

Genie (vs Powheg)

(to be continued..)

./configure

- Running most recent GENIE configured with Pythia 6 and APFEL for NLO SF
- <PDF4LHC21_mc> & <NNPDF31sx_nlo_as_0118_LHCB_nf_6>, CC-HEDIS tune and CKM params from overleaf
- $E_\nu = 1 \text{ TeV}$

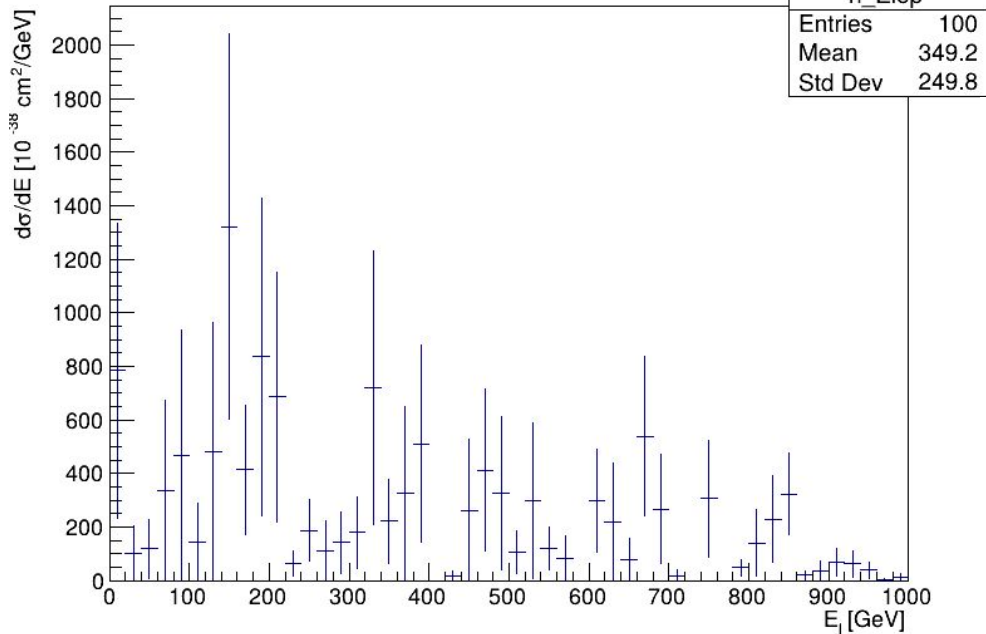
Status:

- Had trouble compiling GENIE with (very very) old Py6, which requires an older ROOT, which requires an older linux version, which was not designed for the compiler that this ROOT requires etc etc etc.....
 - -> Peter created an apptainer to run GENIE in, took some time to get working correctly
 - Now we can run events
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- Spline generation jobs running with final settings, but takes **WAY** longer than expected and than earlier trial runs.
 - 11hrs for 100 knots. GENIE only uses 1 core and cannot parallelize the spline generation up any further. Ideally one would have at least 1000
 - Splines with NNPDF3.1, PDF4LHC21_mc and final settings running now

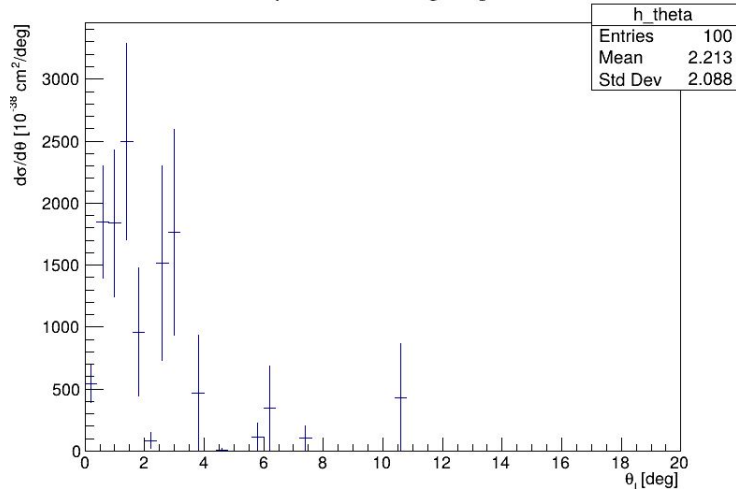
100 event test sample for GENIE

Precomputed splines, unknown PDF/settings.

