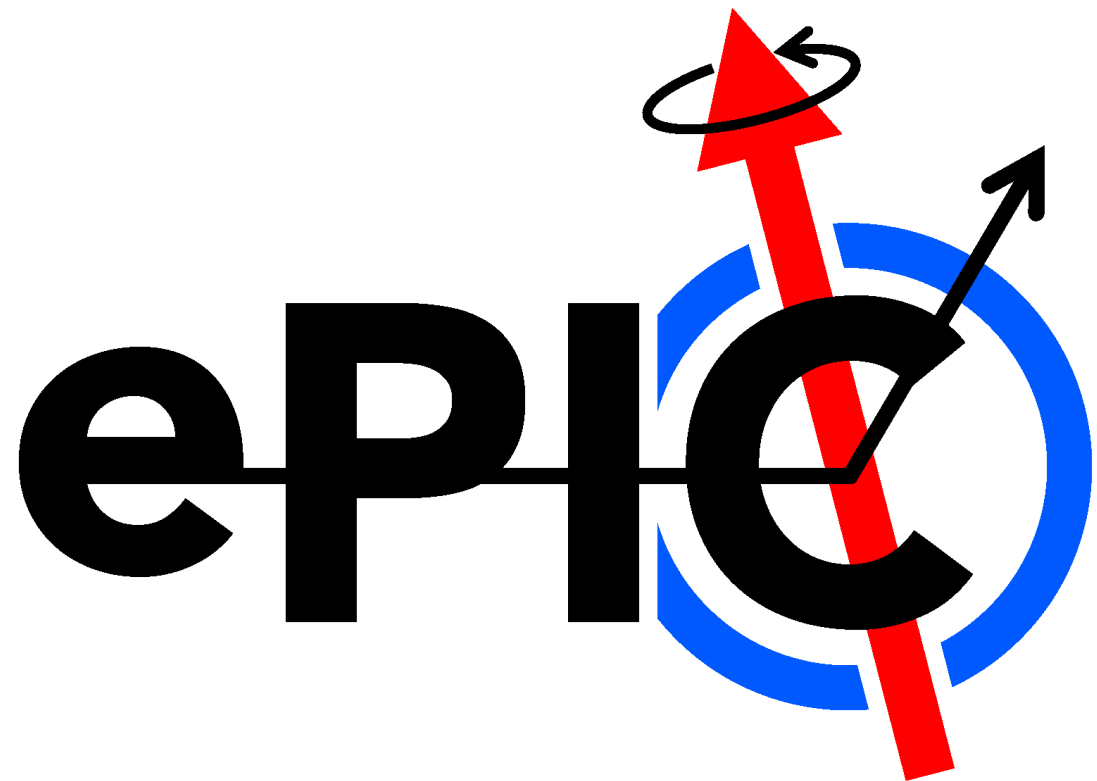


Inclusive physics benchmark plots

