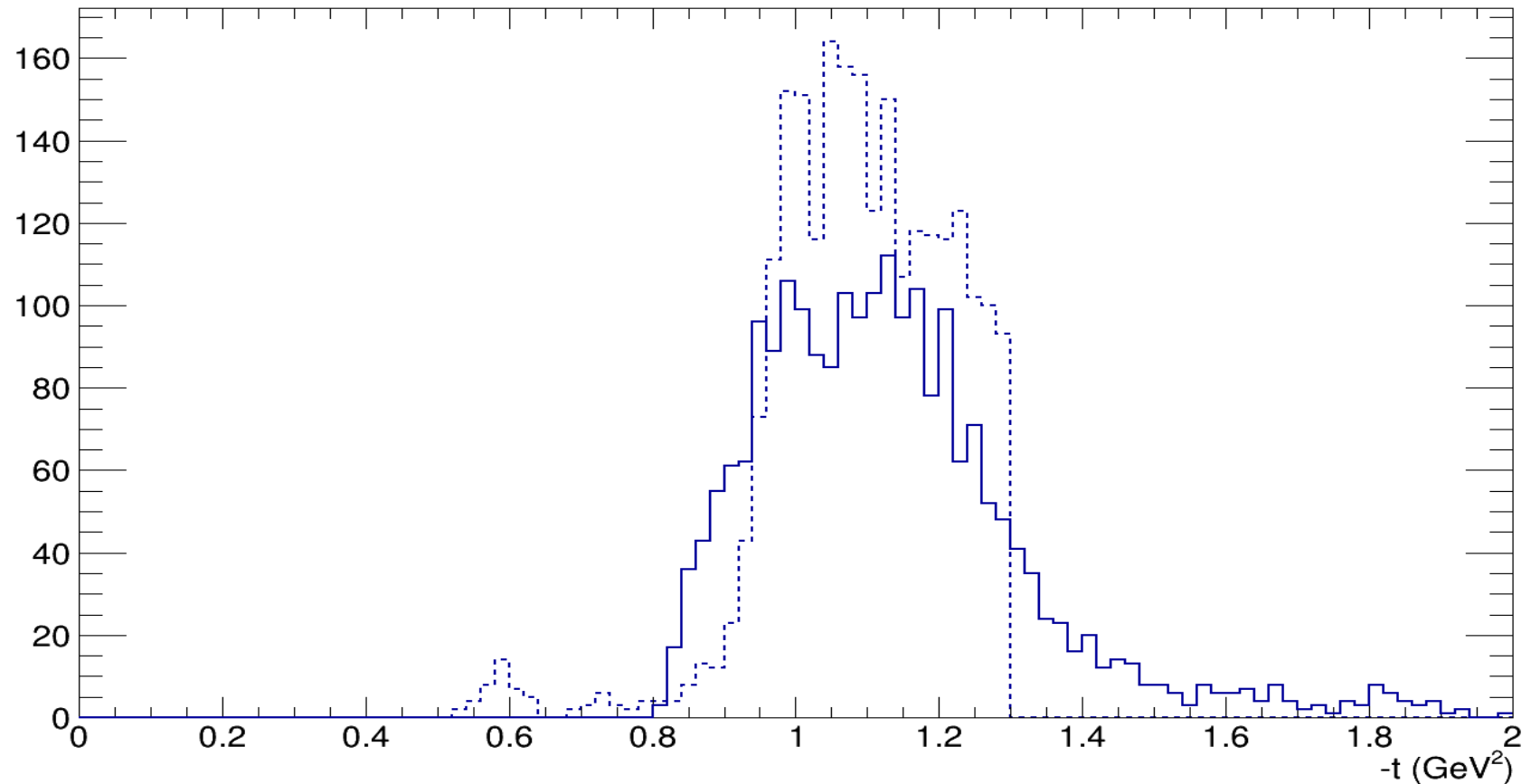
**-t**



The black curve indicates the generated  $-t$  distribution while the blue curve indicates the reconstructed one.

