

# Report from Worldwide Study on Physics and Detectors

Worldwide Study Organizing Committee

ICFA meeting, Beijing August 2004

# Roles of WWS

- Recognize and coordinate studies on whole detector concepts, and work toward interregional detector TDRs.
- Interface with GDI, especially on MDI issues.
- Keep a register of R&D relevant to LC experimental programs, identify those that are vital or missing, and ensure peer review of R&D proposals.
- Organize interregional meetings and workshops.
- Report to ILCSC and ICFA on the matters above.

# Worldwide LC Workshops

every ~1.5 Yrs

every ~1yr

- Paris LCWS (April 2004)
  - Attendance 340 (limited by the facility)
  - Press release of consensus report
  - Task force for the ‘physics questions’ by ITRP (30b,d)
- March/April 2005 (hosted by Americas)
  - First worldwide LCWS after technology ITRP recommendation on technology

# Regional LC Workshops

Organized by regional studies with global participation

- Victoria, July 2004 (ALCPG)
- Durham, September 2004 (ECFA)
- Taipei, November 2004 (ACFA)
- ~summer 2005 (ALCPG)
  - A long summer workshop?
- ~autumn 2005 (ECFA)

# Video meetings (Mini workshops)

Tele-conferences focused on a single subject  
attached to regional LC workshops

- Vertexing (Arlington)
- Tracking (Amsterdam)
- Calorimetry (Montpellier)
- Tracking (Mumbai)
- Vertexing (SLAC)
- Test beams (Durham)
- Machine detector interface (Taipei)

# Test Beam Issues

- LC detector R&D requires test beams for timely progress
- A global task force was set up to study test beam needs and facility availabilities
- A report has been prepared

[http://www.linearcollider.ca:8080/lc/vic04/abstract/s/detector/testbeam/wwlctb\\_working\\_group.doc](http://www.linearcollider.ca:8080/lc/vic04/abstract/s/detector/testbeam/wwlctb_working_group.doc)

- We appreciate labs' positive response. Will need continued support

# Detector Concept Studies

- Large-volume Gaseous Detector Studies (LVGDS) - will contain distinct studies following from
  - ‘Tesla-based’ Large (or Medium)
  - ‘GLC-based’ Huge (or Large)
  - ‘American’ Large
  - ...more, or amalgamated?
- Silicon-tracker-based Detector Studies (SiD)

Concept studies are globalizing  
Individuals will participate in multiple studies

(Presented at Victoria WS)

# Announcement of Large Volume Gaseous Detector Concept Study.

**FROM** M.Battaglia & M.Ronan (LBL), G.Wilson (Kansas) [+J. Brau (Oregon)]  
S.Komamiya (Tokyo), H.Yamamoto (Tohoku)  
R-D.Heuer (Hamburg), R.Settles (Munich), D.J.Miller (London)

An inter-regional study will be launched at the ECFA  
and ACFA workshops in Durham (UK, 1-4 September) and  
Taipei (Taiwan, 9-11 November).

*Please come and join in.*

Likely to include a number of distinct studies of particular  
concepts (calorimetry techniques, B-fields, magnet radii etc.),  
sharing tools and R&D results, with overlapping memberships.  
Number of studies and detailed organisation to be worked out  
in consultation with regional communities.

DJM at ALCPG 31/7/04

# Launch of Global Detector Concept Studies

- Silicon Detector (SiD)
  - Launched at Victoria, Durham, Taipei
- Medium (large) gaseous tracking detector
  - Presented and discussed at Victoria, launched at Durham and Taipei
- Large (huge) gaseous tracking detector
  - Advertised at Victoria and Durham, launched at Taipei

Concept studies (these or others) will contribute to cost estimate document ( Accelerator CDR)

# Timeline proposed by WWS OC

(2004) ITRP tech.  
recommendation

Set up 3 panels (costing, detector  
R&D, and MDI)

(2005) Accelerator CDR

Single preliminary-costing paper for  
>1 whole detector concepts

(2007) Accelerator TDR

WWS receives CDR's from each  
detector concept team (expect  
some individuals to sign multiple  
CDRs)

(2008) LC site selection

Collaborations form and submit  
LOIs for proposal to the global lab  
(or GDO?)

Site selection + 1yr

Global lab selects experiments.