Claire Gwenlan, **Tyler Kutz**

ePIC PWG meeting

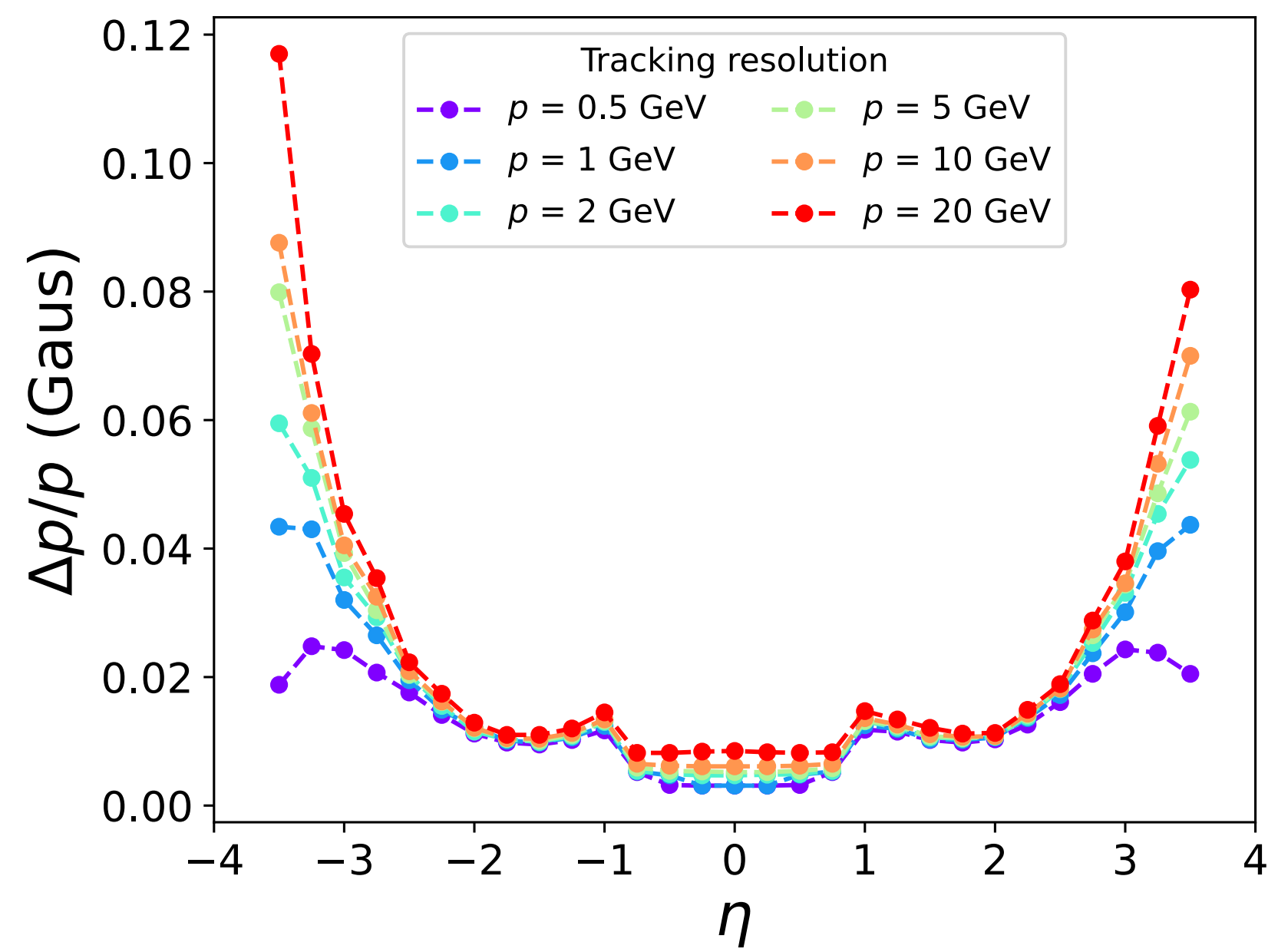
