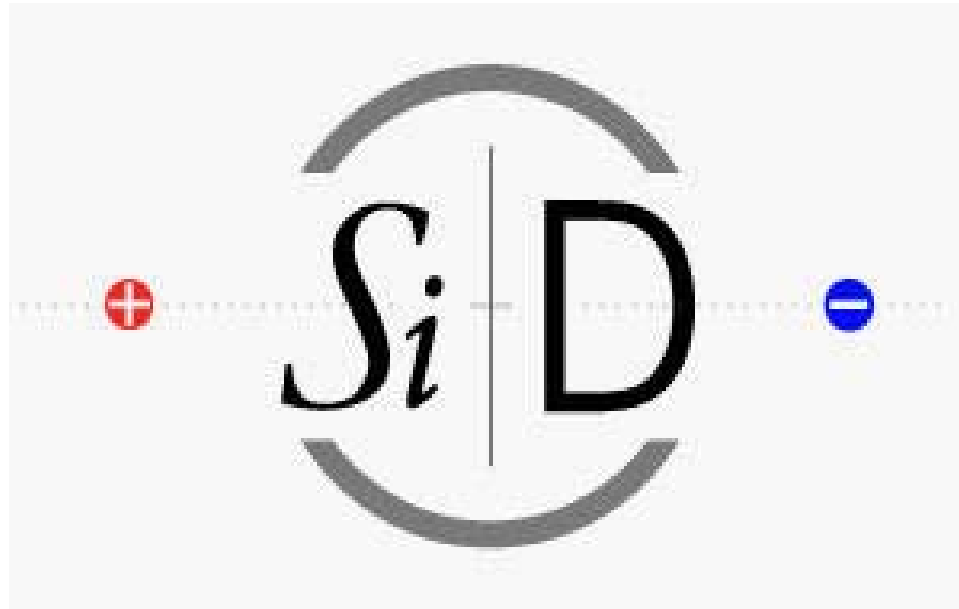


# Design Study Goals, Organization, and Plans



SiD Design Study Meeting  
March 17, 2005  
John Jaros

# Design Study Goals

- Design a detector optimized for studies of .5-1.0 TeV  $e^+e^-$  collisions, rationally constrained by costs, which utilizes Si/W electromagnetic calorimetry and all silicon tracking.
- Identify the R&D needed to realize this detector.
- Document the design.

# Our Immediate Goal

- Optimize and flesh-out the SiD Starting Point Design in time for discussions at Snowmass.

Answer SiD Critical Questions, Optimize Subsystem Design  
Develop conceptual mechanical designs  
Review subsystem technologies  
Benchmark SiD physics performance  
Keep track of the costs

- Ubi ignis est?

WWS wants Detector Outlines by Spring 06. Time's awastin'.  
WWS R&D Panel will need R&D guidance soon.  
GDE will likely want costs, plans soon. Better be ready.  
It's time to put SiD down on paper.

# Snowmass 2005

August 14-27, 2005

<http://alcp2005.colorado.edu/>

- Plan to come and work on SiD!
- Unique chance for the Design Study to make real headway, **integrate all the subsystems into one design, optimize the overall design**, debate the relevant technologies, understand the physics/detector interplay.
- Benchmarking Matrix. Study physics performance for several key physics measurements for a variety of detector configurations (e.g. change  $r$ , change  $B$ , change  $z$ ,...). Watch the errors vs costs.

# SiD Organization

## Design Study Coordinators

J. Jaros and H. Weerts

Asian and European Contact Persons H. Aihara and Y. Karyotakis

## SiD Executive Committee

Design Study Coordinators

SiD R&D Coordinator A. White

Godfathers M. Breidenbach and J. Brau

## SiD Advisory Group

SiD Executive Committee

Working Group Leaders

## SiD Working Groups

Benchmarking (T. Barklow), Calorimetry (R. Frey, J. Repond), Forward Calorimetry, Costs (M. Breidenbach), Magnet/Flux Return, Muons, Simulation (N. Graf), Tracking (M. Demarteau, R. Partridge), Vertexing (D. Su), MDI Liaison.

