1.9.2020

ILD STATUS

Agenda

• News	Ties Behnke
• ILD elections	Marc Winter
• New ILD member: IHEP	Manqu Ruan
• ILC tools and data for snowmass	Jenny List
• VTX R&D Status	Auguste Besson
• The new ILC organisatin: plans of the detector and physics directorate	Hitoshi Murayama

ILD and Snowmass

Significant effort to support
the snowmass process

- Data and simulation:
  see talk by Jenny
- Participation in the different
  working groups
- Submitted an ILD LOI to the
  energy frontier group

The ILD Detector for the ILC
Letter of Interest for the 2020 Snowmass Process

The ILD Concept Group, contact: Ties Behnke, Ties.Behnke@desy.de

Abstract

The International Large Detector, ILD, is a detector proposal developed for an electron-positron collider that starts operation as a Higgs factory, and then expands in energy to run near the top threshold and beyond. It has been optimised for the International Linear Collider, ILC. With its well developed infrastructure for simulation studies ILD is well prepared to support the Snowmass effort.

1. The ILD Detector

The design of the ILD detector is driven by a list of requirements, which have been developed based on the main science topics for which this detector is going to be built [1]:

- **Impact parameter resolution:** An impact parameter resolution of $5\,\mu\text{m} \oplus 10\,\mu\text{m}/[p\,(\text{GeV}/c)\sin^{3/2}\theta]$ has been defined as a goal, where θ is the angle between the particle and the beamline.
- **Momentum resolution:** An inverse momentum resolution of $\Delta(1/p_T) = 2 \times 10^{-5}\ (\text{GeV/c})^{-1}$ asymptotically at high momenta should be reached with the combined silicon - TPC tracker. Maintaining excellent tracking efficiency and very good momentum resolution at lower momenta will be achieved by an aggressive design to minimise the detector's material budget.
- **Jet energy resolution:** Using the paradigm of particle flow a jet energy resolution $\Delta E/E = 3\%$ should be

Software Status

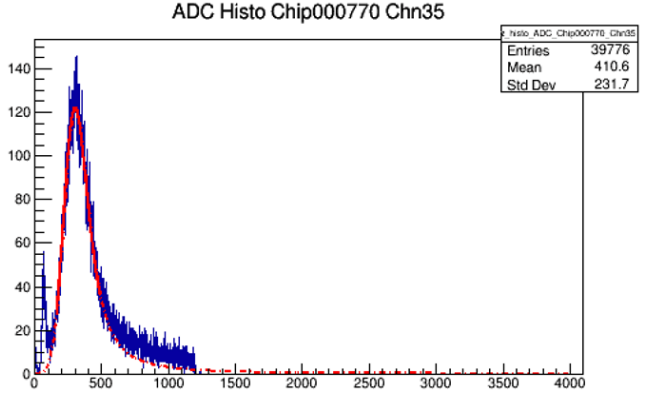
- Preparations for 250 GeV production are ongoing
    - ongoing preparation of 250 GeV generator samples (Whizard 2.8.4).
      M.Berggren had succesfully performed a one-permille *try-run* of 2f-5f channels
      for 250 GeV production.
    - Test production for complete 2f/4f higgs samples have started,
      working on decay mode of the scripts, will address 6f samples later.
    - Production of generator files should start soon.

- ILCSOFT: test production with release *v02-01-01* had been validated by *physics working group*
- Production release V02-02 is being prepared

CALICE test beam

- First test-beam under Corona conditions: August 17-23, 2020, at DESY
  - Two experiments in parallel: CALICE AHCAL Megatile test, CMS HGCAL test in two beam lines

Megatile: Uni. Mainz



MIP spectra from Megatile Board

DESY – Univ. Mainz – LLR Paris

Next meeting

- Next meeting: September 29, 2020
  - News
  - R&D report: we will ask one subdetector group / R&D collaboration to update us on their status: volunteers needed
  - Your contribution could be here: let us know.