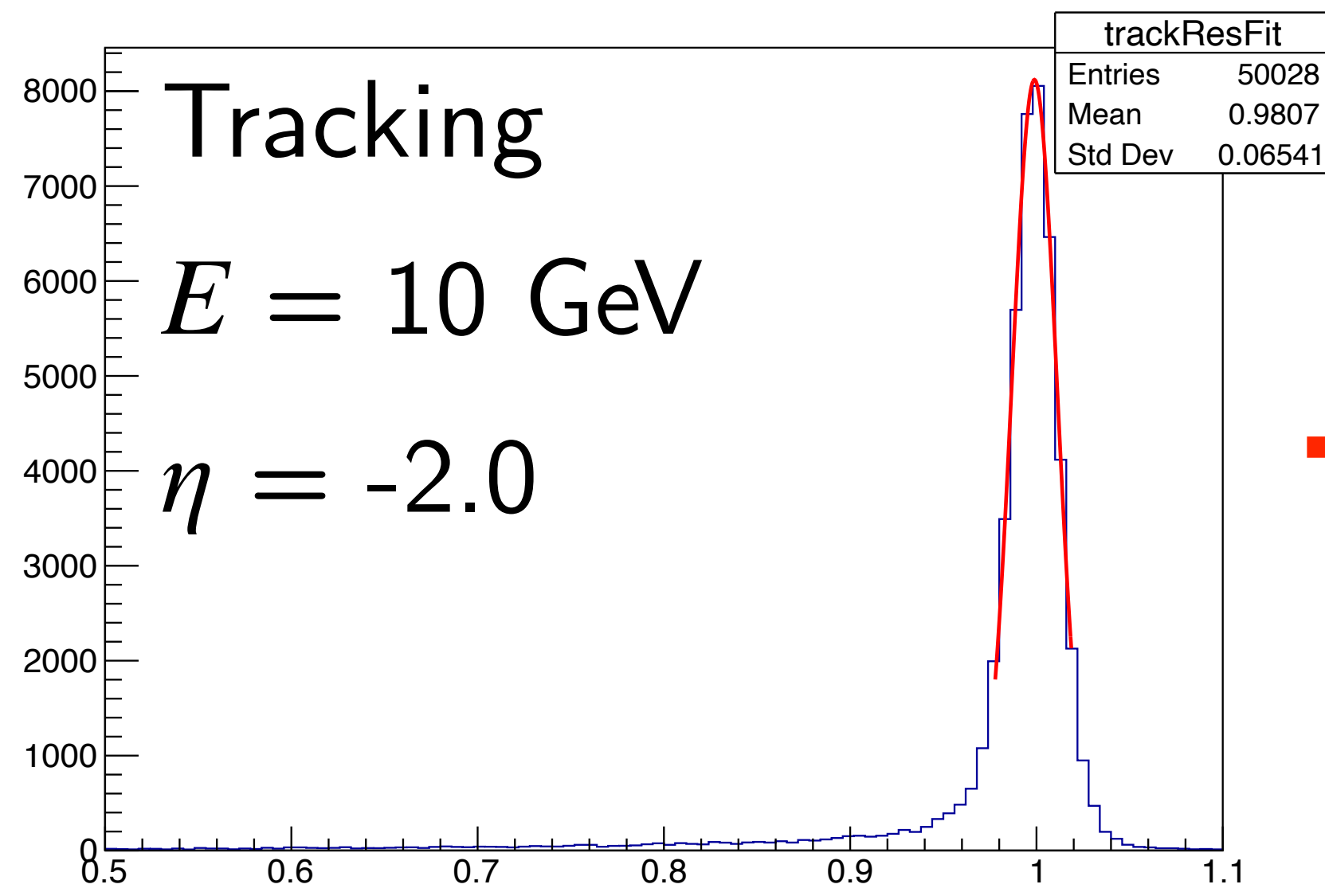
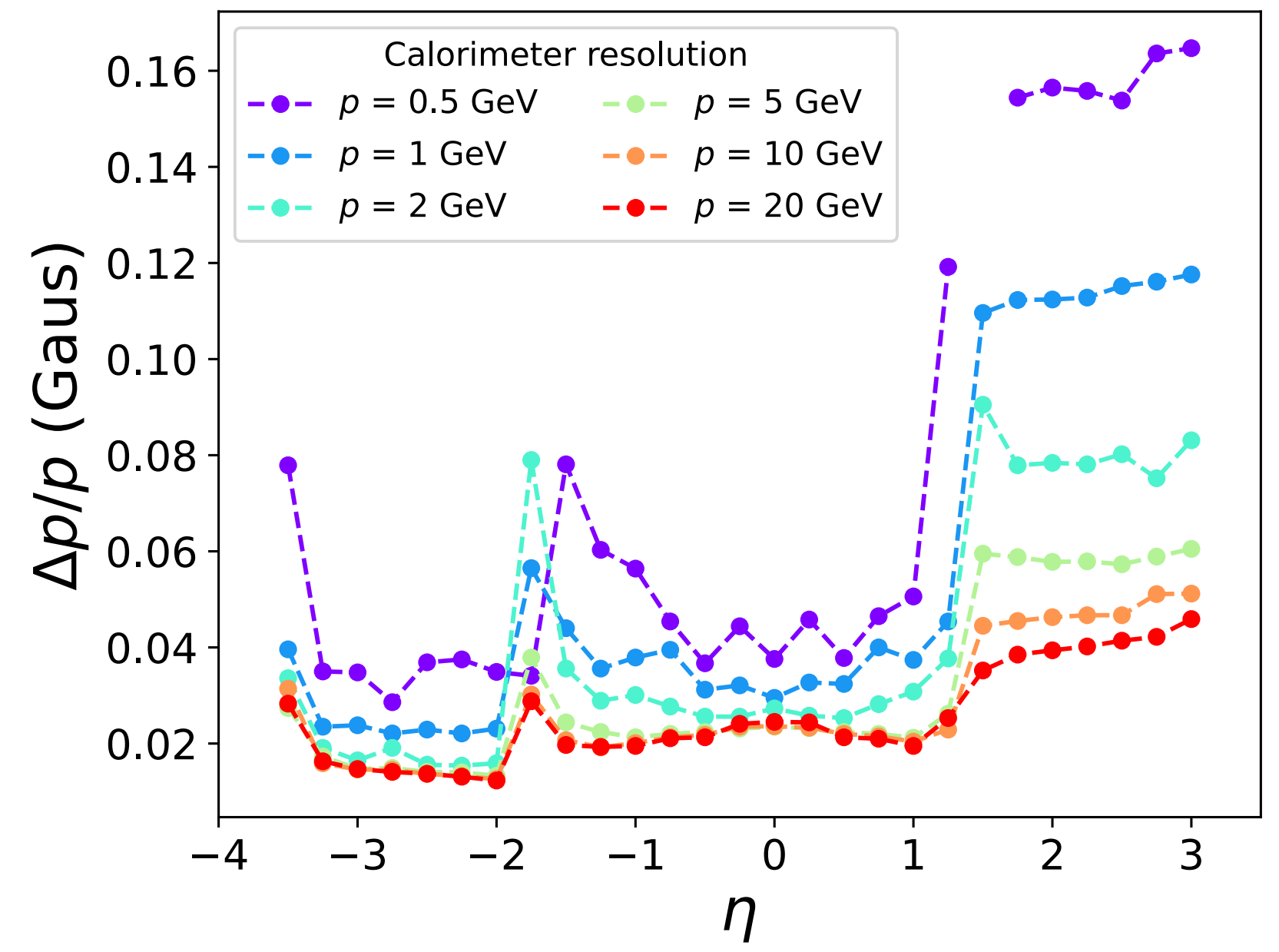
