



Physics Coordination Report

K.Fujii & J. List,
ILD Software & Analysis Meeting,
Aug 8 2018

ILC in Japan



Friday Aug 10:

- the Science Council of Japan will have the first meeting to discuss the report of the MEXT advisory panel

Sunday Aug 5 / Tuesday Aug 7:

- Barry Barish and Sheldon Glashow gave a symposium in Tokyo and a press conference and expressed their support for the ILC
 - <https://www.interactions.org/press-release/international-linear-collider-project-hosts-press-conference>
 - https://www3.nhk.or.jp/nhkworld/en/news/20180805_18/



.... back to ILD matters



ILD Benchmark Analyses

- all 12 analyses have started
- progress is slow since most analysers also have other tasks
- today updates from:
 - $ee \rightarrow \gamma Z$
 - search for extra Higgs bosons



MC production

- several additional samples where recently processed:
 - $m_h > 125$ GeV samples @ 250 GeV (DBD)
 - low delta-M Higgsino signal samples

=> expect updates soon!
- more to samples to come
 - extension of “Cambridge uds” samples for cc/bb
 - $m_h < 125$ GeV and $m_h > 125$ GeV samples @ 500 GeV (DD4HEP) (request today)
 - signal samples for anomalous QGCs: still need to sort out Whizard 2 technicalities



Reconstruction issues (I)

- LCFIPlus:
 - DBD performance can be obtained in some cases
 - but suspicious dependency on the size of the training sample
 - vertex position uncertainties not understood
 - and degradation with beam background
- => this is critical for all benchmarks which need charm and bottom tagging!



Reconstruction issues (II)

- Isolated lepton (muon) finder:
 - can be used without yoke information => average efficiency a few percent lower than DBD at same purity
=> can and should be used for benchmarking
 - but strong local inefficiencies for certain theta values
 - eg near $\cos\theta = 0.8$:
 - => tracked to missing TPC hits due to a wrong simulation parameter
 - => fixed in central software, but of course this does not help our already simulated benchmark samples
- => will have to live with the fact that the benchmark samples will be for comparing large and small ILD (including the same bugs), but **not for best physics performance**



Next meetings

- Aug 22 (chaired by Frank)
 - Sep 5 (Frank)
 - Sep 19 (Keisuke)
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- and of course the benchmarking pre-meeting to the LCWS, October 19-21 (detailed agenda to come soon)