Genie User Forum

15 May 2019

UNIVERSAL NEUTRINO GENERATOR
& GLOBAL FIT

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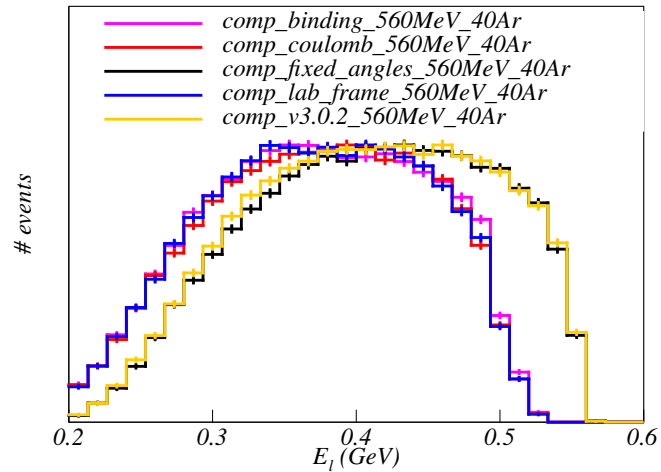On behalf of the GENIE collaboration

Genie Updates

New Genie Release

- We released a new version with the bug fixes about one month ago
  - Various small changes were made to Nieves and Llewellyn-Smith quasielastic models.
    - Most important change was in the handling of binding energy.
  - Delta → nucleon+pion angular distribution is now in the correct frame
  - New Reweight version tagged to be fully compatible with a change in the configuration system
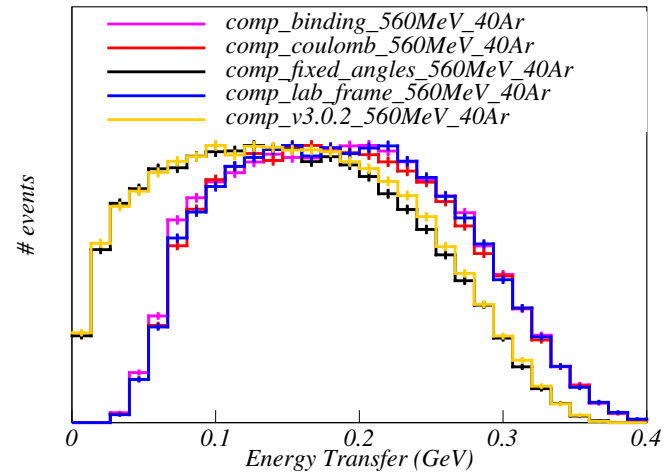
  - Detailed technical note is public on the GENIE dodb
    - https://genie-docdb.pp.rl.ac.uk/cgi-bin/ShowDocument?docid=113
    - The version released in the email announcement was not complete

New Genie Release

CCQE $\nu_\propto$-^{40}Ar @E = 0.56 GeV

- comp_binding_560MeV_40Ar
- comp_coulomb_560MeV_40Ar
- comp_fixed_angles_560MeV_40Ar
- comp_lab_frame_560MeV_40Ar
- comp_v3.0.2_560MeV_40Ar

The New Genie release

Figure left: EMQE ^{12}C @E = 0.56 GeV & $\theta = 60^o$, $\frac{d^2\sigma}{d\Omega\,dE}$ (nb/sr/GeV) vs Energy Transfer (GeV). Legend: Data, Rosenbluth Old Gen, LS Old Event Gen, LS New Event Gen.

