Simulation Session

ALCPG 2007
Fermilab

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Introduction

- What is the goal ?

- Where are we now ?

- Where do we want to go ?

- What needs to be done ?

- This session …

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The Goal

From zero to analysis in less than 15 minutes !

`N.Graf`

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Where are we now

- Have a lot of different code "pieces" in place

  - Detector Simulations (GEANT based)

  - Geometry descriptions

  - Reconstruction (Tracking,etc...)

  - Particle flow algorithms

  - ...

- Very few users, mostly developers

- Steep learning curve for users

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Where do we want to go ?

- Optimize detector designs

- Do physics benchmarks

- Need to massively expand user base

- Be done with all the studies in June 2008

- Write LOIs

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What needs to be done

- Make it easier for the Users

  - Installation should made be easier

  - Define clear starting points

  - Simulation of MC events

  - More examples

- **Spread expertise**

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Installation

- A lot of different packages required

  – Makes installation difficult

  – Can this be reduced ?

- Users want to use a Release

  – Something they know should work

- Provide sample analysis programs & LCIO files to test installation

  – Helps the user to verify his installation

  – Helps diagnosis

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A clear starting point !

- Define, what is common starting point

- Software Versions or even a release

  - e.g. org.lcsim V1.003a is baseline version

  - Which detector simulation version is the accurate one

- Clearly defined Detector versions

  - we use ldc01sc or sid01 or …

  - calibrations, etc.

- Makes comparisons a lot easier

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MC simulations

- Also here, make sure that we are comparing like with like

- Central *stdhep* repositories are very useful

- Should define default PYTHIA/COMPHEP/pick your favorite generator/ settings

- Even better, stdhep files could then be processed by all frameworks ...

- SLAC repository is a good start

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Getting started

- Quite difficult to know where to get started

- Not a lot of documentation on how to use the individual processors/drivers

- Have sensible default settings

- Lot of people start with other peoples sample code

- Most users do this part-time, so not infinite amount of time to figure things out

- ILC is fun, a lot of people are keen on contributing

- Let's make it easy for them

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This session

- Status report from the frameworks

  - Simulation

  - Reconstruction

- User experience talks

  - How did they do it ...

  - What where the problems encountered

  - What would they like to be improved

- An attempt to spread knowledge

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