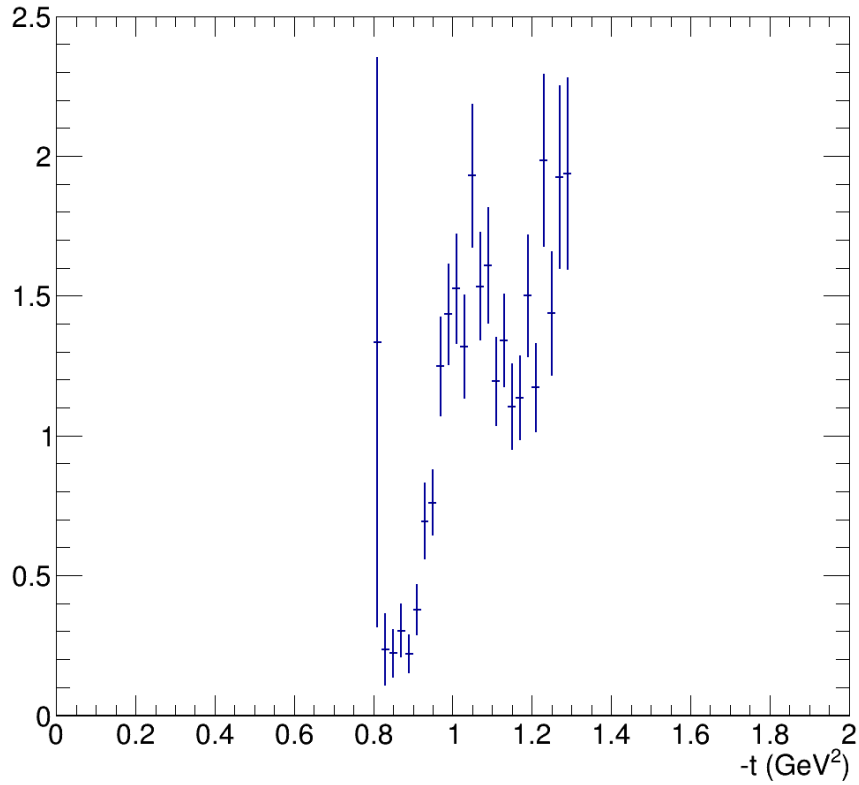
$$t = (p - p')^2$$

# Associated and Reconstructed

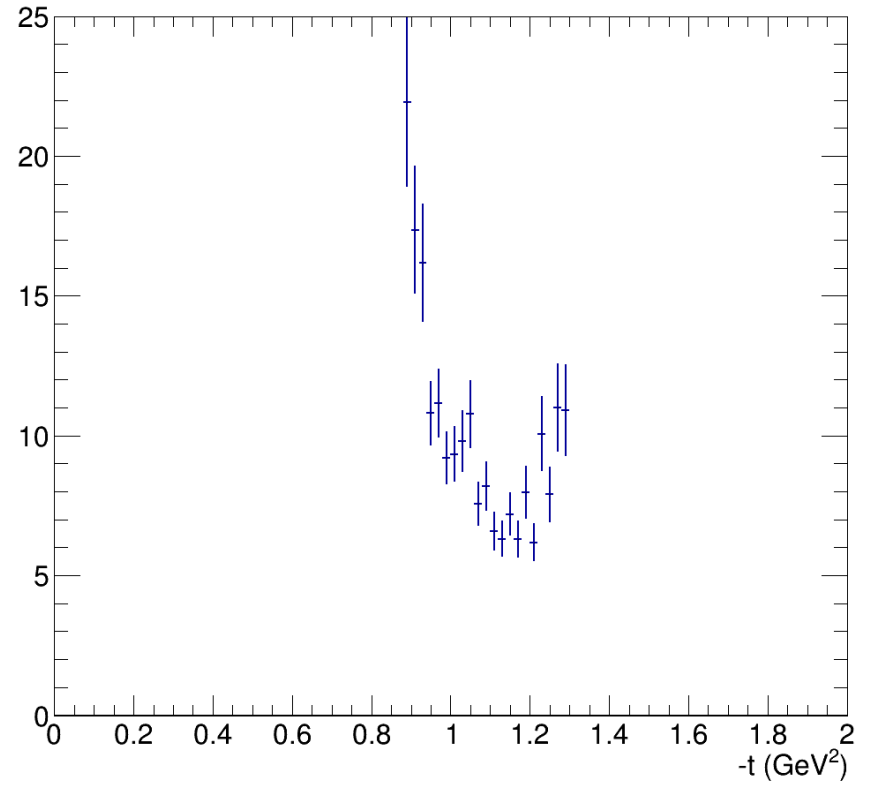


The associated curve (dashed) indicates generated events with corresponding reconstructed events available while the solid curve indicates the reconstructed ones.

# Ratio



Associated/  
Reconstructed



Generated/  
Reconstructed

# Next

- Add other kinematics such as  $Q^2$  and  $x_B$ .
- Look at the pion and decay photons.
- Other component (roman pots).