Event Generator Update

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Sartre Update

- Thomas Ullrich released Sartre 1.30
  - Improved model & fit: (HMPZ=H.Mantysaari,P.Zurita)
  - Should not have a memory leak.
- Untested. Not ready for full scale eA table generation.
- Next step is ep table generation to reproduce HERA data to validate code & fit. Then eA.
Sartre Update

- They don't seem to have the manpower to generate the ep tables to test it.
  - Easier & quicker than eA, but still a lot of jobs.
- Do we want to volunteer?
  - Tobias + Vasiliy set it up at JLAB?
  - Guohui runs it?
- Or wait for them to find someone?
BeAGLE (genShd=1) w/ PyQM

1. Generate a Pythia ep or en event skeleton
2. Generate a nucleus and identify struck nucleon (and location)

Mix of valid partons & hadrons
In /PYJETS/
BeAGLE (genShd=1) w/ PyQM

Generate a Pythia ep or en event skeleton

Generate a nucleus and identify struck nucleon (and location)

PyQM active?

Yes

PyQM modifies partons in /PYJETS/ based on the nucleon location

No

Pythia hadronizes any partons in the event.

Mix of valid partons & hadrons in /PYJETS/

Only hadrons have valid status now in /PYJETS/
BeAGLE (genShd=1) w/ PyQM

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Nuclear stuff

/PYJETS/ → /HEPEVT/

Add to DPMJET common for output
Current BeAGLE flaw

Generate a Pythia ep or en event skeleton

Generate a nucleus and identify struck nucleon (and location)

Mix of valid partons & hadrons In /PYJETS/

Nucleon from DPMJET/Glauber has some (Fermi-) momentum.

Pythia eN event assumes nucleon at rest in (nuclear) target rest frame.

4-momentum not conserved (!)

Same problem exists in EIC Pythia from BNL.
I'm working on a fix (part of eRD17)...

Generate a Pythia ep or en event skeleton

Generate a nucleus and identify struck nucleon (and location)

Modify Pythia event skeleton to have correct kinematics

Mix of valid partons & hadrons
In /PYJETS/

PyQM active?

Et cetera