

## Calendar

[Have a safe day!](#)

Wednesday, Dec. 9

3:30 p.m.

DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

4 p.m.

[Fermilab Colloquium](#) - One

West

Speaker: Lee Smolin,

Perimeter Institute for

Theoretical Physics

Title: Using the Universe as a

Laboratory to Probe the Planck

Scale

Thursday, Dec. 10

10:30 a.m.

[Particle Astrophysics Seminar](#)

- One West

Speaker: Aaron Manalaysay,

Physik Institut Universität

Zürich

Title: The Physics of Liquid

Xenon Dark Matter Detectors

2:30 p.m.

[Theoretical Physics Seminar](#) -

Curia II

Speaker: Tao Liu, University of

Chicago

Title: Prospects for MSSM

Higgs Searches at the

Tevatron and LHC

3:30 p.m.

DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

4 p.m.

[Accelerator Physics and  
Technology Seminar](#) - One

West

Speaker: Robert Welton, Oak

Ridge National Laboratory

Title: Next-Generation H<sup>-</sup> Ion

Sources for SNS

Click here for [NALCAL](#),

a weekly calendar with

links to additional

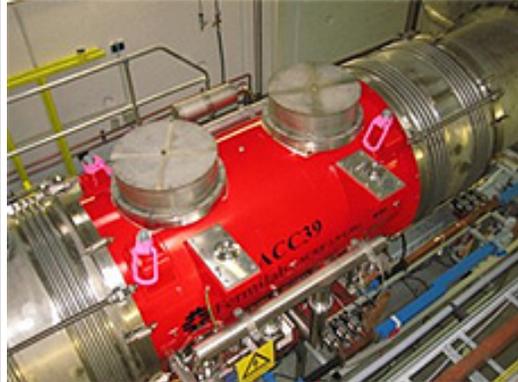
information.

[Upcoming conferences](#)

Campaigns

## From DESY

### Collaboration gets high grade for third-harmonic module



The Fermilab-built ACC39 module with the coupler vacuum and wave guide systems assembled in the Cryo-Module Test Bench (CMTB) at DESY.

The 260-meter-long free-electron laser FLASH at DESY is currently undergoing a major upgrade. One of the crucial new components in the superconducting linear accelerator of FLASH is a superconducting module operating at 3.9 GHz, three times the normal accelerating frequency. This third-harmonic module, built by Fermilab, now has passed extensive tests. Once installed and in operation, it will form narrower electron bunches within the FLASH accelerator, leading to brighter FEL light.

The RF system test with the module at DESY's cryomodule test bench showed a very promising performance. The four superconducting cavities in the module have been operated with an average acceleration gradient of 23 MV/m, exceeding the design value of 14 MV/m by 65 percent. Furthermore, the RF stability achieved by digital control surpasses the requirements of FLASH, which are regarded as very challenging.

The module will improve significantly the performance of the FLASH facility, which is restarting in spring 2010. The benefit is a more efficient bunch compression, which provides more flexibility in the bunch parameters for the FEL process.

[Read more](#)

## In Memoriam

## From the CMS Center

### CMS says hello to the $\pi^0$

*Lothar Bauerdick, director of the CMS Center at Fermilab, wrote this week's column.*

The past weeks have been amazing and intense for most of us in CMS. I'm writing this column on my flight to Geneva, very much looking forward to a week of meetings in which we will discuss the first results of the initial collision data taken with



Lothar Bauerdick

the CMS detector. A few weeks back, we finally got a first glimpse of high-energy proton-proton collisions. What a difference a few collisions can make: During the last year CMS recorded 300 million events of cosmic muons and wrote 23 papers on this cosmic data. But the data from the first few hundred proton-proton collisions are so much more fascinating! CMS went into 24/7 operations at the end of October, and things have been busy ever since. In the second week of November, we used the LHC injection test and beam splash events to synchronize the CMS subdetectors and set the trigger timing. Then, on Nov. 20, LHC operators established circulating beams. Three days later we saw the first collisions.

CMS collected some hundred collision events with a minimum-bias trigger, requiring the calorimeter to detect at least a small amount of energy to trigger the readout of the entire detector. We established the first signal for a well-known particle, the neutral pion  $\pi^0$ . Its mass peak is very visible in the distribution of pairs of photon clusters reconstructed in the electromagnetic calorimeter.

