

The Detector Concept Report and *SiD*



SiD SLAC Workshop

October 26, 2006

John Jaros

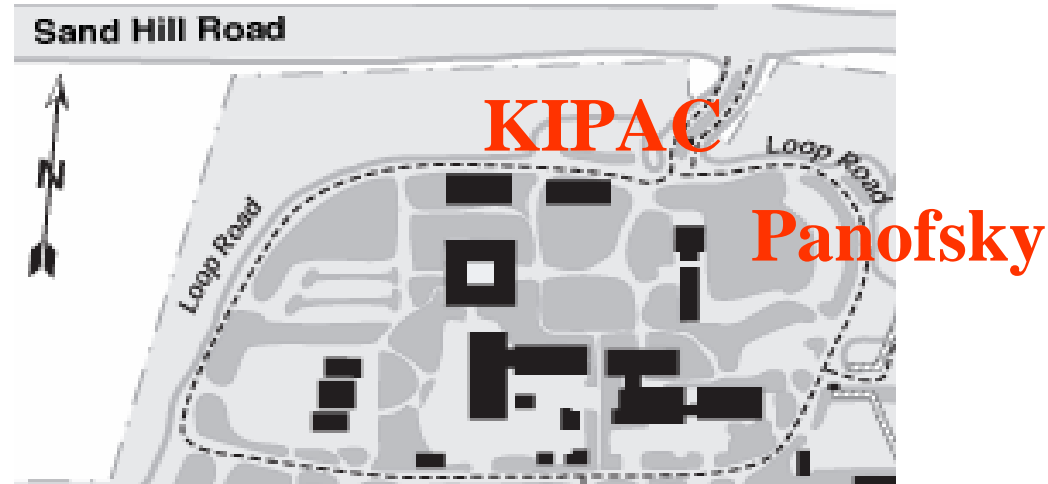


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 - Dial 911 from your cellular phone
 - Provide SLAC address (2575 Sand Hill Road, Menlo Park, CA; cross street Saga Lane) and your building/room number.

First Some Logistics

- Meet tomorrow and Sat in KIPAC Auditorium



- SiD Collaboration Dinner Friday 7PM
Hunan Garden Restaurant
Natasha Haulman is collecting checks
after this session. Pay! And come!
(we need a head count)

SiD Workshop Themes

- **MDI Issues before SiD**
Ewan today, Phil tomorrow
- **Progress on R&D and Performance Studies**
Working Group leaders tomorrow and Saturday
- **Planning for a Conceptual Design Report**
Harry, next. Andy, Marty, Norman, Aurelio tomorrow
- **Test Beams for SiD. At SLAC?**
Jae Yu and Ray Arnold, Saturday
- **SiD's Contributions to the DCR**
Any minute now

Today's Agenda

Thursday, 26 October 2006	
16:00	[56] Welcome by Jonathan DORFAN (16:30 - 16:35)
	[52] The Detector Concept Report and SiD by John JAROS (SLAC) (16:35 - 16:50)
17:00	[53] Planning for the SiD CDR by Harry WEERTS (Argonne National Lab.) (16:50 - 17:05)
	[54] News from the GDE by Ewan PATERSON (SLAC) (17:05 - 17:35)
18:00	[55] ILC Physics that Challenges SiD by JoAnne HEWETT (17:35 - 18:05)

What's the DCR?

- Companion document to GDE's Reference Design Report (RDR) which outlines baseline and costs for the ILC machine.
- DCR has two sections: Physics (50p)+Detector(150p)
- RDR and DCR are due end of 2006

- Detector DCR will
 - make the case that detectors can do the ILC physics
 - show that detector designs are within reach
 - ballpark detector cost
 - argue for 2 detectors

More about the DCR

- Detector Outline Documents provide much of the material for the Detector DCR

- WWS-OC oversees writing the DCR

Editorial Board

Brau, Richard, Yamamoto, eds

Physics Case for ILC

J. Lykken, M. Oreglia, K. Moenig, A. Djouadi, S. Yamashita, Y. Okada

ILC Detectors and Costs

A. Miyamoto, T. Behnke, J. Jaros, C. Damerell

- Spirit of the DCR
cooperative among concepts, not a vs b vs c vs d
make a compelling case for ILC physics and detectors

The Outline of the DCR

1. General Introduction
2. Challenges for Detector Design and Technology
3. Introduction to the Detector Concepts
4. MDI Issues
5. Subsystem Designs and Technologies
6. Sub-Detector Performance
7. Integrated Physics Performance
8. Why We need 2 Detectors
9. Detector Costs
10. Future Options
11. Next Step
12. Conclusion

DCR Status

- Post-DOD results from SiD are being submitted now
 - New material from Hcal, Ecal, PFA, Vertex, Tracking
- Editors are gathering material from others, assembling it, writing, and editing first draft
- Goal: Rough draft for Valencia (probably pretty rough)
- Expect profitable discussions at Valencia on costs, balance between concepts, etc.

Vetting the DCR

- Post Valencia: Editors and authors will refine the text. HEP Community will be invited to read and comment. Still time for last minute updates.

• ~Final Draft by ~December 06

- The ILC Physics/Detector Community will be invited to sign the completed document. We'll all be authors.

http://www.linearcollider.org/wiki/doku.php?id=dcrdet:dcrdet_home



dcrdet:dcrdet_home

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DCR - Detector Chapter

DCR Detector Section page

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- DCR Detector Section page
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Proposed outline

- Introduction
- Challenges for Detector Design and Technology
- Introduction to the Detector Concepts
- MDI Issues
- Subsystem Designs and Technologies
- Subsystem Performance
- Integrated Physics Performance
- Why we need 2 IRs and 2 Detectors
- Detector Costs
- Future Options
- Next Step
- Conclusion

Editors

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- C.J.S.Damerell@rl.ac.uk
- john@slac.stanford.edu
- akiya.miyamoto@kek.jp

New Results from SiD

details to follow in the Workshop

- Calorimetry
 - HCAL: Comparison of Fe/W Absorbers
Comparison of RPC, Scint, GEM Response
Latest Detector R&D
 - ECAL: Studies of Resolution vs Det Parameters
 - PFA: New results, better performance
- Vertexing
 - Performance of SiD06 Vertex Detector
 - Latest Detector R&D
- Tracking
 - Extensive rewrite/clarification of DOD writeup