Low-Q^2 Reconstruction

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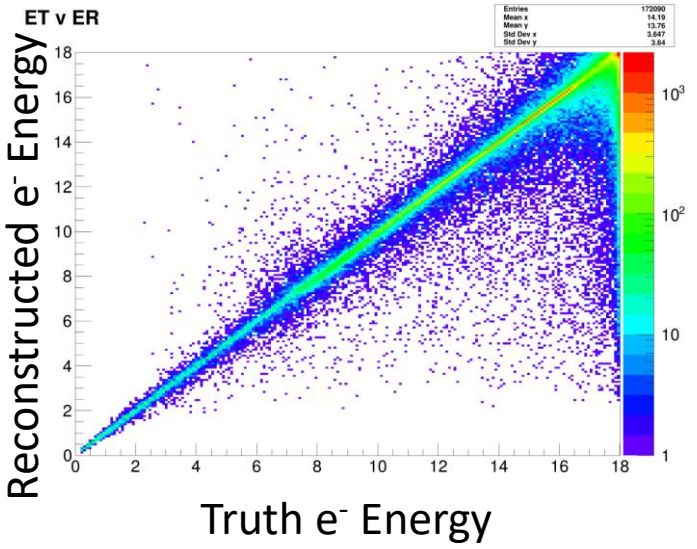


Updates

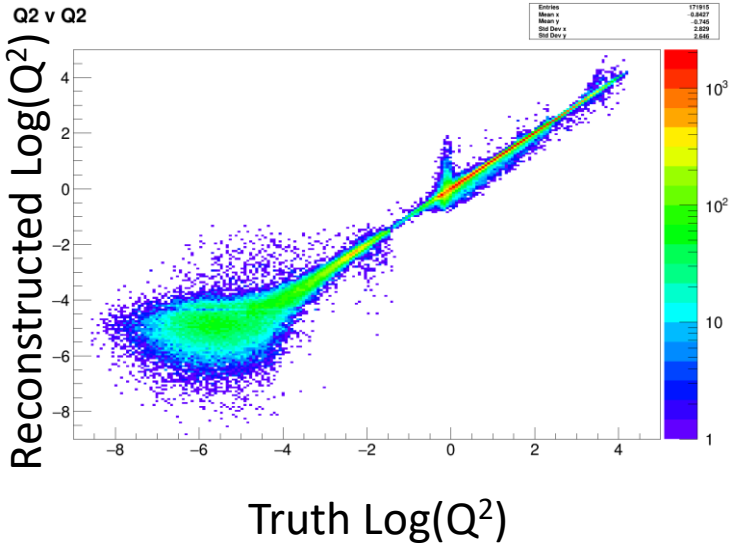
- Code now structured in line with EICrecon philosophy, no recent functional changes.

- Available for testing in branch - 266-integrate-lowq2-tagger-reconstruction

- Training scripts now available on branch – eic/detector_benchmarks at add_lowq2_benchmarks (github.com)
  Is this the correct location?

- Basic Matrix Propagation factory used by RPOTS in branch, need matrix building code somewhere public to test and compare – eic/EICrecon at common_transfer_matric_algorithm (github.com)
- Adaptive Matrix Propagation method will also hopefully be available soon.

- Exploring Condensation GraphNN to reconstruct scattered electron directly from hits– Object condensation: one-stage grid-free multi-object reconstruction in physics detectors, graph, and image data | The European Physical Journal C (springer.com)
  Promising toy model results



Beamline setting integration into workflow

Updates

- Changes made to afterburner add beam species and energy to hepmc run metadata – eic/afterburner at add_energy_to_run_attributes (github.com)
- DD4hep changes have been made to allow run metadata to be loaded
  - Need to test to see how this is output
  - Create a robust and flexible workflow to be added to npsim to read this prior to geometry construction.
- ePIC simulation has more magnetic steering options, added today.

Workforce

Mostly still just myself working directly on this (with support from software group and Glasgow locally)
Working with Richard Tyson (Glasgow) on GNN approach
Nothing major has needed doing for getting Low-Q^2 electrons for a couple of months.
Beamline settings will be my next focus, will more changes throughout the workflow.