# Road to Snowmass

- LCWS05 Settle on critical questions and goals
- April **Working Groups define simulation studies and other work needed to answer critical questions by Snowmass, engage help, start work.**
- May-August Working Group meetings push studies and review progress.  
Monthly Advisory Group meetings push overall detector design, review sub-system progress.
- Mid-June **Advisory Group meeting at Fermilab. Mid-term review.**
- before Snowmass Be ready with sub-system designs, based on realistic mechanical concepts, justified with simulated performance. Design tools ready. Benchmarking analyses ready.
- at Snowmass **Review subsystem designs and starting point performance. Optimize overall detector. Review technologies and mechanical design and choose baselines.**

# Post Snowmass: Write it up!

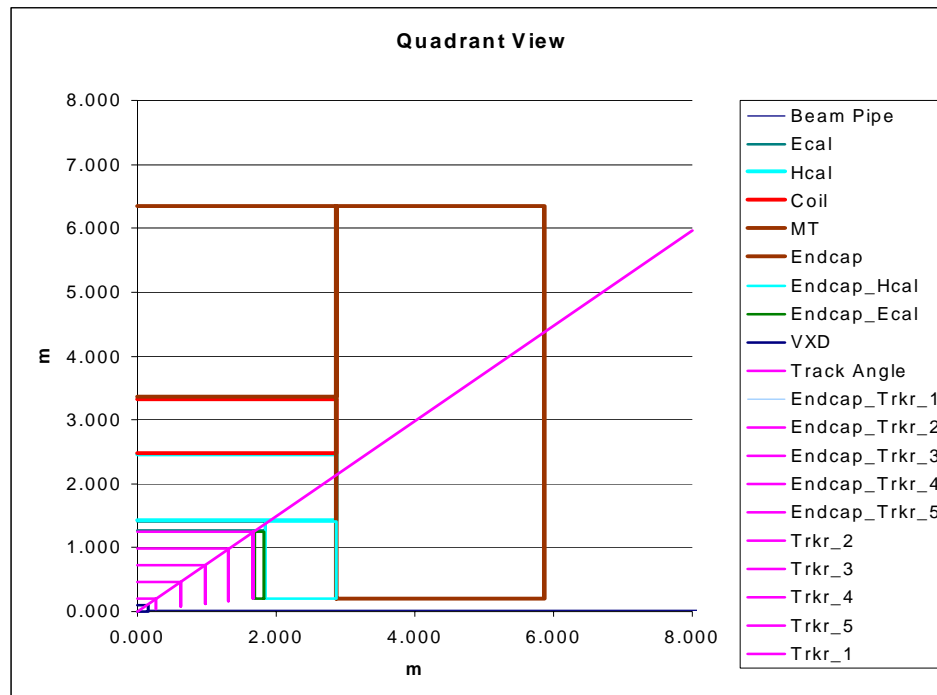
- October      Advisory Group meets to review and finalize global detector parameters. Organize Detector Outline writing teams.
- December    Detector Outline Draft #1
- January 06   Design Study meets to review design and Detector Outline.
- February 06   Draft #2
- March 06     Detector Outline Complete
- April 06      Submit Detector Outline to WWS

# Life after the Detector Outline

- Next formal steps likely include:
  - R&D Requirements 06?
  - Costing Document 06?
  - CDR 07?
  - R&D Progress Report
- And eventually:
  - Letter of Intent
  - TDR
- First let's see if SiD concept works!



# Silicon Detector Design Study



**Goal** *Fill in the details. Quantitatively optimize the design. Choose the detector technologies.*

*Produce a coherent and cost conscious description of an integrated and optimized LC detector design by ~ end of 2005.*