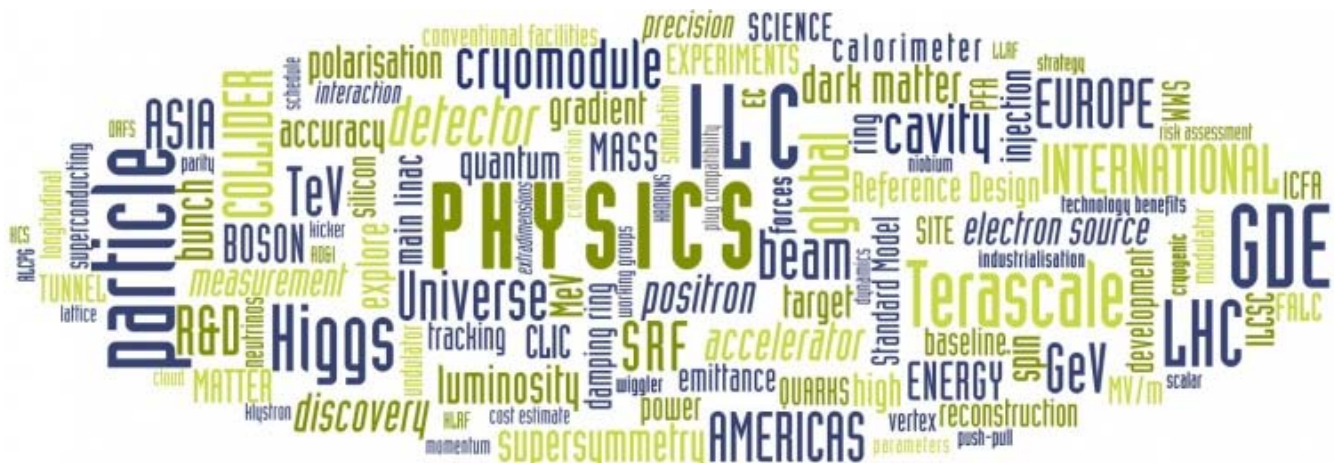


DIRECTOR'S CORNER

Introducing the new *ILC NewsLine*

by Barry Barish and Maura Barone



Welcome to the new *ILC Newsline*! This is the first issue of a new style, with a modern look and feel, new logo, more cohesive page design and navigation, and added features and functionalities. Take a tour of the renewed *ILC Newsline*.

RESEARCH DIRECTOR'S REPORT

Planning the *Detailed Baseline Design Report*

by Sakue Yamada



The scientists that make up the physics and detector side of the ILC community come together to create the *Detailed Baseline Detector Report*, a document that reflects the newest developments and requirements in detector R&D.

SLIDESHOW

Impressions from ALCPG11



View images from this year's Americas Linear Collider Physics Group conference, hosted by the University of Oregon in Eugene.

IMAGE OF THE WEEK



LAL inaugurates calorimeter assembly hall

Image: LAL/H. Kerec

Members of French teams who work on the SiW electromagnetic calorimeter prototype inaugurated the brand new LAL assembly hall on 14 March. Also shown are various members of laboratory directorates.

IN THE NEWS

From The Guardian
22 March 2011

[Tracking down the crafty neutrino](#)

In the Ardennes hills near Givet, in eastern France, stands Chooz nuclear power station, with its twin concrete cooling towers spewing steam. Here scientists may soon catch some neutrinos and break one of the most enigmatic secrets of the universe.

From Fermilab Today
21 March 2011

[Soudan mine shaft fire 99 percent out](#)

Over the weekend, the Minnesota Interagency Fire Center provided updates on the situation at the Soudan Underground Mine, which houses two Fermilab experiments.

From The Register-Guard
20 March 2011

[Physics Slam gives public inside look at science](#)

Slamming protons together isn't the only way physicists make sparks. At least, not anymore.

This week Eugene will be host to the American debut of another kind of physics experiment, called the Physics Slam.

From KMTR News 16
20 March 2011

[Physics Slam explains science in layman's terms](#)

Descending on the University of Oregon this week are 200 leading physicists from around the world, collaborating on a project while trying to explain their work in layman's terms to the public.

From symmetry breaking
18 March 2011

[Interesting effect at the Tevatron hints at new physics](#)

Scientists at the Large Hadron Collider may be on the verge of discovering a new particle, according to mounting evidence from experiments at Fermilab's Tevatron.

Judging by its behavior, it's not the Higgs.

From Eugene Weekly
17 March 2011

[Particle Party](#)

When you're a physicist in town for a linear collider conference, what do you do for fun? You hold a physics slam, DUH! At least that's what members of the American Linear Collider Physics Group decided to do.