Last week, the accelerator operators raised the beam energies to 1.18 TeV, exceeding the beam energies of the Tevatron for the first time. This weekend, the machine ran in collision mode again with beams at 450 GeV, but with more bunches. CMS collected 3 million triggers and some 6,000 good minimum-bias events, with the detector operating with full magnetic field. Our collaboration eagerly studied those "golden" events. The tracking teams at CERN and at Fermilab found the first fully measured particle

[Take Five](#)[Tune IT Up](#)[H1N1 Flu](#)

For information about H1N1, visit Fermilab's flu information [site](#).

[Weather](#)

Snow  
31°/4°

[Extended Forecast](#)  
[Weather at Fermilab](#)
[Current Security Status](#)[Secon Level 3](#)[Wilson Hall Cafe](#)

Wednesday, Dec. 9

- Breakfast: English muffin sandwich
- Beef barley soup
- Gyros
- Caribbean-grilled salmon
- Corned beef
- Beef and cheddar panini
- Assorted slices of pizza
- Grilled chicken bowtie with tomato cream

[Wilson Hall Cafe Menu](#)[Chez Leon](#)

Wednesday, Dec. 9

- Lunch
- Salmon Wellington
  - Parmesan orzo
  - Lemon pound cake with blueberry sauce

Thursday, Dec. 10

- Dinner
- Chestnut soup
  - Lobster medallions with champagne butter sauce
  - Spaghetti squash with scallions
  - Steamed green beans
  - Eggnog cheesecake with bourbon cream

**Joe Leo**

Joe Leo and Kathy Graden at a fundraising event in October. The event raised money to buy handicapped-accessible equipment.

Joe Leo, who worked in the ES&H section for 26 years, died Sunday. He was 53.

As a radiological control technician, Leo's primary job was preparing waste for shipping or storage. Leo also was Fermilab's sealed source technician; he maintained and inventoried Fermilab's calibration sources for use in the laboratory's high-energy physics experiments.

His supervisor Billy Arnold said Leo's frequent visits around the laboratory made him a familiar face.

"He seemed to pretty much become friendly with anyone within minutes," Arnold said. "He was just a great talker and very comfortable discussing almost anything with anyone."

Leo had been a self-motivated and meticulous worker, Arnold said. With so many years of experience, Leo could offer scientists useful background information about calibration sources.

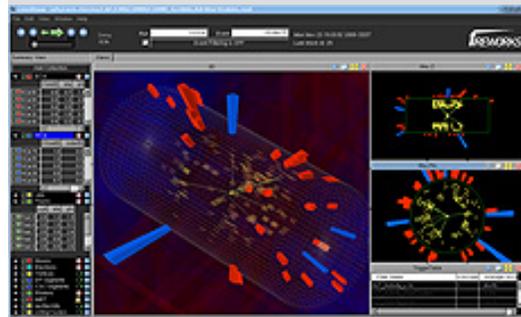
"When physicists needed something, he just knew what type of materials they would need," said Martha Michels, ES&H deputy head.

Leo was unable to return to work since March, when a skiing accident in Wisconsin paralyzed him from the chest down. Before the accident, Leo was active outdoors and had been a member of Fermilab's volleyball team, bowling team and golf league.

Colleagues made frequent visits to Leo after the accident and in August attended a charity event to raise money for making his home more accessible. Nancy Grossman, head of the ES&H section, said Leo showed his strength and kindness before and after the accident.

tracks, studied the beam spot and identified candidates for electrons, muons and jets.

For my trip to CERN, I was able to put the complete sample of CMS collision events on my laptop so that during my flight I could look at them with the CMS event display and play with the data. Soon, I won't be able to do that anymore. We expect a deluge of CMS data to start pouring in.



An event display in the CMS detector on Nov. 23. From *symmetry breaking*

**The latest from the LHC**

Last night the first collisions of protons at the world-record energy of 2.36 TeV (1.18 TeV per beam) were recorded by the ATLAS experiment at CERN. The ATLAS team posted an image of [one candidate collision event](#) on its Web site.

