ilc NewsLine

10 May 2007

CALICE Calorimeter for ILC

Around the World

What can the ILC do to get students back to science?

A conversation with economics professor and author Kazuo Nishimura

Kazuo Nishimura

"Less than 50 percent." This is the shocking data that Kazuo Nishimura, the head of the Economic Research Institute at Kyoto University, one of the well-respected educational institutes in Japan, reported in his book *University students who cannot calculate fraction numbers*. Nishimura believes that the ILC could be one of the remedies to fix the world-wide epidemic of students moving away from science. *ILC NewsLine* recently had the opportunity to discuss this growing trend with the economics professor.
Read more...

-- Nobuko Kobayashi and Rika Takahashi

Calendar

Upcoming meetings, conferences, workshops

CALICE Collaboration Meeting
Kobe University, Kobe, Japan
10-12 May 2007

Feature Story

Annual ILC software workshop reviews whole chain of data analysis

Group photo of the ILC Software Workshop, in front of LAL entrance

Even the best detector will be useless without clever reconstruction algorithms and software. On 2-4 May 2007, the ILC Software Workshop was held at LAL, Orsay (France). The whole chain of data processing was reviewed there: software framework and tools, algorithms and physics results. At the end of the workshop, DESY physicist Ties Behnke summarised that significant progress has been achieved over the past year and important performance milestones are close to being reached, even though the community is still small. Cambridge physicist Mark Thomson, finished his contribution declaring he was now convinced that Particle Flow Algorithm (PFA) can meet the ILC performance goals at 500 GeV and 1 TeV.
Read more...

Workshop links : Website - Talks - Photos

Director's Corner

DOE and NSF Review of the ILC-Americas Programme

Hasan Padamsee presented the latest ILC Americas cavity results, including a report on a reentrant shape cavity that is now at Cornell University.

The second review of the US R&D programme for the International Linear Collider (ILC) by the Department of Energy (DOE) and the National Science Foundation (NSF) was held at Fermilab from 30 April to 2 May 2007. This meeting served as DOE and NSF's primary peer review of the US portion of ILC R&D activities. The goal of the review was to evaluate the achievements and future planning of the US ILC programme, and those activities needed to position the US as a possible host. Items addressed included Americas Regional Team (ART) organisation and management of the programme, the FY2006 R&D programme accomplishments, the R&D plan, milestones and resource needs for FY2007 and beyond, and plans for US activities relating to development of test infrastructure and industrial partnerships.
Read more...

-- Gerry Dugan

Director's Corner Archive

Image of the Week

CALICE meeting - KOBE university

- 42 people for the meeting is nice and it shows how spirited active we are.
- It shows to the outside world the level of activities
- Everybody understand that this successful meeting will help a lot in our discussion with R&D panel review, with CERN and FNAL for our test beam demand, but it could also help in the discussion with the funding agencies
- The KOBE meeting is also a nice way to shows that CALICE is transversal for he detector concept PFA based (GLD, SiD or LDC) . Yes, we are not 4th concept !!!

ECAL : W-Si

> we are closing the first generation prototype completion
(some problem, but GLOBALY very nice behavior)

> we are entering the complete (?) prototype in test beam

> we are entering period of TB analysis (including discovery of pbs, performances, etc…)

> we are entering the design period of the second generation prototype
(the one as closer as possible to the final detector)

MAPS option is a TPC **Tera Pixels Calorimeter**
Making progress, TB very soon , interesting to see the ultimate digital em cal

ECAL : W-SCintillator

- First period of test, but seems very fruitful

(PERFECT to shows to the panel at LCWS07 : “YES, we are a collaboration”)
First prelim number on energy resolution !!!
YES, we are an open collaboration (Kyungpook is still not officially in the collaboration, but they participate to the DESY TB and analysis)

- MPPC (Si PM) are still under investigation and progressing for future

(Who know the dynamic of MPPC/Si PM in 5 years) ??

Tile HCAL

> Test Beam preparation with New table, full HCAL layers
(some consultation of the ECAL groups would have been better, before to establish all the agenda)

➢A very interesting comparison of the advantages and drawbacks of SiPM/MPPC but also road to improvement (Misha)

> Strip option presented by Tohru remains interesting even if software effort would help before to proceed

Gas HCAL

➢ HaRDROC is under study and will be used very soon on small size layer (RPC-PCB-VFEon-DAQ) plan for 1 m^2

➢ DAQ side using HaRDROC seems well covered on digital side (analog ???)