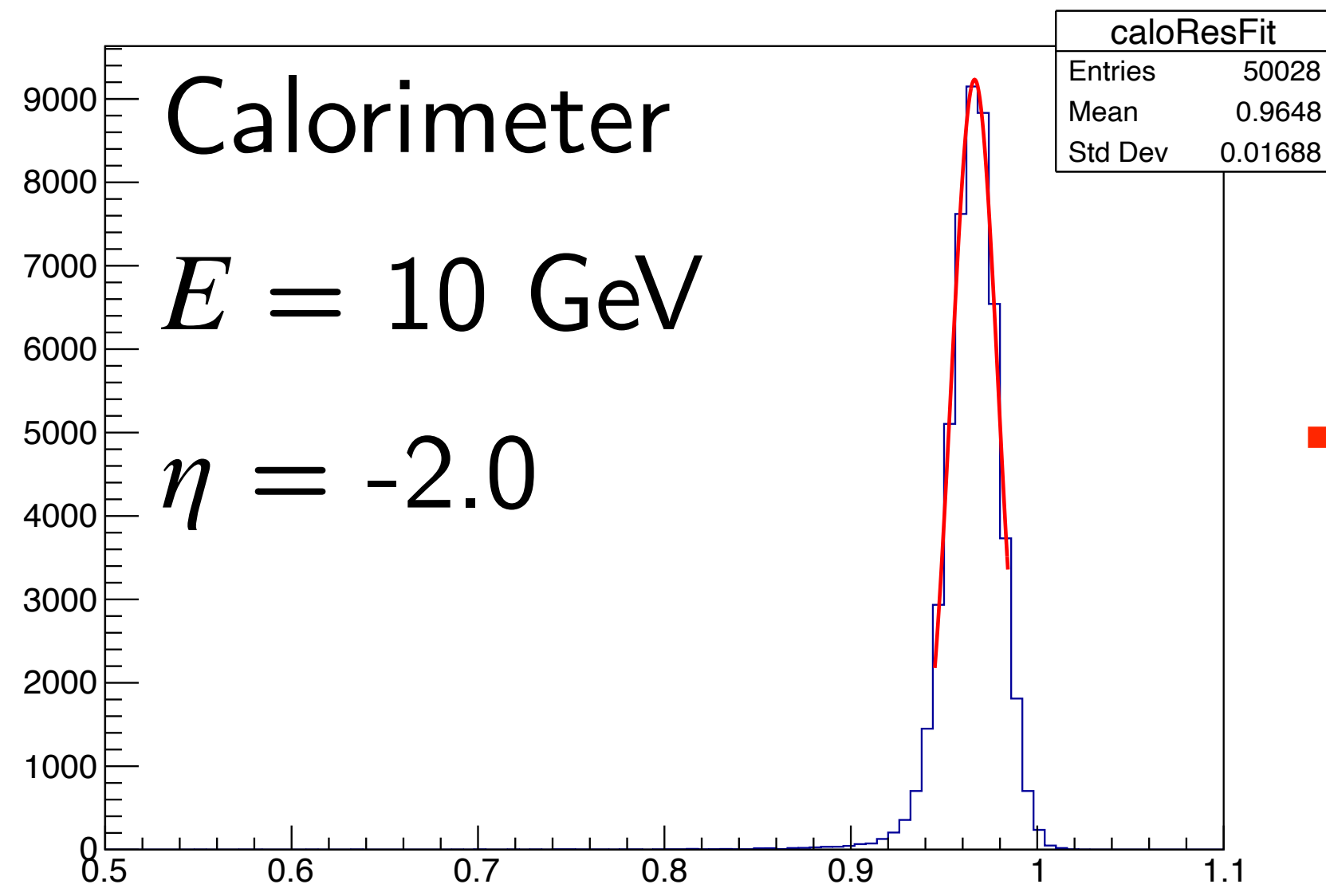
June 16, 2023



