



Dueling Opinions

SiD Workshop
April 9-11



General

- Does the brand X detector have any significant physics capabilities that are missing in SiD?
If you argue that the answer is no, then why should we build two detectors?

Rich Partridge

- Opinion 1: Marty Breidenbach
- Opinion 2: Phil Burrows





General

- Is it healthy/wise to identify SiD as the American Detector ?

Jerry Blazey

- Opinion 1: Andrei Nomerotski
- Opinion 2: John Jaros





General

- Which lab should be the "home" lab for SiD ?

Jerry Blazey

- Opinion 1: Jim Brau
- Opinion 2: Harry Weerts





Schedule

- Why should the detector schedule stay in step with that of the machine?

Marty Breidenbach

- Opinion 1: Tom Markiewicz
- Opinion 2: John Jaros





Calorimetry

- It has been argued that one learns very little about the feasibility of PFA from test beam slice tests and the 1 m³ test. Why then, do we mount such very large scale and expensive efforts to proof just a technology on a time scale that is too late for a CDR or even a detector EDR without seriously considering alternative approaches ?

Marcel Demarteau

- Opinion 1: Jose Repond
- Opinion 2: Adam Para





Software

- As SiD benchmarking and simulation efforts advance the need for precise and comprehensive signal and background generator suites will need to advance with (preferably lead) simulation efforts.
Two questions here:

a) How can the field retain and encourage "hands-on" theorists to contribute to and maintain these increasingly complex suites?

b) What can SiD do to make the simulation environment more accessible to theorists who would like to explore signal acceptance and background rejection without having to endure a protracted learning curve?

Bob Tschirhart

- Opinion 1: Tim Barklow
- Opinion 2: Tony Johnson





Physics Motivation

- The benchmark physics channels have a majority of standard and "bread and butter" channels. The ability to "finish" the LHC job is mostly tested. Would it make sense to create a benchmark physics group defining and testing a whole set of channels not easily reachable at the LHC, namely, using the ILC as a DISCOVERY tool as well ?

Caroline Milstene

- Opinion 1: Tim Barklow
- Opinion 2: Jim Brau





CDR

- Should SiD consider an R&D strategy that delivers a lighter weight reference design while simultaneously maintaining and growing a longer-term internal R&D program? In such a model the "CDR-lite" can be a living reference that is updated with annual or bi-annual R&D progress. This strategy might interact more naturally with external R&D review processes.

Bob Tschirhart

- Opinion 1: John Jaros
- Opinion 2: Tom Markiewicz





LHC

- It does seem likely at this point that execution of the LHC detector upgrades will precede a construction start on ILC detectors. The LHC upgrades are a very large investment for the field. How should SiD, and in particular US participants, be positioned to maximally leverage the LHC upgrade R&D and construction for SiD R&D?

Bob Tschirhart





Magnet

- How was the magnetic field chosen ?

Ray Frey showed a while ago that at 500 GeV, 80% of the particles have less than 30 GeV. Considering in some detail SM channels with "meaningful" cross-sections, e.g. qq , ww , eeZ , $wenu$... in jets, the mean energy/track is below 10 GeV and often below 8 GeV even.

For that majority of low energy tracks a 5 Tesla magnetic field makes 2 GeV particles curl badly in HCal and 1 GeV particles curl badly in the ECal, therefore difficult to follow and separate. How much better is 4 Tesla ? Have comparative studies been done?

Caroline Milstene