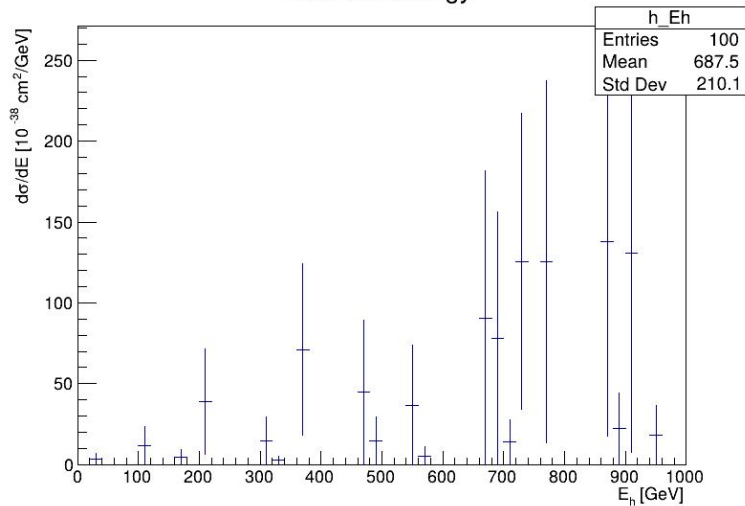
Outgoing lepton energy



Lepton scattering angle



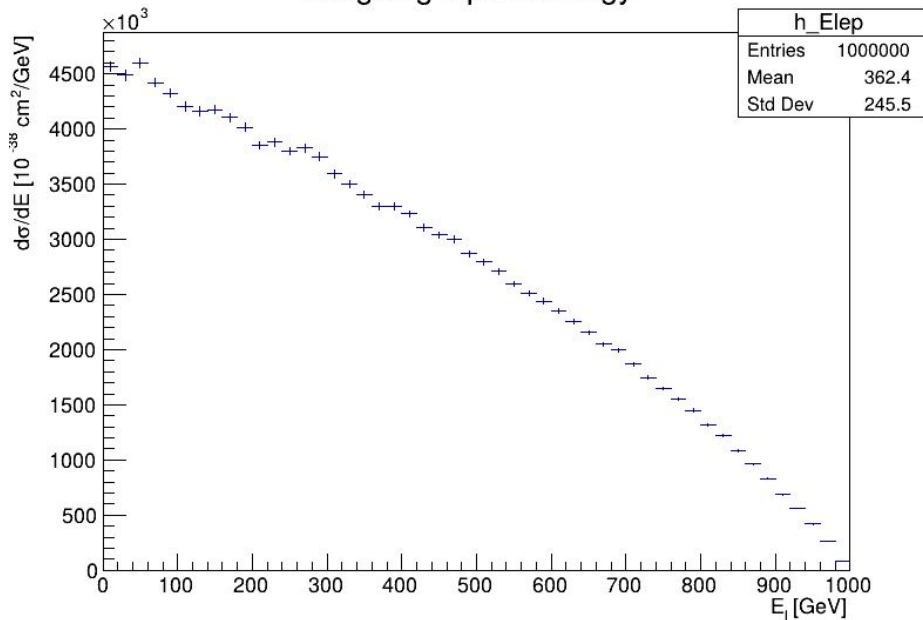
Hadronic energy



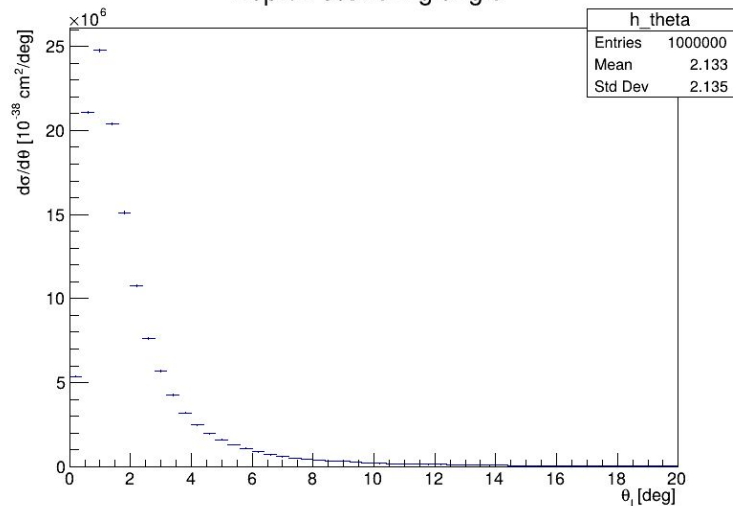
1e6 event test sample for GENIE

Precomputed splines, unknown PDF/settings.