Caveats

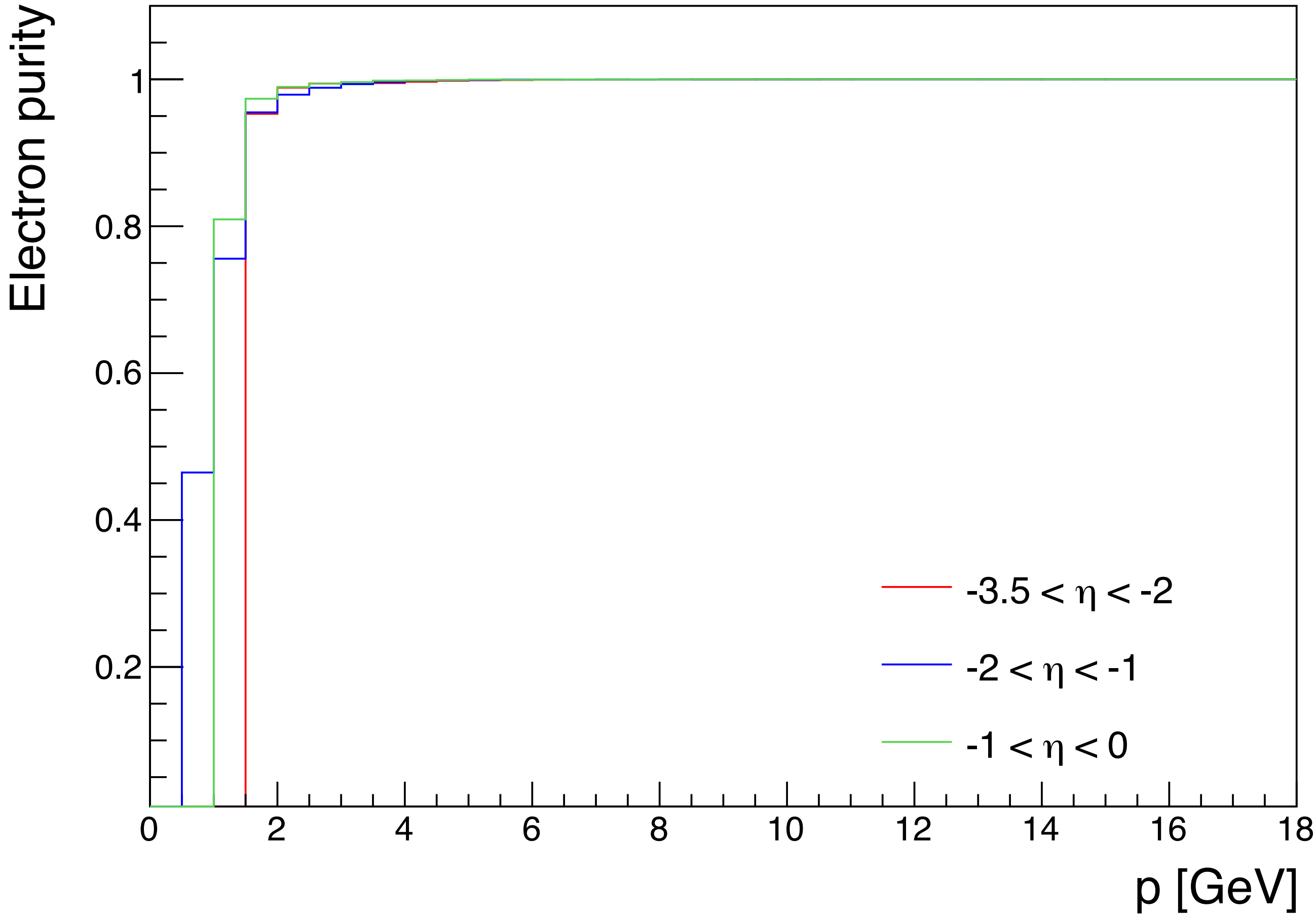
- Plots shown here are ancient artifacts, for illustration only
- More work required for automated production with new simulation

