Software Coordinators Report

ILD Software and Analysis Meeting
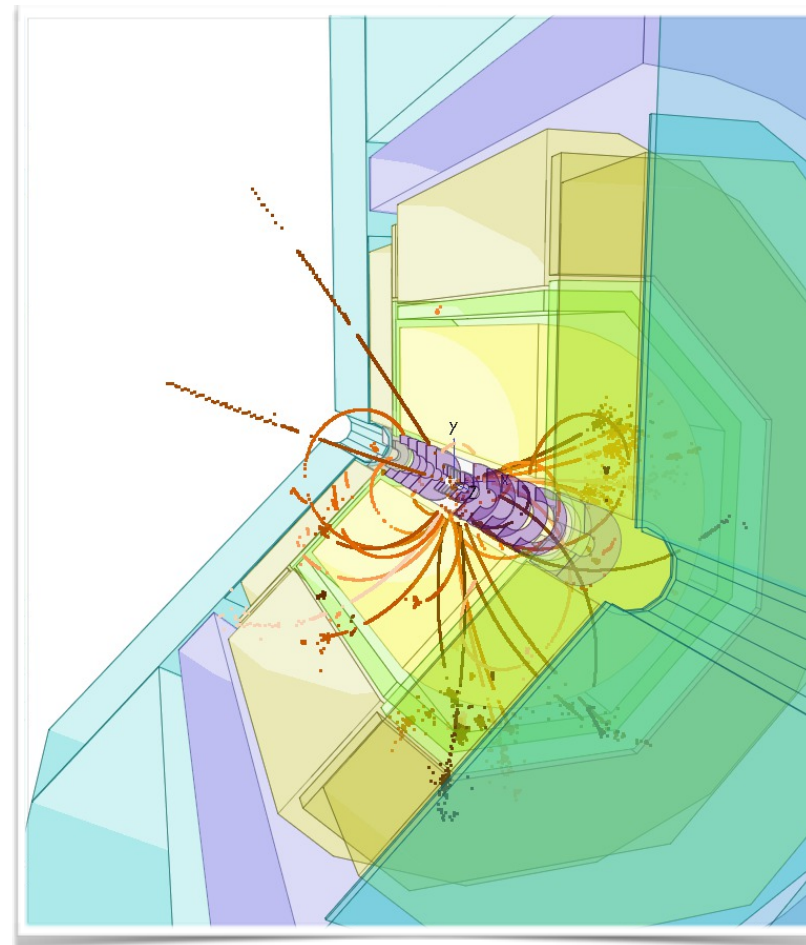
10.02.21

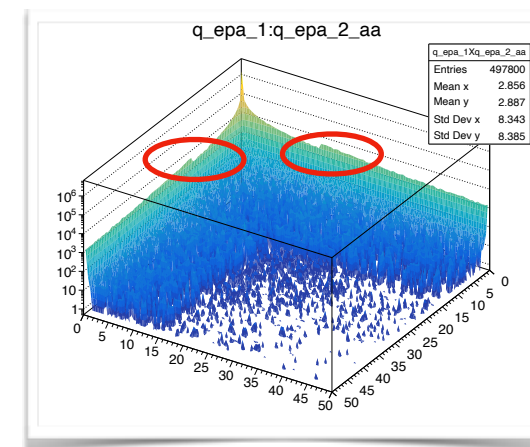Frank Gaede, DESY

Outline

- Generator

- Reconstruction

  - next iLCSoft release

- Monte Carlo Production

- 1 TeV samples

Generator

M.Berggren, J.Tian

- no news yet on problem with cross section of samples with virtual photons from Whizard authors