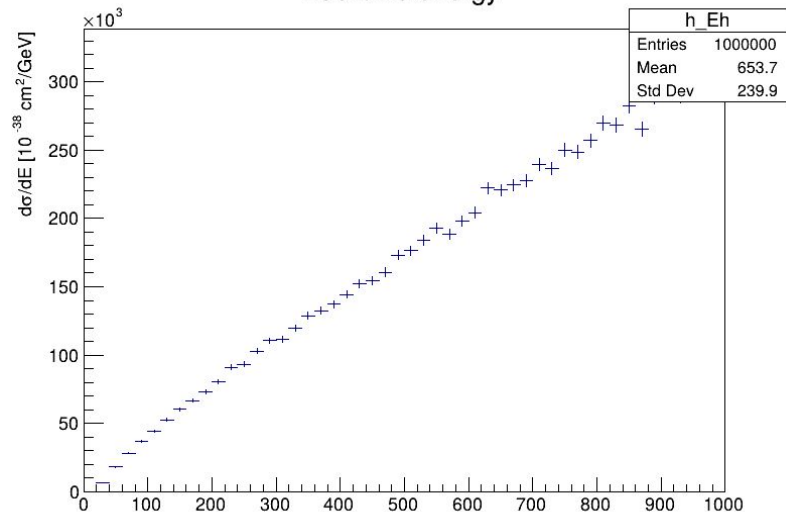
Outgoing lepton energy



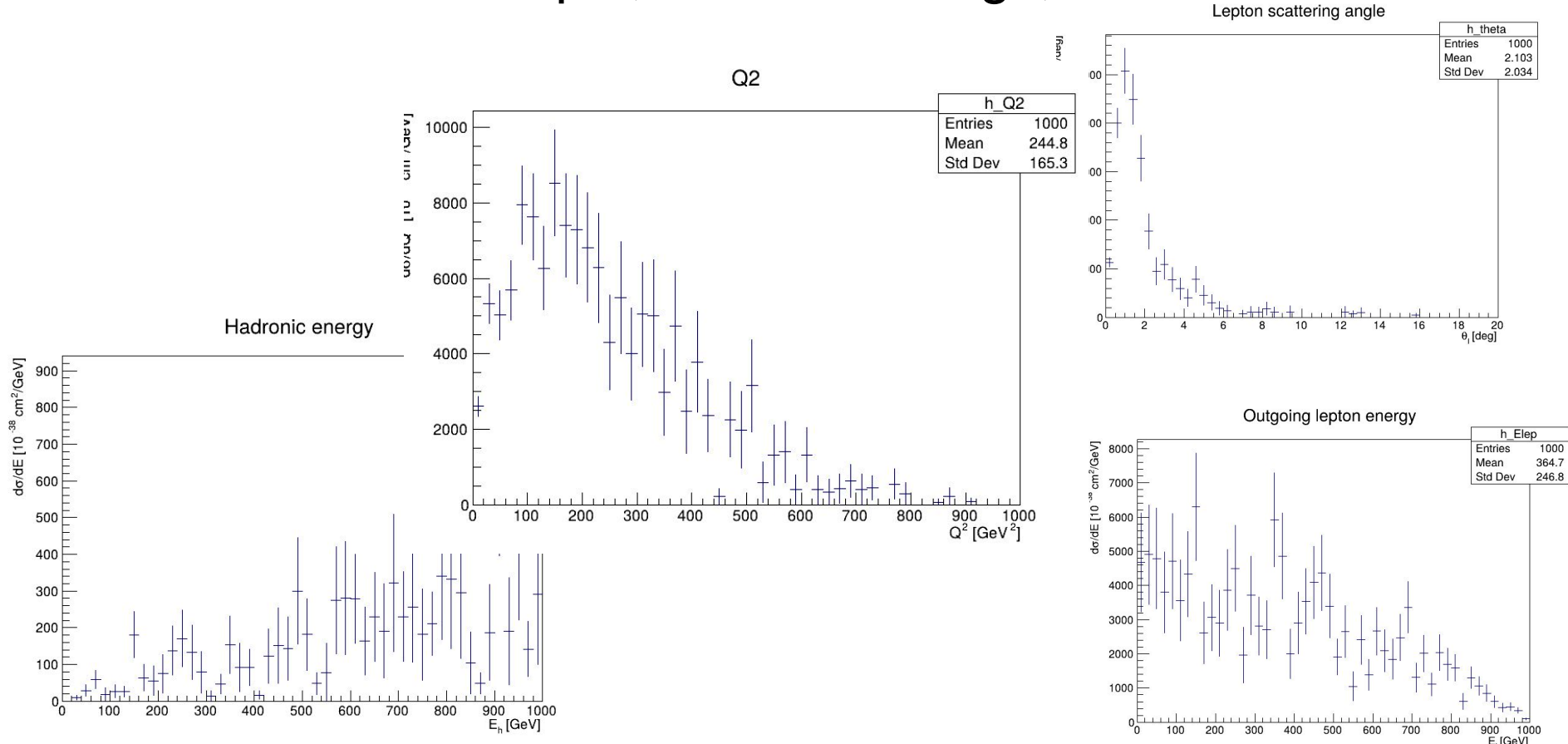
Lepton scattering angle



Hadronic energy



1000 event test sample, correct settings, NNPDF31sx



Splines with correct settings running now

- PDF4LHC21_mc, settings on overleaf
- Should be done tomorrow incl. comparison to powheg all in 1 plot