

ILD detector optimization studies

slides prepared by T. Tanabe
ILD meeting @ ALCPG11

in this talk

- announcement: meeting schedule change
- what is the **current status**?
- what do we aim to **accomplish until the next ILD meeting in late spring/early summer**?
- (will be color-coded)

announcement: new meeting schedule

- there was a change in the ild-opt meeting schedule
 - previously: biweekly ild-opt meetings
 - now: **monthly** “ILD analysis meetings”
- the first meeting (March 9th) was held very successfully with **7 talks**
- the second meeting will take place on **April 6th**
- schedule will be announced well in advance
 - please try to attend the new meetings as much as possible!

study of detector options

- ILD_o1 model is now available
- most of the reconstruction software is now in place
- it is appropriate to **begin a survey of physics performance of sub-detector options from the physics point of view**, e.g.,
 - VXD + TPC
 - pair background, impact parameter resolution => **flavor tagging**
 - ECAL (silicon, scintillator, hybrid) + HCAL (analog, digital) + forward detectors
 - jet energy resolution, particle separation => **particle flow**
- **work closely with the software WG for a physics software release**
- this will be a lot of hard work (!) but is nonetheless crucial for the subsequent physics analysis studies

DBD benchmark studies

- 3 benchmark processes + repeat 1 LOI analysis
 - Higgs BRs @ 1 TeV: already covered (but not started yet)
 - TTH @ 1 TeV: already covered (but not started yet)
 - WW @ 1 TeV: need to identify personnel
 - +1 LOI analysis: need to identify topic & personnel
- people who expressed interest in doing the DBD benchmark studies are still finishing the analysis at lower energies
 - these should be finalized as soon as possible

other physics studies

- wide range of physics topics are being studied in ILD full simulation (ILD_00, v01-06)
 - from the first ILD analysis meeting:
 - Top pair (P. Doublet)
 - Higgs BRs (H. Ono, N. Herder)
 - HHH coupling (J. Tian)
 - TTH coupling (H. Tabassam)
 - many more at ALCPG11
- ZHH task force is being proposed!
 - looking for interested members to join this effort

use of analysis samples

- analysis samples for the benchmarks are being made available (GOOD)
 - consistency of the new samples should be checked by those who will work on the benchmark processes
- existing SM samples @ 500 GeV use the old model and old reco (BAD)
 - it would be nice if the 500 GeV samples were regenerated using the new detector model and new software
 - +1 LOI analysis for DBD will certainly benefit from this
 - many other studies also will
- should we regenerate the 250/350/500 GeV samples?
please discuss...