Electron resolutions



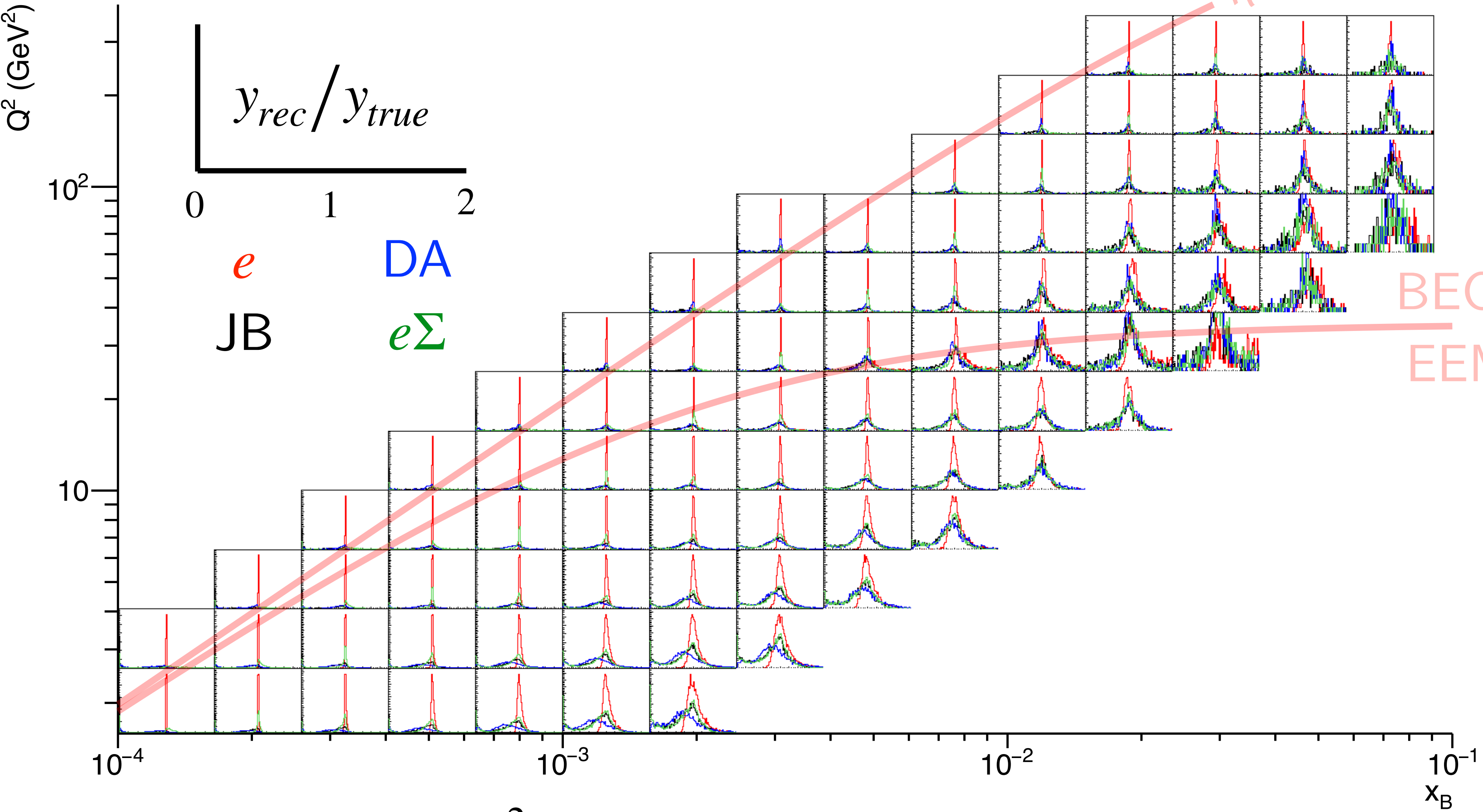
- Also for θ_e, ϕ_e
- Work with EW/BSM?

