

# MDI Issues: a series of workshops

T. Tauchi, KEK

Huge Detector Study Meeting, TV, KEK

FFIR Working Group of ACFA-LC

29 October, 2004

<http://acfahep.kek.jp/subg/ir/talks.html>

# Schedule of workshops

- 1 November 2004, EUROTeV Kick-off meeting at DESY
- 13-15 November 2004, ILC workshop at KEK; WG4
- 6-8 January 2005, MDI mini-workshop at SLAC
- 18-22 March 2005, LCWS05 at SLAC
- 23-27 May? 2005, BDIR workshop at Oxford/RHUL
- 14-27 August 2005, ILC workshop at SNOWMASS

# WG4: ILC workshop at KEK

**Nov. 13 (Saturday): 15:30(?) – 17:30 (sharp)**

Overview of critical design choices TBD 30' + 30'

Brief statements from labs/regions start 16:30

UK labs TBD 5'

Saclay, Orsay TBD 5'

DESY TBD 5'

CERN TBD 5'

KEK TBD 5'

Asia TBD 5'

America's labs (SLAC, Fermi, BNL, LLNL) TBD 5'

Other 5'

**15:40–16:00 Coffee**

Discuss urgent input required from other WGs (see above) 16:00–17:00

Discussion 17:00–17:30

## **Nov. 14 (Sunday): 09:00 – 12:00**

Discuss work tasks needed make CDR choices according to topics start 9:00

IR Layout (crossing angle,  $L^*$ , Vertex R) TBD 10'+10'

Final Doublet TBD 10'+10'

Collimation & Backgrounds TBD 10'+10'

Optics TBD 10'+10'

COFFEE BREAK 10:30–11:00

IP collision optimization TBD 10'+10'

Beam Instrumentation TBD 10'+10'

Simulations (HEP) TBD 10'+10'

## **Nov. 14 (Sunday): 13:00 – 17:30 (flexible)**

Discuss impact of options TBD 20'+20'

Gamma-gamma option TBD 10'+10'

Critical beam tests TBD 10'+10'

**Start 14:00**

Discuss strawman BDIR configuration model TBD 10'+30'

**Start 14:40**

Discuss most urgent goals to be achieved in 10'+30'

several months (before Snowmass 2005 ?)

to agree on a CDR BDIR configuration

**COFFEE BREAK 15:30–16:00**

Sign-up, optimization of work distribution,

Discussion of conclusions and agreements 16:00–17:30

Summary talk preparation 18:30–

# MDI mini-workshop at SLAC

## SCOPE and GOALS:

- Evaluate "experiment impact" of the ILC design. The ILC Design impacts the ILC Detector and Physics, beyond just the delivered luminosity. The Machine-Detector Interface (MDI) group needs to evaluate how the ILC design impacts the Experiment (Detector design and physics capabilities) and how the Experimental requirements impact the ILC design.
- Give input to both the ILC Beam Delivery Group and the World-wide Study for ILC Physics and Detectors regarding critical choices, beam tests, the CDR and the TDR.
- Reach preliminary consensus on viability of some crossing angle choices: head-on, 300- $\mu$ rad vertical, 2-mrad horizontal, ...
- Form sub-groups working on individual topics, and identify available and needed resources.

## Proposed BDIR Critical Choices (from Markiewicz list)

1. Crossing angles
2. Final doublet technology
3.  $L^*$
4. VXD radius
5. Collimation:
  - material and shape
  - passive or consummable
  - before/after IP switch
  - order of betatron, energy collimation
6. MPS: # bunches allowed to hit collimator
7. IP Collision stabilization: yes/no for following
  - feedback stabilization only
  - active final doublet stabilization
  - support tube
  - additional fast feedback in Linac, start of BDS
8. Detector questions (ex. EMI, gamma-gamma)
9. Beam instrumentation (ex. energy spectrometer)
10. Risk mitigation (beam tests)