Software Introduction

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LCD Simulations Workshop
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US LC Software

• Used Gismo for many years
  – Slowly moving to Geant4
• Support hep.lcd (Java) and RootTools (Root) for FastMC and reconstruction
• Use stdhep, sio files for data storage
  – + sio -> Root converter
• JAS2 and Root for data analysis
What’s New

• Last workshop at NIU last November
  – LCIO – common IO for worldwide LC studies discussed
    • Several meetings and phone discussions followed
    • Initial version now implemented
      – (see F.Gaede’s talk tomorrow)
      – C++, Java and Fortran support available
      – Support for writing LCIO files from Mokka
      – Support for reading LCIO files into JAS3
  – JAS 3 demoed at NIU
    • Now interfaced to LCD code and ready for first users
  – Initial version of lcdg4 demoed
    • Several reports on progress with Geant4 at this workshop
Workshop Software Overview

• Monday: JAS3 Talks
  – Not Linear Collider Specific
    • Several talks on AIDA (Abstract Interfaces for Data Analysis)
      – Developed in collaboration with CERN, others
      – Core analysis framework in JAS
    • Using JAS3
• Tuesday: JAS3 for Linear Collider
  – Using JAS3
    • to read LC .stdhep, .sio, .lcio files
    • with hep.lcd reconstruction and analysis classes
  – Using JAS3 + LCD + WIRED event display
  – Overview of LCIO
  – Event generators
• Wednesday: Geant4 (+lcdg4, mokka) and analysis tools
LC Software Tutorials

• Day 1 (today): talks and tutorials not specific to Linear Collider
  • Several talks on AIDA (Abstract Interfaces for Data Analysis)
    – Developed in collaboration with CERN, others
    – Core analysis framework in JAS3

• Day 2 (tomorrow): talks and tutorials specific to use of JAS3 with LCD code.
  • Including use of WIRED event display with JAS3 and LCD

• Day 3 (Wednesday): talks and tutorials on use of MC simulation tools, and cluster analysis.

• Workshop is informal, can have sessions on other topics too (Geant4, Gismo, RootTools, JAS2 etc.)
Tutorial Logistics

- Tutorials will be in SCS training room
  - 1st floor SLAC computer center
  - If you have your own laptop you are encouraged to bring it
    - You will need a wireless network card
      - some loaners may be available – see Norm Graf
    - 12 XP workstations available
      - SLAC account not required for Monday + Tuesday
      - If you want to try running simulations on Wednesday you may need a SLAC Unix account
        - If you don’t have one see Norm Graf
  - Tutorials are scheduled from 2pm with wrap-up at 4pm, but we have the room all afternoon
Discussion Items

- Software development for LC has been quite slow
  - Limited (and temporary) manpower
- Since this is a workshop would be good to discuss plans for future...
  - How should we switch from .sio to .lcio files
  - How should we switch from JAS2 to JAS3
    - How much backward compatibility do we need?
  - Which Geant4 MC’s should we support
  - How can we make best use of available manpower?