Electron ID



- Electron purity/efficiency
- Pion contamination limiting systematic for asymmetries

Kinematic resolutions/acceptance

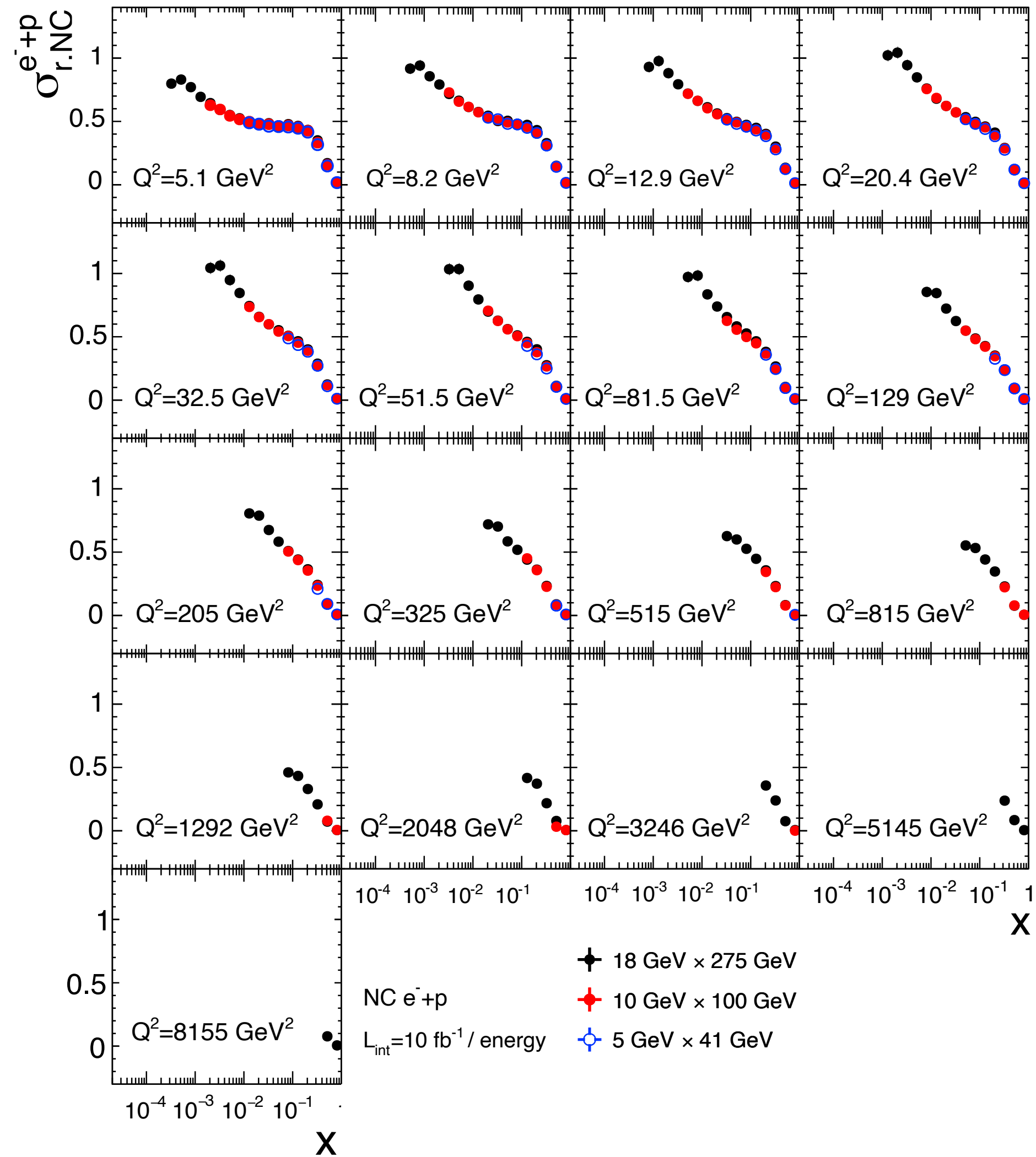


$Q^2 > 2 \text{ GeV}^2.$
 $W^2 > 4 \text{ GeV}^2.$
 $\eta > -3.2$
 $0.05 < y < 0.95$

