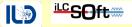


Software Coordinators Report

F.Gaede, DESY

ILD SW&Ana Meeting, Aug 18, 2019

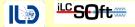




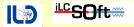
- Generator
- Simulation
- Reconstruction
- Monte Carlo Production
- iLCSoft releases
- report form today's Software Conveners Meeting



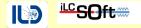
- have created Circe files for all initial states for ee, eg, ge, gg
 - provide input beam spectra for Whizard generation
- created a small test production (generation) of 96 2f and 4f samples
 - $\bullet\,$ also included eg->3f
- thereby fixed bug in Whizard (need new release tag !)
 - related to intermediate ASCII files lacking precision
- $\bullet\,$ issue in single W samples fixed by tuning cuts
- To be done for 250 GeV production:
 - aa_lowpt samples (T.Barklow)
 - finalize naming scheme for 4f samples
 - need to improve and finalize production scripts
- complete generation could be done within 1-2 weeks
- need to agree on what luminosity to generate $(1 2 ab^{-1} ?)$



- e^+e^- -pair background files for 250 GeV are simulated for 250 GeV
- plan to use large ILD_I5_v02 hybrid detector model for main 250 GeV simulation
 - same as used for IDR benchmarking production
 - reconstruct initially as ILD_I5_o1_v02, i.e. w/ AHcal and SiW-Ecal
 - plan to not further touch the simulation model



- prepare *reconstruction steering files* for 250 GeV production:
 - pair background in the BeamCal ongoing Moritz H.
 - seeable pairs files files exist
 - smearing of vertex z-position done
- muon reconstruction in-efficiency at $|\cos(\theta)| \sim 0.6$
 - to be addressed (MH)
- photon calibration and angle bias in Ecal reconstruction
 - to be addressed (DJ)
- \bullet plan to have additional track re-fits w/ e, p and K mass hypotheses
 - currently studied (Yasser R.)



- have created new production scripts that can optionally write out small set of REC files and mostly store DSTs only
- $\bullet\,$ need to have initial test production for 250 GeV
 - use 500 GeV aa_lowpt overlay for this test
 - use 'mc-opt' (disk only) directory
- need to create production scripts in ILDConfig release tag
- confluence page of 250 GeV To-Do-List:
 - https://confluence.desy.de/display/ILD/Checklist+towards+a+new+250+GeV+ILD+MC+production

Future iLCSoft releases



- need to create a new iLCSoft (patch release) for 150 GeV production:
 - improved pattern recognition (Shaojun L.) efficiency
 - fixed muon and photon reconstruction
 - fix for track refitting
- two options:
- create v02-00-03 with minimum number of patches
 - same compiler (gcc 4.9), root 6.08, geant4 10.03 et al
- start a new v02-01-xx series with more modern external software
 - e.g. gcc 8.2/9.2, root 6.20, Geant 4 10.05, ...
 - allow to use modern (current) c++17
 - current standard at LHC experiments

clearly preferable but also would require more extensive tests and validation