

Calendar

[Have a safe day!](#)

Friday, Dec. 18

3:30 p.m.

DIRECTOR'S COFFEE BREAK - 2nd
Flr X-Over

THERE WILL BE NO JOINT
EXPERIMENTAL-THEORETICAL
PHYSICS SEMINAR TODAY

Monday, Dec. 21

THERE WILL BE NO PARTICLE
ASTROPHYSICS SEMINAR THIS
WEEK

3:30 p.m.

DIRECTOR'S COFFEE BREAK - 2nd
Flr X-Over

4 p.m.

All Experimenters' Meeting - Curia II

Special Topics: Crystal Collimator
Studies in the Tevatron (T-980); CMS/
LHC Report

[Click here](#) for NALCAL,
a weekly calendar with
links to additional
information.

[Upcoming conferences](#)

Campaigns

Take Five

Tune IT Up

H1N1 Flu

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

Weather



Rain/snow
32°/29°

[Extended Forecast Weather at Fermilab](#)

Current Security Status

Feature

CDMS "opens the box," reveals results



Curious researchers and science enthusiasts filled One West and Curia II conference rooms Thursday to hear the results from the Cryogenic Dark Matter Search experiment.

In the analysis of new data, scientists from the Cryogenic Dark Matter Search experiment, managed by the Department of Energy's Fermi National Accelerator Laboratory, have detected two events that have characteristics consistent with the particles that physicists believe make up dark matter.

However, there is a chance that both events could be the signatures of background particles – other particles with interactions that mimic the signals of dark matter candidates. Scientists have a strict criterion when determining whether a discovery has been made. There must be less than one chance in 1,000 that the observed events could be due to background. This result does not yet pass that test, so CDMS experimenters do not claim to have detected dark matter. Nevertheless, the result has caused considerable excitement in the scientific community.



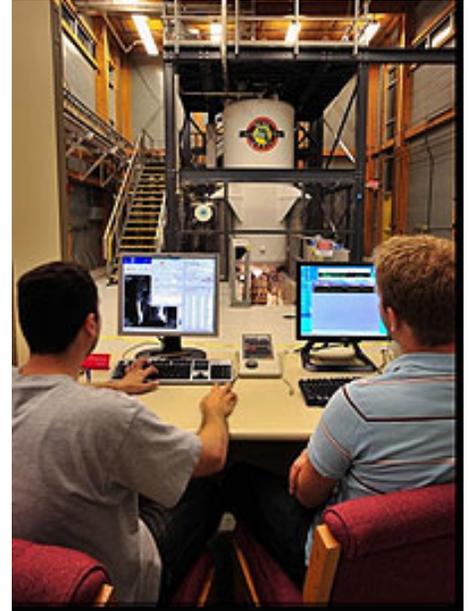
CDMS researcher Lauren Hsu announced the CDMS experiment's results at a talk Thursday.

"This is a very intriguing result. We really don't know if this is a background or a signal," said Lauren Hsu, a CDMS researcher at Fermilab who announced the experiment's results in a talk at Fermilab on Thursday. "As an experimenter you always wish you had more data. I'm really interested to see what our next results will be."

The collaboration details the results in a paper "Results from the Final Exposure of the CDMS II Experiment," that they have submitted to the

Recovery Act Feature

New superconductor will put collaborators to the test



The National High Magnetic Field Laboratory at Florida State University is a member of the Very High Field Superconducting Magnet Collaboration. Scientists use the lab at FSU to advance technologies such as magnetic resonance imaging. *Photo courtesy of the National High Magnetic Field Laboratory*

At 50 Tesla, a magnet wants to blow itself apart. By understanding the materials in that magnet, scientists working in the [Very High Field Superconducting Magnet Collaboration](#) hope to keep it together.

"The energy density of these magnets is getting in the vicinity of dynamite," said collaboration spokesperson David Larbalestier, a scientist at the National High Magnetic Field Laboratory at Florida State University. "Dynamite is safe unless used unsafely, so that's the goal here. We need to understand what we're dealing with."

This collaboration, which spans seven institutions, is looking at novel and complex wires containing a brittle superconducting material called [BSCCO2212](#). Scientists say it's necessary for the next generation of accelerators and could result in cutting-edge technologies for other applications in industry and medicine. The American Recovery and Reinvestment Act funded the first year of the project starting last summer with \$2 million.