➢ GEM test underway (including beam damage test … almost a hole in the GEM plane. IF MONEY ARRIVE , plan for m3 prototype in 2008

➢ Vertical slice test in June, Plan for m3 in 2008 … **CALICE is already at FNAL**

VFE and DAQ

- SPIROC, SKIROC, HaRDROC … the Orsay's trilogy
  Design, test and very nice progress (and some delay…)

- Even if it remains a lot of work, the need for the EUDET is covered as well as the one for DHCAL. 2009 in beam still in the goal ? Do I understand correctly that we can have all the VFE for 3 detectors for 150K€ for ORSAY chip ??

- DAQ in UK … a lot of progress in the design of the new DAQ. (emulate VFE chip with FPGA) but also on communication, study of the SEU (seems not a pb)
  First prototype in mid 2008 , DAQ ready in 2009 (manpower pb ??)

Honestly, the large number of groups doing SiPM test is nice, but it also would be interesting to give the information that we need also contributions other domains … i.e. on-line domain !!

TB Analysis

- Closer & closer to a first note and publication in ECAL analysis
  (Prague, Clermont, Grenoble, LLR, Cambridge, Birmingham, London, and **FNAL** etc…) …. Impressive list …
  Energy resolution, gap between wafers, longit. profile , position and angular resol.

- HCAL em shower (much better than before)
- HCAL hadronic shower (YES, We can have compensation !!!)

I think the weekly analysis meeting are VERY efficient and contribute deeply to the high quality and good advancement of the analysis

We can congratulate Nigel and David for it

Software

- Simulation - MOKKA – for test beam we have a very nice tools !!!

(scintillator ECAL DESY TB remains to be implemented)
When possible : Common Feature define a collaboration

- SOFTWARE package - GRID … GRID …. And GRID
  but also LCIO conversion, Recons. Package, Data Storage, etc…

“CALICE is using the grid probably more and better than LHC experiment”
(Someone from Computing Center Lyon speaking about data flow distribution (MC or real data))

Thanks you to Roman for his incredible work and availability to help

1 - New groups are continuously joining

> Heidelberg very soon

> Korean group in discussion

> Belgium also in discussion

2 - FNAL propose to have postdoc , fellow and seniors 1 year position (please contact Jae Yu for more information)

We ask for a lot to recognize our work outside of CALICE
We have to be strong and successful

2006 was a very successful year
with test beam at CERN, preparation of the VST at FNAL

What about 2007

> Test beam 2007 at CERN
> Review of calorimetry @ LCWS 07

CALICE Agenda for the review of calorimetry at LCWS07-DESY

Preliminary Title	Speaker	Country	Time
CALICE collaboration goals, structures and perspective	Paul Dauncey (ICL)	UK	15
ECAL 1	Tohru Takeshita (Shinshu Univ)	Japan	25
ECAL 2	Henri Videau (LLR)	France	25
HCAL 1	Felix Sefkow (DESY)	Germany	25
HCAL 2	Jae Yu (Univ. Texas- Arlington)	USA	25
VFE development	Christophe de la Taille (LAL)	France	20
DAQ development	David Bailey (UCL)	UK	20
TB condition and set-up	Erika Garutti (DESY)	Germany	15
TB Analysis and results (including software)	David Ward (Cambridge)	UK	25
Executive summary	Paul Dauncey (ICL)	UK	5

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What about 2007

> Test beam 2007 at CERN
> Review of calorimetry @ LCWS 07
> analysis of the 2006 data !!!

At longer term (2008)

> design of the second generation prototype for AHCAL, ECL W-Si , ECAL Scint. first generation for DHCAL , HCAL-Scint. Strip
> Installation at FNAL

NEXT MEETING

> Second half of September 2007 in Prague

> February 2008 at ANL or FNAL

Thanks to Professor Hiroshi Takeda for his hospitality

Thanks to Professor Kiyotomo Kawagoe
for the nice organization (Daniel Jeans & administrative people)
(without forgetting the fantastic dinner yesterday !!)

Thanks to all people helping for a successful meeting