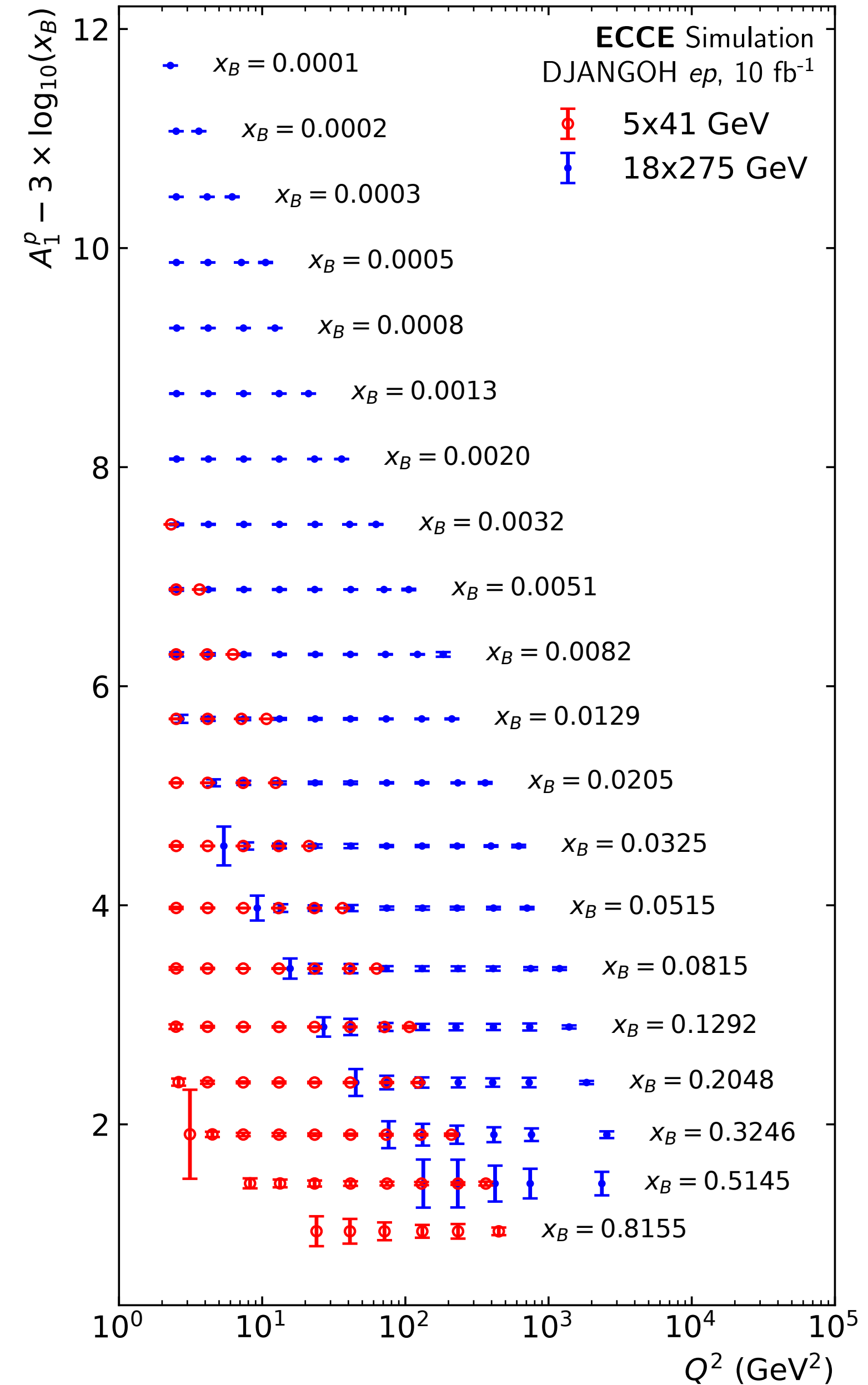
- Also for x_B, Q^2
- Easier visualization with parameterization(s): Gaussian fit, std. dev., etc.

Physics observables

Reduced cross sections



Double spin asymmetry



Summary

- Performance benchmarks:
 - Electron resolution
 - Electron purity/efficiency, pion contamination
 - Kinematic resolution and acceptance
- Physics benchmarks:
 - Reduced NC cross sections
 - Double-spin asymmetry
- Need to develop code for new simulation, automate as much as possible