- finished work on new TrueJet implementation

  - minor issue w/ events that have ttbars added by Pythia

  - confuses the particle history

  - jets will be flagged as color-neutral
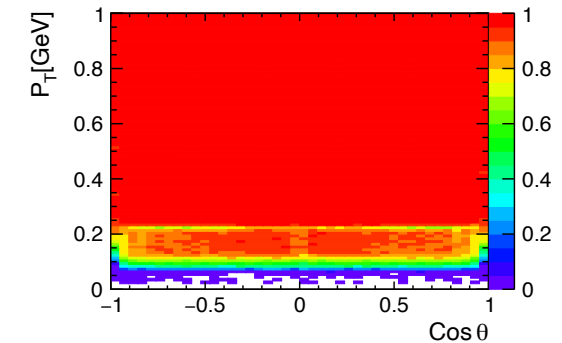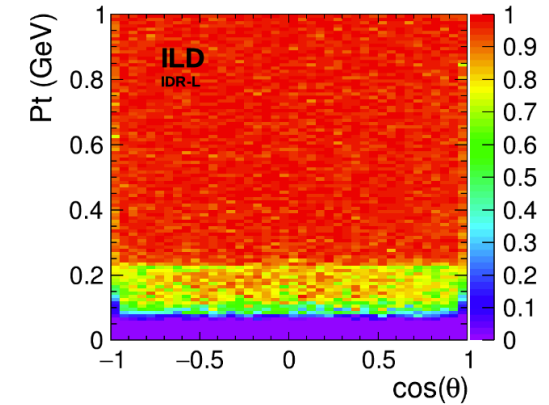
  - will create PR later today

Generator

M.Berggren, J.Tian

- 6-f samples at 250 GeV

- discussing the classification of these samples

- either use scheme analogous to the ttbar sample @ 500 GeV

  - physical classification

- new idea: use experimental signature

  - **# q-jets**

  - **# isloated leptons**

  - **# neutrinos**

- currently looking into integration times of Whizard

- potentially might have two complete processings of these samples, e.g. *6f_exp* and *6f_phys*

Reconstruction

preparation of iLCSoft patch release

- improvements in reconstruction (and core tools) for analysis of large 250 GeV production

- MarlinReco:

  - ErrorFlow (Y.Radkhorrami):

    - proper treatment of covariance matrices for kinematic fitting

  - TrueJet (M.Berggren):

    - adjustment to new MCParticle truth format written by Whizard

- ILDPerformance (S.Sassikumar)

  - added code to correctly create 2D tracking efficiency plots

- LCIO/SIO (R.Ete):

  - fixed bug w/ old/incomplete LCIO files

  - improved cmake build scripts

Monte Carlo Production

H.Ono, A.Miyamoto

- started to recover from file loss reported in last meeting

- continue to processing statistics samples

- observed some crashes

  - fixed w/ tuning (reducing) the number of concurrently running jobs

- currently adding more storage to the DESY-SE should help in running more jobs in parallel

check status of production at this web page:

https://ild.ngt.ndu.ac.jp/mc-prod/prodmon/prodsum-mc2020.html

ILD samples at 1 TeV

- 4f and Higss samples at 1 TeV requested from Belgrade group

  - see talk from T. Agatonovic Jovin in last ILD SW&Ana meeting

- generation of sample w/ current Whizard rather straight forward

- however, we also need background files:

  - aa_lowpt and seeable pairs

  - seeable pairs require a non-negligible effort

- simulation and reconstruction should then work '*out-of-the-box*'

- will follow up on this in parallel to the high priority continuation of 250 GeV Monte Carlo production and HLR developments

- Vinca group is starting the ILD analysis with older 1 TeV samples from DBD

Higgs CPV Mixing at 1 TeV ILC

IVANKA BOZOVIC-JELISAVCIC, TATJANA AGATONOVIC-JOVIN*, GORDANA MILUTINOVIC-DUMBELOVIC, GORAN KACAREVIC, NATASA VUKASINOVIC, IVAN SMILJANIC – VINCA INSTITUTE OF NUCLEAR SCIENCES, UNIVERSITY OF BELGRADE

MIRKO RADULOVIĆ, JASNA STEVANOVIĆ – UNIVERSITY OF KRAGUJEVAC