

# HPS Software

Software session at the HPS Collaboration Meeting

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*October 17, 2011*

# Agenda

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## 8:30 - 10am:

10' Welcome, agenda

- Maurik

30' HPS Detector Simulation using LCSim

- Jeremy McCormick

30' Trigger simulations

- Sho Uemura

20' Status of EVIO / LCIO integration

- Homer Neil

*10am - Coffee*

## 10:30 - 12am:

30' Status Tracker simulation and analysis

- Matt Graham

20' Online Monitoring & Calibration - ECAL

- FX Girod

20' Online Monitoring & Calibration - Tracker

- Tim Nelson

20' EPICS - overview, how to plug in.

- Hovanes Egiyan

15' HDF5 for data analysis

- Gagik Gavalian



# Test Run Goals

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- ❖ **Prove we can run the full HPS experiment:**
  - ❖ Detectors work as expected
  - ❖ DAQ works and can handle rates
  - ❖ Rates agree (more or less) with simulations
  - ❖ Backgrounds are manageable
  - ❖ Data is of sufficient quality to reach physics goals
- ❖ **Learn a ton & improve full HPS setup.**
- ❖ **Extract physics signal for low mass  $A'$ .**
  - ❖ Full confidence in experiment
  - ❖ Thesis material
  - ❖ Presentations, papers, fame...



# Critical Path Software

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- ❖ Much of the required software exists: DAQ, simulation, tracker readout, tracking, ecal readout etc.
- ❖ Some of the “glue” between different parts is still missing:
  - ❖ **FPGA implementation of trigger.** (Tuesday: Sergey Boyarinov?)
  - ❖ **EVIO -> LCIO** - so we can read the DAQ output. (talk: Homer Neil)
  - ❖ Tracking combined with ECAL.
- ❖ Some of the “support” software is still missing:
  - ❖ **Online Monitoring software.** (talks: FX Girod, Tim Nelson)
  - ❖ Calibration software. (talks: FX Girod, Tim Nelson)
  - ❖ Constants database. (last week: Homer Neil)
- ❖ Desirable improvements:
  - ❖ Continuing more detailed studies of the trigger.
  - ❖ Improvements in tracking performance.
  - ❖ Simulation (geometry, event generator ...)