Software Coordinators Report

F.Gaede, DESY

ILD Meeting, Jan 29, 2020

Outline

- Generator
- Reconstruction
- Monte Carlo Production
- Short report from Hong Kong Meeting

report from *ILD Software Convenors Meeting* today

Generator M. Berggren

- investigated the produced test samples (10k each)
  - HZ->Hmumu, 2f leptonic (tau tau), 4f semi-leptonic (qqlnu)
- found no major issue
- however: re-occurring issue with W and Z peaks in these samples:
  - Breit-Wigner only visible in peak region; visible step in transition to continuum
- workaround: define peak region to be infinity

- also checked $\gamma\gamma$ samples
  - observe differences in cross sections of up to 50% in samples w/ virtual photons
  - tuned transition between aa_ff and aa_lowpt samples (matrix element vs. Barklow-Peskin generator)
  - looks sufficiently reasonable now
- found issue with Q^2 cut definition in Whizard
  - contacted Whizard authors about it

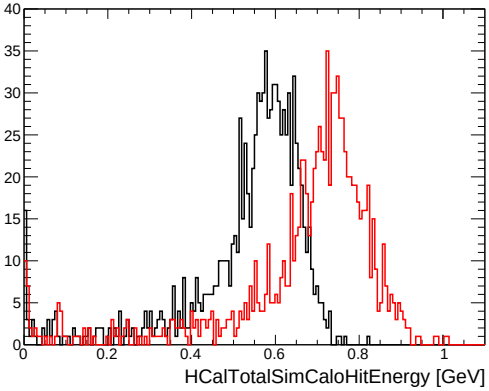
- minor fix to Ecal simulation model
  - added *absorberThickness* to DDRec parameters
  - need for *Garlic* but not in standard production
- due to a change in the Geant4, Birks' law had not not been applied in the IDR production - this is fixed now

will use large **ILD_l5_v02** for 250 GeV simulation

- same as used for IDR *benchmarking* production
- hybrid model
- reconstruct initially as *ILD_l5_o1_v02*, i.e. w/ **AHcal** and **SiW-Ecal**
- plan to not further touch the simulation model

Reconstruction R.Ete

- working on running the re-calibration
- needed to adapt the scripts that automatically run the iterative calibration to new batch farm system
- *run successfully*
- expect results **soon**



sim hits 30 GeV K_L^0 - old vs. new

Monte Carlo Production A.Miyamoto

- no news on production system
  - prepared for 250 GeV production

- **ready to start a test production** as soon as new *ILCSoft* and *ILDConfig* releases become available

Short report from Hong Kong Meeting

- Mini workshop on Software for future e^+e^- colliders:
  - http://iasprogram.ust.hk/hep/2020/workshop_experiment.php
- software experts from all four future e^+e^- colliders present
  - discussed progress on common *Turnkey Software Stack*
  - general agreement to collaborate towards this goal
  - see summary slides: http://ias.ust.hk/program/shared_doc/2020/202001hep/conf/20200121_1038_pm_Frank_GAEDE.pdf
- current main activity: get a first version of **EDM4hep** (successor of LCIO) implemented

for ILD:

- good opportunity to revise the *LCIO* EDM
- let us know if you have any suggestions