From Science
17 March 2011

[High-Energy Physics Experiments in Japan Weather the Crises](#)

During an earthquake, tsunami, or nuclear meltdown, the safest place to be is in a mine.

So says Stuart Freedman, Lawrence Berkeley National Laboratory's spokesperson for the KamLAND neutrino experiment,

whose 1879 glass photomultiplier tubes emerged from the earthquake unscathed.

CALENDAR

UPCOMING EVENTS

[2011 Particle Accelerator Conference \(PAC'11\)](#)
New York Marriott Marquis Hotel, New York, NY, USA
28 March- 01 April 2011

[Linear Collider Power Distribution and Pulsing](#)
LAL, Orsay, France
09- 10 May 2011

UPCOMING SCHOOLS

[Joint US-CERN-Japan-Russia School on Particle Accelerators](#)
[Course on Synchrotron Radiation and Free Electron Lasers](#)
Ettore Majorana Foundation and Center for Scientific Culture,
Erice, Sicily, Italy
06- 15 April 2011

[View complete calendar](#)

PREPRINTS

ARXIV PREPRINTS

[1103.4036](#)
Study of Single W production in e-gamma collisions through the decay lepton spectrum to probe gamma-WW couplings

[1103.3271](#)
Vanilla Technicolor at Linear Colliders

DIRECTOR'S CORNER

Introducing the new *ILC NewsLine*

Barry Barish and Maura Barone | 24 March 2011



Content will now be tagged. The tags used with higher frequency will appear inside a weekly updated tag cloud at the bottom of the left sidebar. Tags will make easier browsing for related content.

Welcome to the new *ILC NewsLine*! This is the first issue of a new style, with a modern look and feel, new logo, more cohesive page design and navigation, wider format, larger images and added features and functionalities. Since 2005, *ILC NewsLine* has been our main tool for communicating the continuous progress of our ILC community. The content is directed at our audience that typically has interest and familiarity with particle physics and the ILC. Therefore, we do not shy away from including some technical and scientific content in our articles. In fact, we try to balance covering scientific, political

and personal issues that we feel have relevance to our audience. It is quite a challenge to make an interesting and timely issue weekly, especially considering that it is a global publication, where the content, our communicators and our readership are all distributed around the world.

Today we are proud to introduce the new stylish design of *ILC NewsLine*, which was capably created by Xeno Media, the Chicago company that designed all the previous versions of our newsletter.

Among the new features is the new commenting function, tag cloud, sharing and social bookmarking, and Really Simple Syndication (RSS) feed of individual stories. In particular, we encourage you to directly interact and express your opinions by adding comments to our published stories or participate in discussions via the comment system. You can also share stories to several popular social networks. We have moved away from the classic three-column layout in order to make the homepage more inviting to read, by making it wider and displaying a short summary of each story along with the headline and thumbnail image. Regardless of how old the page is that you are currently visiting, the left sidebar will dynamically display the most recent table of contents, most popular tags, latest updates and upcoming ILC related events all at a glance.

Behind the scenes, the new system is set up in a way that our writers can directly draft and edit their stories at any time prior publication. *ILC NewsLine* is a 'global' publication, edited across the oceans, so this represents a major advantage. Another benefit of this system is that the content will be indexed, resulting in an improved and more precise internal search. At the same time, the new syntax of the page addresses (URLs) – besides being easier to read and to remember – will also optimise the way *ILC NewsLine* content is indexed by external search engines. In addition,



we improved the archive, providing output lists by author, category and tag. Look for the tags at the end of each story and click on them to view related content we published in the past.

The new format is optimised for web browser viewing; however, we will still send our subscribers the newsletter in email format. Since many of our readers and collaborators travel and access *ILC NewsLine* from their smartphones, images will not be embedded anymore in the email version delivered to your Inbox. To visualise remote images, blocked by default by most email readers, you will have to explicitly allow your email client to 'load images' from the *ILC NewsLine* site. Alternatively, you can download the pdf version of the full issue, including main page and all stories, and read it offline.

We also enhanced the subscription management: in order to be added to the *NewsLine* distribution list, new subscribers will be required to respond to the confirmation email. No action is required for existing subscribers. Should you want to unsubscribe, simply select the unsubscribe link at the bottom of the *NewsLine* email.

This has been a collaborative and global effort, as usually happens in the ILC community.

First of all, we want to thank the ILC communicators for setting together with us the requirements for this project and for providing original ideas, such as the adoption of the commenting and sharing functions. They also gave us several suggestions to make the design more appealing and the navigation more intuitive.