Larbalestier and Fermilab's Alvin Tollestrup recruited top researchers, then wrote a proposal that would tap into each laboratory's strengths. The collaboration is unique

[Secon Level 3](#)[Wilson Hall Cafe](#)

Friday, Dec. 18

- Breakfast: chorizo burrito
- Chunky vegetable soup w/orzo
- Buffalo chicken wings
- Cajun breaded catfish
- Teriyaki pork stir-fry
- Honey mustard ham & Swiss panini
- Assorted sliced pizza
- Carved turkey

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

Wednesday, Dec. 23

Lunch

- Closed

Thursday, Dec. 24

Dinner

- Closed

[Chez Leon menu](#)

Call x3524 to make your reservation.

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

is online at:
www.fnal.gov/today/

Send comments and suggestions to:
today@fnal.gov

Visit the Fermilab
[home page](#)

physics preprint Arxiv for publication.

"While this result is consistent with dark matter, it is also consistent with backgrounds," said Fermilab Director Pier Oddone. "In 2010, the collaboration is installing an upgraded detector (SuperCDMS) at Soudan with three times the mass and lower backgrounds than the present detectors. If these two events are indeed a dark matter signal, then the upgraded detector will be able to tell us definitively that we have found a dark matter particle."

[Watch a video](#) of the CDMS talk at Fermilab.

[Read more](#)

[Ask the Ethicist](#)

Holidays and contractor gratuities

Gary Leonard, Fermilab General Counsel, wrote this column.

As the holidays of December and January draw upon us, it is common for business associates to send gifts to valued customers. I take this opportunity to remind all of you that acceptance of a gift or gratuity from a prospective or current Fermilab vendor is against laboratory policy. Generally, the laboratory's [code of conduct](#), found in the [Director's Policies Manual](#), clearly states that: "Employees shall not accept any gratuity, gift or special favor from individuals or organizations ..."

The general rule is that you should refuse or return gratuities and gifts. The reason for this rule and the laboratory's policy on this issue is that Fermilab, as a government-funded laboratory, wishes to avoid any appearance of impropriety (such as favoritism) due to the acceptance of a gratuity or gift from a current or prospective contractor. As recipients of public funding, we must do all we can to ensure that we earn the highest degree of public trust. The laboratory policy on gratuities and gifts is there to help guide us in earning that trust.

Please feel free to [Ask the Ethicist](#) if you have a question concerning this policy either as it pertains to holiday gratuities and gifts or to any gratuity and/or gift.

-- Gary Leonard, Fermilab general counsel

[Recreation Feature of the Month](#)

because it brings together a diverse and complementary team of material scientists, physicists, magnet experts and engineers.

"You need to develop a culture in which one can put the hardest views on the table, avoid personalization of disagreement and concentrate on understanding these materials," Larbalestier said.

While prior high-temperature superconductor research has focused on electricity transmission, this project is the first to be magnet-driven, said Bruce Strauss, General Accelerator Development program manager for the Department of Energy.

BSCCO2212 is much more difficult to work with than today's malleable niobium-titanium superconductors. For example, no one knows the optimal way to heat and cool the material, so scientists will run a statistically designed experiment with the dozens of variables that could affect the superconductor, said collaborator Ken Marken from Los Alamos National Laboratory.

"In a sense, it's trial and error, but you also get a bit more useable results," Marken said.

So, which collaborator will have the toughest job?

Tollestrup puts it bluntly: "All of them, and that's the challenge."

-- Chris Knight

[Special Announcement](#)

DOE releases laboratory report cards

The Department of Energy has posted the annual grades for its national laboratories. View Fermilab's FY2009 laboratory performance [report card](#).

[View](#) all laboratories' grades.

[Read more](#) about the grading process.

[In the News](#)

Classes, events and discounts for January

RECREATION

CLASSES

Kyuki Do Class
Mondays & Wednesdays, January 4 - February 10
Recreation Facility, 5-6 p.m.
Fee: \$55/person

Muscle Toning Class
Tuesdays & Thursdays, January 5 - February 25
Recreation Facility, 5:30-6:30 p.m.
Fee: \$77/person

Yoga Class
Tuesdays, January 12 - March 2
Wilson Hall Auditorium, noon - 1 p.m.
Fee: \$85/person

Tai Chi Class
Thursdays, January 14 - April 1 (no class March 4)
Users' Center Music Room, 4:45-5:30 p.m.
Fee: \$65/person

Butts and Guts Class
Mondays, January 25 - March 15
Recreation Facility, noon - 12:45 p.m.
Fee: \$53/person

WELLNESS

Lunch & Learn: Glaucoma... A Silent Disease
Thursday, January 21, Wilson Hall, Curia II, 2nd floor, noon - 1 p.m.
Presenter: Dr. Ben Castillo

Weight Watchers at Work Program
Wednesdays, December 23 or 30, Wilson Hall, 15W, Aquarium, noon - 1 p.m.