Figure right: EMQE ^{12}C @E = 0.56 GeV & $\theta = 60^o$, $\frac{d^2\sigma}{d\Omega\,dE}$ (nb/sr/GeV) vs Energy Transfer (GeV). Legend: Data, Rosenbluth Old Gen, LS Old Event Gen, LS New Event Gen SG Bug Fixes.
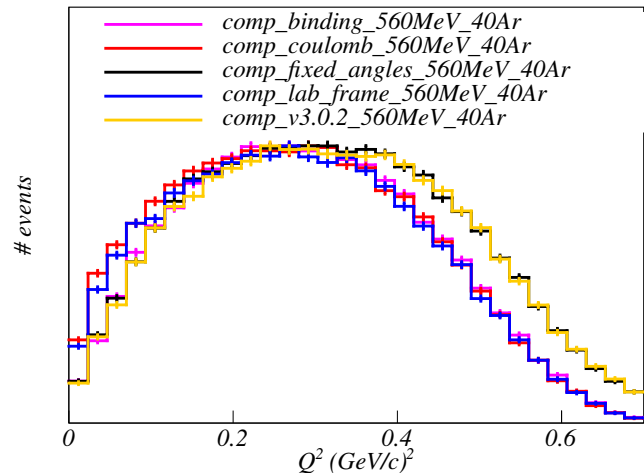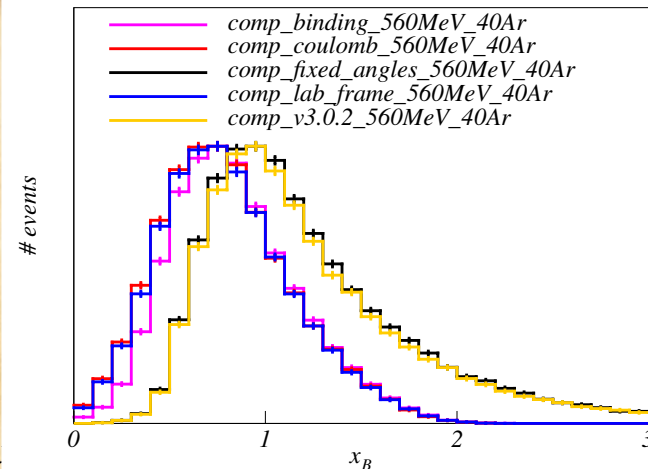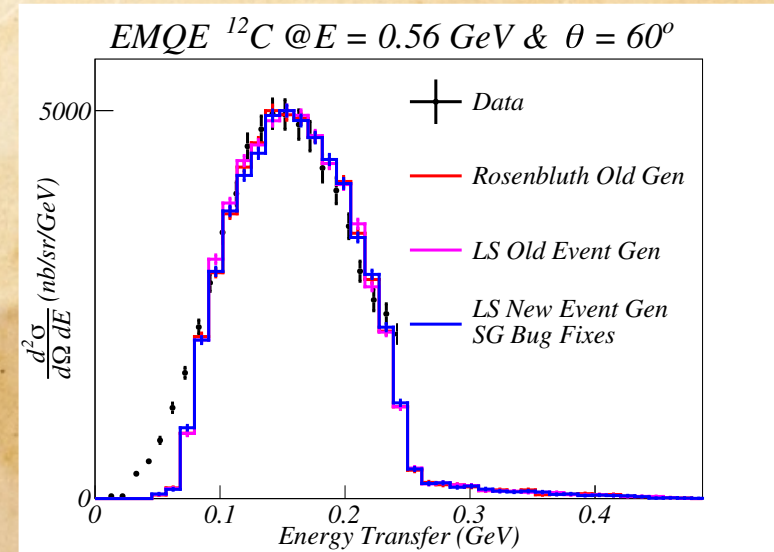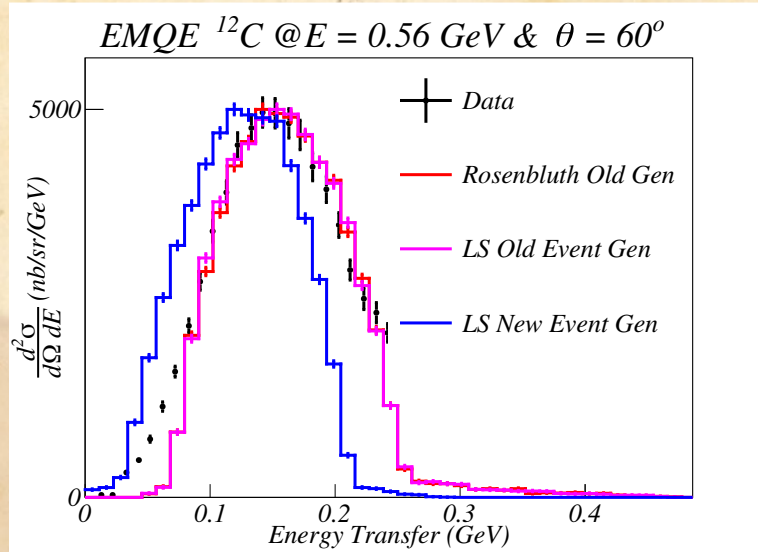
- Tests have been carried on also for electron scattering
  - It was where the problem was first observed

Nuance Codes

- Minor issue for LArSoft User
  - Nuance codes about the event type were problematic and not mutually exclusive
  - This is known https://cdcvs.fnal.gov/redmine/issues/18025

- RES interaction with 2 pions in the final state returns a not valid Nuance code
- GENIE is not going to support this
- The proper evaluation of those codes needs to be written within LarSoft

  - Reference to the relevant piece of code
    - https://nusoft.fnal.gov/larsoft/doxsvn/html/MCNeutrino_8h_source.html#l00081
    - https://nusoft.fnal.gov/larsoft/doxsvn/html/GENIE2ART_8cxx_source.html - Line 281

Feedback session

- As mentioned in one of the first forums, we would like to have a feedback session for the forum

  - To see if we need changes in the structure

  - To improve what we have

  - Etc…

- The feedback session will be next time, Wednesday 19th June

  - In preparation for that I will be happy to receive any feedback you have about the forum

  - It would be helpful to guide the discussion