

Software Coordinators Report

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ILD SW&Ana Meeting, Sep 11, 2019

- Generator
 - Simulation
 - Reconstruction
 - Monte Carlo Production
-
- report from today's *Software Conveners Meeting*

- created almost complete test production for DESY, i.e. 2f-5f
 - 6f-8f and H to be done by JT at KEK
- see: www.desy.de/berggren/250
 - directory structure w/ events, grids, steering and log files
 - reduced number of different channels wrt to DBD production
- observe extremely long CPU time for generation of 5f
 - not yet understood . . .
- observed very high cross section in 4f samples w/ muons
 - tracked down to non-zero muon mass and kinematic cuts

- proposal for generator statistics to be produced
- NB: will only fully simulate a fraction of this initially

proposal for statistics of 250 GeV generators

process\pol.	eL.pR	eR.pL	eL.pL	eR.pR
2f_l, 2f_h	5 ab ⁻¹	5 ab ⁻¹	1 ab ⁻¹	1 ab ⁻¹
all 4f				
all 6f	10K	10K	10K	10K
2f_bhabhag	1 ab ⁻¹	1 ab ⁻¹	1 ab ⁻¹	1 ab ⁻¹
h->inclusive	1 ab ⁻¹	1 ab ⁻¹	1 ab ⁻¹	1 ab ⁻¹
h->each mode (5x9 channels)	100K	100K	10K	10K

most of the irreducible background will then have x10 more than expectation at ILC250

aa_2f, aa_4f: 1 ab⁻¹ each initial state

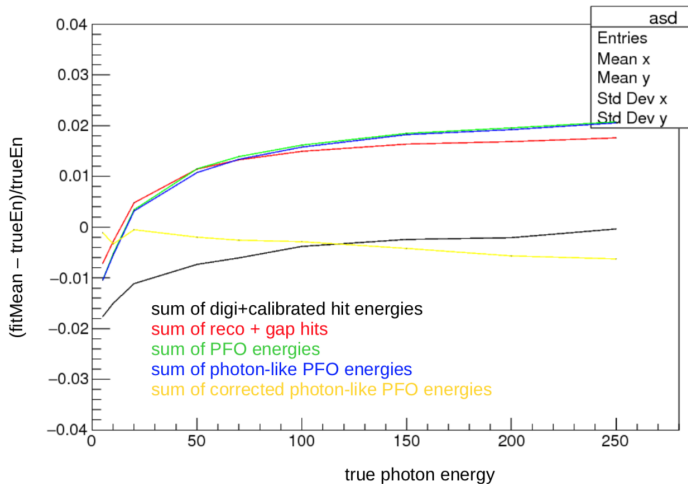
1f, 3f, others: 100K each initial state

- nothing new - reminder from last week:
- 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
 - **addressed - by DJ (next slides)**
- plan to have additional track re-fits w/ e, p and K mass hypotheses
 - *currently studied (Yasser R.)*

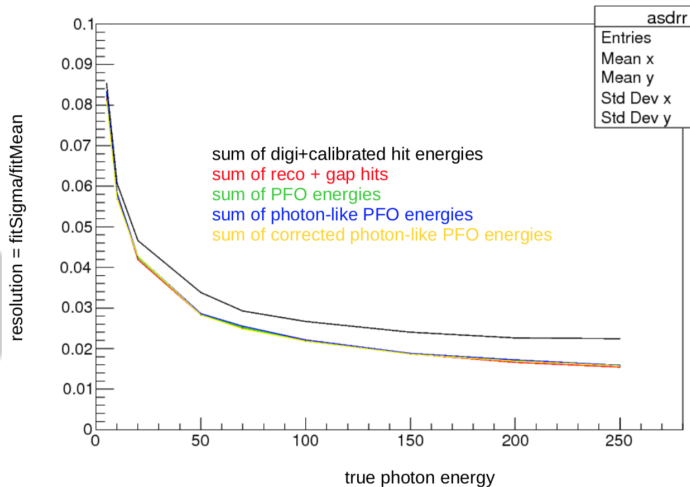
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 - run after PandoraPFA
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- improve the calibration to better than 1%
- maintaining the resolution

- need to include in *standard reconstruction*



- have created new production scripts that can optionally write out small set of REC files and mostly store DSTs only
- iterating on meta data and file name configuration
- need to prepare ILDConfig tag for 250 GeV parameter
 - MB: needs to clarify w/ T. Barklow about definition of aa_lowpt cross section
 - -> create release tag asap
- confluence page of 250 GeV To-Do-List:
 - <https://confluence.desy.de/display/ILD/Check-list+towards+a+new+250+GeV+ILD+MC+production>