In addition to setting world records – for [proton beam energy](#) on November 29, and last night for proton collision energy – the team operating the Large Hadron Collider at CERN, and the teams operating the LHC experiments, have been hard at work. Here are a few more highlights from the last week and a half.

One of the main objectives for the LHC team over the past week and a half has been preparing to circulate and collide beams at higher intensities. This involves increasing the number of bunches that make up each LHC beam as well as the number of protons in each bunch.

[Read more](#)

**Safety Update**

[Chez Leon Menu](#)

Call x3524 to make your reservation.

[Archives](#)[Fermilab Today](#)[Result of the Week](#)[Safety Tip of the Week](#)[CMS Result of the Month](#)[User University Profiles](#)[ILC NewsLine](#)[Info](#)[Fermilab Today](#)

is online at:

[www.fnal.gov/today/](http://www.fnal.gov/today/)

Send comments and suggestions to:

[today@fnal.gov](mailto:today@fnal.gov)

Visit the Fermilab [home page](#)

"Young people have that sparkle in their eyes, and Joe still had that sparkle," Grossman said. "Whenever people met with him, he could make them smile."

Visitation will take place today from 3-9 p.m. at Williams-Woodward Funeral Home at 820 Pine St. in West Chicago. Funeral services will take place at 10:30 a.m. Thursday at Immanuel Presbyterian Church at 29W260 Batavia Road in Warrenville.

— *Chris Knight*

[Special Announcement](#)

### Phishing alert: don't open "carbon nanotube" e-mail

Several laboratory employees recently reported receiving an email with the subject line "Carbon Nanotubes Ceramic Fibers" from the e-mail address ajohnh@umich.edu.

It is a phishing e-mail, not a legitimate message. So if you find it in your inbox, please do not open the attachment. If you do, your machine will be compromised.

Please note that the author information is valid, so it is very difficult to recognize this as phishing. If you receive an e-mail from someone you don't know, do not open any attachments without contacting the sender by phone or through a different, valid e-mail address to verify what the file is and why they sent it.

Even if a message looks like it came from someone you know, make sure the content "feels" right before you open any attachments. When in doubt, contact the sender to verify.

— *Mark Leininger, computer security manager*

## ES&H weekly report, Dec. 8

This week's safety report, compiled by the Fermilab ES&H section, includes one non-recordable injury. The injury occurred when a contractor pulled his calf muscle while pushing a spool of wire. We have now worked 47 days since the last recordable injury. Find the full report [here](#).

[Safety report archive](#)

[Announcements](#)

### Latest Announcements

[Barn Dance - Dec. 13](#)

[English Country Dancing - Jan. 3](#)

[Give the gift of movies](#)

[Book atrium events through the Office of Communication](#)

[FMLA and FTL policy updates](#)

[Wilson Hall stocking stuffer holiday sale - Dec. 9-10](#)

[Gay, Lesbian or Bisexual Employees at Fermilab - information meeting Dec. 10](#)

[Gallery talk by Peter Olson - Dec. 11](#)

[Register for Quigg symposium - Dec. 14-15](#)

[Free introductory martial arts classes - Dec. 14 and 16](#)

[Fermilab blood drive - Dec. 15-16](#)

[Inaugural potluck party - Dec. 16](#)

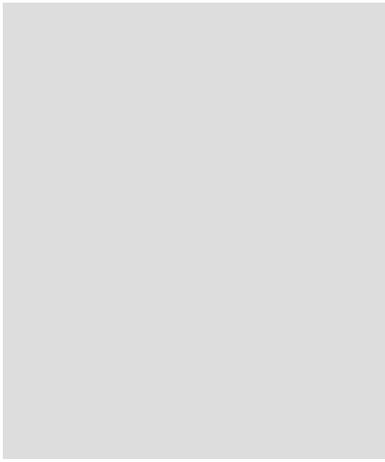
[Tell us about your Take 5 moment by Dec. 16](#)

[Fermilab Management Practices seminar beginning Feb. 11](#)

[Sign up for spring Science Adventures classes](#)

[Argentine Tango at Fermilab meets Wednesday nights](#)

[Prescription eyewear technician](#)



[location change](#)

[Lederman Science Center holiday hours](#)

[Discount movie tickets available](#)

[Chicago Blackhawks discount tickets](#)

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