

Report from SB2009 Working Group

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DESY

ILD Software and Integration Workshop

SB2009 Status

■ Outcome of LCWS2010

- ◆ Decision of the new ILC parameters were postponed about ~ 1 year.
- ◆ 10Hz operation was proposed to cure low luminosity at low energy.
 - serious study on GDE side has began
- ◆ Needs of close communication between GDE and Physics/Detector community were emphasized.
 - Baseline Assessment Workshops (BAW) are planed
 - Reform SB2009 WG

SB2009: Organization

■ SB2009 Working Group: Reformed after LCWS2010

- ◆ Jim Brau, Mark Thomson, Mikael Berggren, Karsten Buesser, Keisuke Fujii, Akiya Miyamoto, Timothy Barklow, Takashi Maruyama, Norman Graf, Thomas Markiewicz, Steward Boogert, David J.Miler, Georg Weiglein, Yasuhiro Okada, JoAnne Hewett

■ Chair ■ ILD ■ SiD ■ CTG ■ Theory

- ◆ A WebEx meeting in June

■ BAW coordinator group (?)

- ◆ 5 from GDE and 5 from Physics community
 - for close communication
 - coordinate BAW and related activities

- ◆ Physics members: Jim Brau, Mark Thomson, Karsten Buesser, Keisuke Fujii, Thomas Markiewicz

Workshops & Meetings

■ Baseline Assessment Workshops (GDE plan)

◆ 7-10, September, 2010 at KEK

● Topics

- Single Tunnel High Level RF Systems
- Accelerating Gradient

Physics reach ?

◆ 18-21, January, 2011 at SLAC

● Topics

- Reduced RF powers
- e+ source location

Higgs performance ?

◆ Physics community are invited to both BAWs.

■ AD&I meetings by WebEx

◆ GDE(?) is organizing the WebEx AD&I meeting to discuss sb2009 issues with wide participation. Discussion before BAW are important

◆ It was said that “Physics community is invited”, but ... Still communication problem

◆ 1st meeting: June xx

◆ 2nd meeting: July 23.

◆ will be more

SB2009 WG activity

- One WebEx meeting since LCWS2010 in June

- Meeting topics was to overview status of

- ◆ Studies updating the older studies

- pairs distributions
- forward backgrounds
- stau measurements
- Higgs cross section and mass
- SUSY run strategy study

- ◆ new studies

- Higgs BRs stau
- sensitivity vs. model parameters

- ◆ Tools to generate beam spectrum and various backgrounds

*Update results by
ECFA WS in Autumn
and
final results by BAW in Jan.*

✓ Tools are there but beam parameters are not updated.

✓ Needs systematic study of beam-related background (muon, etc)

350 GeV study

■ ILD meeting at LCWS2010

- ◆ “Dedicated 350 GeV studies for Higgs Branching ratio measurement and compare performances with LOI 250 GeV study”

■ Status

◆ Stdhep(Generator samples)

- Stdhep samples have been produced with Whizard 1.40 and Tim’s interfaces to Tauola, Pythia, etc.
- Most of 0, 2f, 4f, 6f were produced at KEK. Stdhep files and log files are on GRID and Web, but some cleanup work may be necessary.
<http://wiki.kek.jp/display/~miyamoto/ILC+Common+Generator+Samples>
- ttbar threshold enhancement in Whizard ?
Other generator(Physsim?) may be necessary.
- BeamParameter: SB2009 with Traveling Focus

350 GeV: Mokka/Marlin/Analysis

■ Mokka/Marlin

- ◆ Using ilcsoft v01-06 and ILD_00
- ◆ with 7mrad crossing angle and with DetailedTRKMode for all trackers
- ◆ Mokka files and DST files are kept. No Rec files. (to save space)

■ Status

- ◆ ffH and 4f ($f \neq e/\mu/\tau$): ffH 500 fb⁻¹ and 4f 50fb⁻¹: almost done
- ◆ others (incl. 0f, 2f, 6f) in progress
- ◆ Samples are on GRID. No database yet.

■ Analysis:

- ◆ Hiroaki Ono san has started to study branching ratio.

Need to do more systematic approach after this workshop

10Hz operation issue

- Implication to ILD
 - ◆ Beam rate to detector: 10Hz or 5Hz ?
 - ◆ Implication of 10Hz to ILD
 - Readout time enough ?
 - More positive ion disks in TPC ?
 - Cooling ?

Conclusion

- Study of ILC re-baseline is now in progress in GDE.
- The study will affect the ILC physics performance. The participation of detector community is essential. GDE concerns “Cost Containment”, while we concern “Physics Performance”.
- Series of Workshops and Meetings will be held and active participation of physics community is strongly encouraged.
- The SB2009 WG has been re-formed, but I think more coordinated work within in ILD is necessary.