

Feature Story

And Yet They Will Collide



Phil Burrows, Queen Mary University

Despite the nanometer size of the bunches of electrons and positrons produced at the future International Linear Collider, they will collide!

The ILC will produce the tiniest particle beams ever created, some 10 billion electrons and positrons packed into five-nanometer beams. Controlling the alignment of the beam will be crucial. Further, after interaction, the 10 Megawatt beam must be extracted safely, to protect both the detector and the accelerator.

"The great challenge is to make the beams as small as possible at the interaction point," said physicist Phil Burrows, of Queen Mary, University of London, "keeping in mind that we have to make these tiny spots collide."

The scientists of Snowmass Working Group 4, "Beam Delivery," are studying this problem, looking at everything that happens after the Main Linac, including Beam Delivery, interaction point, crossing angles and feedback system. Will there be two interaction points? What will be the collision angle? There are myriad questions to address.

"Our goal is to reach consensus on the

Feature Story

Hot Talks on Cold Technology



Kenji Saito, KEK

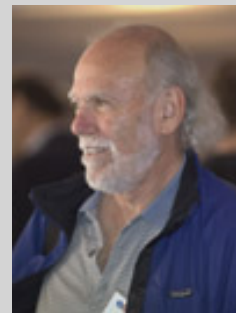
Determining the cavity gradient and the Q-value performance parameter of the superconducting cavity are some of the major focuses for ILC Working Group 5 at the Snowmass Workshops. "We had a very hot discussion on whether we start with 30 MV/m or 35 MV/m gradient as a start of the ILC operation, among other things," says Prof. Kenji Saito, an accelerator physicist from KEK. "The good thing about this workshop is that the people who are actually working on the cavities around the world get together and are reaching a consensus on what can and cannot be agreed."

"This way, we clearly recognize the different approaches of each R&D effort from each region and respect the way what other people think," he adds. "I am impressed by the way session organizers have summarized the draft documents well before the workshop starts. I really appreciate their efforts."

Announcements

Director's Corner

I have been writing the Director's Corner weekly since 8 June 2005, and this edition represents my tenth column. It was never my intent that the Director's Corner be a standalone communication, but rather that it be part of a weekly newsletter called *ILC NewsLine*. I began writing my column before *ILC NewsLine* started, however, due to the high demand to know the latest news about the GDE. I am happy to announce that as of today, my column will become a regular feature of *ILC NewsLine*, which will now become our main communication tool for the global ILC community.



Barry Barish

Each issue of *ILC NewsLine* will contain feature stories, profiles, images, news articles, announcements and a calendar. The GDE Regional Directors and GDE Deputy Directors will also regularly contribute to the newsletter. Because *ILC Newsline* is a publication for the entire ILC community, every issue will contain stories about activities around the globe. Our GDE communicators will develop all of the content for each issue, and they welcome your suggestions and feedback.

The second and equally important development this week is the launch of our ILC website. Our website is at www.linearcollider.org, and we thank Norm Graf of SLAC for giving us this url that he had the foresight to obtain. During the Snowmass Workshop, the website features "Live from Snowmass," a section that is updated daily to give those not at the workshop a chance to follow some of the highlights. In addition, working group agendas with links to talks are

baseline configurations we will recommend to the Global Design Effort," Burrows said.

The group will collaborate closely with detector experts. The results of the "Machine Detector Interface" working group will have strong implications for these sessions.

[Working Group 4 Agenda](#)

Calendar

Upcoming meetings, conferences, workshops

[ALCPG Workshop](#)

Snowmass, USA, 14-27 August 2005

[2nd ILC Workshop](#)

Snowmass, USA, 14-27 August 2005

[Nanobeams 2005](#)

Kyoto, Japan, 17-21 October 2005

[ECFA ILC Workshop](#)

Vienna, Austria, 14-17 November 2005

TESLA Collaboration Meeting and GDE Meeting Frascati, Italy, 5-10 December 2005

[2006 LCWS 2006](#)

Bangalore, India, 9-15 March 2006

Image of the Week



Live From Snowmass!

Couldn't make it to the workshops? No problem! The ILC Web site will post twice-daily updates live from Snowmass. Updates will include photos, commentary and links to agendas with talks.

[Visit Web site](#)

ILC Physics Q&A

As part of the Physics Working Groups activities, a web page of [questions and answers](#) about ILC physics has been created. This page is intended for members of the detector, accelerator and physics studies. Please send more questions or answers to [Michael Peskin](#).

Free Public Lecture, August 21

Hitoshi Murayama, University of California at Berkeley and Lawrence Berkeley National Laboratory, will give a lecture, "Seeing the Invisibles -- Challenge to 21st century particle physics and cosmology," on Monday, August 21 at 6:30 PM in the Snowmass Village Conference Center. [More Information](#)

Outreach Opportunities

The Education and Outreach Working Group is hosting several outreach activities during the Snowmass Workshop. Volunteers are needed! If you would like to help, please contact [Hitoshi Murayama](#) or [Marge Bardeen](#). [More Information](#)

GDE Member List

A list with all of the names and contact information for members of the GDE is now available online. [More Information](#)

Sign Up Your Friends!

Welcome to ILC NewsLine! We hope that you are enjoying our debut issue. If you know someone who would enjoy reading ILC NewsLine, sign them up! A subscription form is available online. [Sign up now](#)

In the News

being linked from our website. [Read more](#)

Around the World



Elizabeth Clements, Youhei Morita, Karsten Buesser, Perrine Royole-Degieux

Meet Your Communicators

The GDE Communicators are proud to present the first issue of ILC NewsLine. We hope that ILC NewsLine will quickly become a main communication tool for our global community. We will aim to include a variety of stories from each region in every issue that will highlight the activities and people behind the ILC. But we need your help.

ILC NewsLine is written for the global ILC community. This is your publication, and we need to know what you would like to see included in future issues. From highlighting work your graduate student is doing to getting married - let us know, and we will include it in the next ILC NewsLine. We welcome your [suggestions](#) and look forward to hearing from you soon. [Learn more about your communicators](#)

Photonic Crystal Accelerator

From *Physics News Update*, 12 August 2005

At many universities and national labs, electrons are accelerated to high speeds by electric fields imparted by gusts of microwaves. The cavities in which these microwaves are delivered (by devices called klystrons) will support a main radiation mode and other, wakefield, modes, or overtones, as well...

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