Particular acknowledgment is due to the two young ILC Global Design Effort members and brilliant software developers who worked on this makeover project since the beginning: David Seigle and Kevin Flannery. They have been capably and restlessly transforming ideas into coded (and working!) software. Last summer David developed the core of this new system, the general purpose plug-in for newsletters editing and publishing. Kevin has since developed the *NewsLine* customisations, with meticulous care and attention paid to the minutest detail. Kevin has also provided an essential contribution with the system configuration and maintenance and with the archiving of all the legacy content.

We hope you will enjoy the renewed *ILC NewsLine*, and find it not only more visually appealing, but also more inviting to read, browse and worth sharing with colleagues and friends. Don't forget to bookmark the new address:
<http://newsline.linearcollider.org> (the old address will also work).

If you are not a subscriber yet, we invite you to [sign up](#) to our weekly ILC newsletter!

ILC NEWSLINE

Copyright © 2011 ILC GDE

Printed from <http://newsline.linearcollider.org>

RESEARCH DIRECTOR'S REPORT

Planning the *Detailed Baseline Design Report*

Sakue Yamada | [24 March 2011](#)



Physics and detector audience listens to Sakue Yamada's talk via videoconference during ALPCG11. Image: ILC

In late 2009, the physics common task group (CTG) proposed a set of new benchmark reactions, which were needed in the work-plan towards the *Baseline Design Report*. They were chosen to demonstrate the physics possibilities of the ILC and the capability of the detectors, and were based on various physics prospects. The list included a few physics reactions at one teraelectronvolt (TeV) in view of an energy upgrade in future. The two validated detector groups, ILD (International Large Detector) and SiD (Silicon Detector), considered the proposed list in view of their plans for practical simulation works. The International Detector Advisory Group (IDAG) also examined the list when it met in March 2010, together with representatives of the detector groups, the software CTG and the physics CTG. Knowing that the resources of the detector groups are rather limited to extensively tackle the proposed

reactions, IDAG pointed out that the large amount of simulation prepared for the Letters of Intent (LOIs) already satisfied much of the purpose and too much elaboration would not be necessary. Yet IDAG suggested adding a new physics channel, the W-pair production at one TeV, which can bring interesting physics and demonstrate the performance of the detectors at high energy in forward and rear directions.

Last September, we formed a task force to revisit the new benchmark list and to organise work for simulation under a realistic environment. It consisted of members representing the ILD group (Mikael Berggren), the SiD group (Tim Barlow), the software CTG (Norman Graf, Akiya Miyamoto) and the physics CTG (Keisuke Fujii, Michael Peskin, Georg Weiglein), with Michael Peskin as convener. The task force made a report last January, which resolved plans for simulation exercises and included detailed simulation conditions. It suggested adding three benchmarks at one TeV. These include two channels to measure Higgs branching ratios to various final states and W-pair production, as IDAG suggested. The task force foresees a challenge in identifying some of the channels that produce many hadron jets in the final state. To perform these simulations, the detector groups need to implement realistic detector configurations and beam background conditions. They will also need to know precisely the realistic physics background, which may mimic signal channels, and make many simulations for standard model reactions.

As for lower-energy reactions, each group will repeat one of the already-studied channels with its final detector configuration. This will check the consistency against the LOI simulations. Our hope is that the LOI simulations will prove to have been good enough compared to the one with the final detector configuration.

The output of these simulations will be presented in the *Detailed Baseline Design Report* (DBD), in which there should be a physics chapter where the ILC physics case is illustrated. [A physics volume](#) of the Global Design Effort's *Reference Design Report* was already published in 2007, and we are going to include some of the LOI reactions in an interim report, which is under editing now, to update it. The physics chapter of the DBD needs to be organised in such a way that it does not overlap much with the existing publications but that it illustrates the entire ILC physics case clearly and includes new

simulations. Michael Peskin volunteered to organise the writing of this chapter together with the physics CTG members and additional volunteers. Some preparatory considerations are ongoing.

The physics CTG has already thought about various possible physics scenarios, for instance, in order to list desired benchmarks. We are now in the new stage that Large Hadron Collider is taking data with proton-proton collisions at seven TeV, and it is very likely that there could be a new finding before we complete the DBD. Under such a situation, the physics common task group will be prepared to judge any news. While the studies accomplished so far by the groups cover quite a wide range of possibilities, we need to be flexible about where we should put more weight in the physics chapter. Such new findings at the LHC will affect the strategy in how to realise the project too. In that sense the ongoing detailed study of the group can provide extremely important output not only for the DBD but also for making a strategy beyond the DBD.

DBD | DETAILED BASELINE DESIGN | DETECTORS

Copyright © 2011 ILC GDE

Printed from <http://newsline.linearcollider.org>