

Software Coordinators Report

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ILD SW&Ana Meeting, Apr 18, 2018

- Finalizing the iLCSoft production Release v02-00
- Changes since v01-19-06
 - MarlinReco
 - ILDConfig
 - ILDPerformance
 - lcgeo
- Monte Carlo Production
- Summary and Outlook

- SDHCAL digitizer (Guillaume) :
 - switch order of the LCRRelation between SDHCAL SimCalorimeterHits and CalorimeterHits
- improved TrueJet processor (M.Berggren):
 - fixed crash due to index out-of-range
 - remove all compiler warnings except local shadow (checked to be OK)
 - now also works for higgs-samples *except for $h \rightarrow gluon\ gluon$*
 - will need a completely different treatment for back-track through the parton shower, as there is no quark-line to follow. . .
- added new package TimeOfFlight (FG)
 - use TOFEstimators processor to compute TOF parameters
 - will be added as PID object to the ReconstructedParticles

- write TOF estimators for *0ps*, *10 ps* and *50 ps*
 - see next slide
- correct treatment of beam constraint vertex fit for 500 GeV
 - use numbers from *GuineaPig*:
 - $\sigma_x = 303 \text{ nm}$
 - $\sigma_y = 2.4 \text{ nm}$
 - $\sigma_z = 196 \text{ }\mu\text{m}$
 - do not apply beam constraint for all other samples:
 - calibration, single particles, other energies, . . .

TOFFirstHit - first hit (closest to calo entry point)
TOFClosestHits - closest hit in every layer (<lMax)
TOFClosestHitsError - error of above
TOFFlightLength - trajectory length to reference point
TOFLastTrkHit - (unsmearred) time of last tracker hit (in SET)
TOFLastTrkHitFlightLength - trajectory length to last trk hit

- parameters can be stored for several assumptions on single hit time resolution
 - stored for *0ps*, *10 ps* and *50 ps*
 - as PID parameters

- WWZZSeparation (J. Beyer)
 - script can now be executed with the option to run on ILCDirac (assuming the user has a certificate).
 - now high statistics DSTs can be produced and analyzed. (Has been tested with a total of 15k events.)
 - due to a new naming convention in DSTs the analysis no longer works for ilcsoft older than 01-19-06.
- UdsAnalysis (R.Ete):
 - fixed job script to run on the NAF
- PIDTree (FG)
 - don't print warnings for particles that are not reconstructed

- still missing the 4T field map for dedicated models with realistic fields
 - w/ and w/o anti-DID
- technical problems to create field map in correct format from simulation
 - work is ongoing

not needed for production

- only for dedicated studies
- will not wait for this if everything else is in place

- will create an iLCSoft version v02-00-pre **today**
- run *tracking performance* and *JER performance* as final test

Outlook

- if no problem found will create final release tomorrow
- start the production:
 - first process **complete hadronic ttbar sample**
 - then (if no issues found) all the rest