

### Feature Story

#### It's particle showers in a tungsten hadron calorimeter



Even though last week's "What is it?" does show recent test results it is not an image of temperature mapping of a cavity, sorry. Guest author and calorimeter expert Frank Simon explains what we really see:

The "What is it?" image of last week's ILC NewsLine is a picture-perfect example of why we now often call the calorimeter prototypes for the ILC "imaging calorimeters". To start with the solution, if you quickly want to know if you got it right: The picture shows three different types of particles in the CALICE tungsten hadron calorimeter prototype. From left to right, they are an electron, a muon and a pion. The images come from the recent test beam at CERN.

[Read more...](#)

-- Frank Simon

### Calendar

#### Upcoming meetings, conferences, workshops

[X-Band Structures, Beam Dynamics and Sources Workshop \(XB-10\)](#)

Cockcroft Institute, Daresbury, UK  
30 November - 3 December 2010

[Second Baseline Assessment Workshop \(BAW-2\)](#)

SLAC  
18-21 January 2011

#### Upcoming schools

[US Particle Accelerator School \(USPAS\)](#)

Old Dominion University, Hampton, Virginia, USA  
17-28 January 2011

[Excellence in Detectors and Instrumentation Technologies \(EDIT 2011\)](#)

CERN, Geneva, Switzerland  
31 January - 10 February 2011

[GDE Meetings calendar](#)

[View complete ILC calendar](#)

### Feature Story

#### Linear collider scientists tour the Mont Blanc tunnel



A group of scientists and engineers at the International Workshop on Linear Colliders last October took a tour of the Mont Blanc tunnel. Here they stand in front of a double-cabbed, or two-headed, fire truck. Having a cab at both ends means the truck never has to turn around within the narrow confines of a tunnel. *Image: John Osborne*

Tiny particles, producing brilliant collisions as they race around an underground tunnel, are the stars of an accelerator. It's easy to forget that people, too, must make their way around the tunnel, and that their protection merits as much attention as do flying bits of matter.

To see one example of tunnel safety done right, scientists and engineers in the linear collider community took a tour of the Mont Blanc tunnel earlier this autumn. The road tunnel, an 11.6-kilometre thoroughfare that connects France and Italy, is a model of safety in civil engineering.

[Read more...](#)

-- Leah Hesla

### In the News

From *CERN Courier*  
30 November 2010

#### The global linear collider comes together in Geneva

In particular, the ILC study has achieved its 2010 goal of demonstrating that half of the superconducting accelerating structures produced for the ILC reach the desired acceleration gradient.

[Read more...](#)

From *CERN Courier*  
30 November 2010

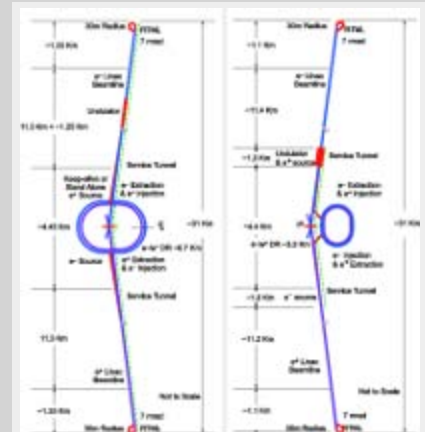
#### FLASH: the king of VUV and soft X-rays

DESY's experience with accelerators made it a natural home for one of the world's most brilliant radiation sources, where the intense laser pulses allow for fascinating research.

[Read more...](#)

### Director's Corner

#### Evolving the ILC baseline



Comparison of RDR configuration and the new configuration proposed in SB2009

I have officially approved two major changes in the ILC baseline configuration for the next phase of our R&D and design work. Last year, the Global Design Effort project managers proposed a set of changes to the ILC baseline, called "[SB2009](#)", aimed at improving the design, lowering the risks and helping contain costs. Four of those changes were considered top-level or major enough in their potential impacts to require a detailed and well-defined procedure to evaluate the proposals and make informed decisions. Today, I discuss the procedure we have followed to evaluate and decide on these changes. In the following two weeks, I will describe the two changes that I have approved: 1) changing from the *Reference Design Report* (RDR) double-tunnel configuration to a single tunnel for the main linac; and 2) deciding the operating gradient and spread for the *Technical Design Report*.

[Read more...](#)

-- Barry Barish

[Director's Corner Archive](#)

### Image of the Week

#### SRF cavities making waves



From *CERN Bulletin*  
29 November 2010

**Do atoms and anti-atoms obey the same laws of physics?**

ALPHA physicists have recently succeeded in trapping anti-atoms for the first time. Being able to hold on to the simplest atoms of antimatter is an important step towards the collaboration's ultimate goal: precision spectroscopic comparison of hydrogen and antihydrogen.

[Read more...](#)

From *CERN*  
26 November 2010

**LHC experiments bring new insight into primordial universe**

The ALICE experiment (...) published two papers just a few days after the start of lead-ion running. (...)the first direct observation of a phenomenon known as jet quenching has been made by both the ATLAS and CMS collaborations.

[Read more...](#)

From *MSNBC*  
24 November 2010

**10 science discoveries to be thankful for**

Super-high-speed crashes that release enormous amounts of energy and could reveal exotic particles and even recreate conditions in the universe only a trillionth of a second after the Big Bang. That's science any adrenaline junkie could latch onto.

[Read more...](#)

From *EIROForum*  
8 November 2010

**European XFEL joins EIROforum**

The European XFEL has the ambition to become a further success story and looks forward to joining the other organisations to draw upon their experience and, together with them, to strengthen the science basis for a stronger and globally more competitive Europe.

[Read more...](#)

All of the eight 9-cell cavities have been hooked up to high-power RF waveguides now and are being readied for simultaneous pulsed operation in the S1-Global experiment at KEK's Superconducting RF Test Facility. This view is from Cryomodule-A, looking upstream.  
*Credit: Nobu Toge*

## Announcements

### arXiv preprints

[1011.5805](#)

Measuring Anomalous Couplings in  $H \rightarrow WW^*$  Decays at the International Linear Collider

[1011.5033](#)

Direct Coupling of SiPMs to Scintillator Tiles for Imaging Calorimetry and Triggering

[1011.4765](#)

The CALICE Software Framework and Operational Experience

[1011.4760](#)

Realization and Test of the Engineering Prototype of the CALICE Tile Hadron Calorimeter

[1011.4577](#)

Flavor unification, dark matter, proton decay and other observable predictions with low-scale  $S_4$  symmetry

[1011.4202](#)

Finite-width effects in the near-threshold  $ZZZ$  and  $ZWW$  production at ILC

[1011.3606](#)

Higgs triplets at like-sign linear colliders and neutrino mixing