CLUBS

Toastmasters
Thursdays, January 7 and 21, Wilson Hall, 15th Floor, Aquarium, noon - 1 p.m.

Sustainable Energy Club
Tuesdays, January 19, Users' Center Music Room, 5:10 p.m.

ATHLETIC LEAGUES

Open Badminton
Wednesdays, 11 a.m. - 1 p.m., Recreation Facility Gym. Contact achou@fnal.gov

DISCOUNTS

Movie Tickets
Special rates for members and users.

Trail Usage
Special rates for members and users.

Fermilab | Energy

Fitness classes starting soon:

- Kyuki Do: Mondays & Wednesdays, Jan. 4 – Feb. 10, Recreation Facility, 5-6 p.m. Fee: \$55/person
- Muscle Toning Class: Tuesdays & Thursdays, Jan. 5 – Feb. 25, Recreation Facility, 5:30-6:30 p.m. Fee: \$77/person
- Yoga: Tuesdays, Jan. 12 – March 2, Wilson Hall Auditorium, noon – 1 p.m. Fee: \$85/person
- Tai Chi for Health: Free Trial Class on Thursday, Jan. 14, Users' Center Music Room. Classes held Thursdays, Jan. 21 – Apr. 1 (no class March 4), Users' Center Music Room,

4:45-5:30 p.m. Fee: \$65/person.

- NEW! Butts & Guts: Tired of doing the same basic crunches and sit-ups? This strength training workout focuses on increasing flexibility and strengthening the abdominal area. Participants learn a variety of exercises designed to increase core strength, which benefits daily activities. Suitable for any fitness level. Mondays, Jan. 25 – March 15, Recreation Facility, noon – 12:45 p.m. Fee: \$53/person.

This month, the Benefits/Recreation Department will also sponsor the following wellness events:

- Weight Watchers at Work Program: Meetings held on Wednesdays through Feb. 10 from noon-1 p.m. in Wilson Hall, 15W, Aquarium. Join anytime. No onsite meetings Dec. 23 or Dec. 30.
- Lunch & Learn about "Glaucoma...A Silent Disease": Thursday, Jan. 21, Wilson Hall, Curia II, 2nd floor, noon – 1 p.m. Presenter: Dr. Ben Castillo.

Club meetings:

- Toastmasters: Thursday, Jan. 7, Wilson Hall, 15th Floor, Aquarium and Jan. 21, Wilson Hall One North. Meetings are scheduled from noon – 1 p.m. [Learn more](#)
- Sustainable Energy Club: Tuesday, Jan. 19, Users' Center Music Room, 5:10 p.m.

Athletic leagues:

Open badminton: Wednesdays, 11 a.m. – 1 p.m., Recreation Facility Gym. Contact achou@fnal.gov.

Employees and users can also contact the Recreation Department to take advantage of special discounts,

LHC ends 2009 run on a high note

From *Interactions.org*, Dec. 18, 2009

Geneva, 18 December 2009. At its 153rd session today, the CERN Council heard that the Large Hadron Collider ended its first full period of operation in style on Wednesday 16 December. Collisions at 2.36TeV recorded since last weekend have set a new world record and brought to a close a successful first run for the world's most powerful particle accelerator. The LHC has now been put into standby mode, and will restart in February 2010 following a short technical stop to prepare for higher energy collisions and the start of the main research programme.

The LHC circulated its first beams of 2009 on 20 November, ushering in a remarkably rapid beam-commissioning phase. The first collisions were recorded on 23 November, and a world-record beam energy was established on 30 November. Following those milestones, a systematic phase of LHC commissioning led to an extended data-taking period to provide data for the experiments. Over the last two weeks, the six LHC experiments have recorded over a million particle collisions, which have been distributed smoothly for analysis around the world on the LHC computing grid.

[Read more](#)

Announcements

Latest Announcements

[Barn Dance Dec. 20](#)

[Atrium events - book through Office of Communication](#)

[Lederman Science Center holiday hours](#)

[International folk dancing meets Jan. 7](#)

[Scottish country dancing will meet every Tuesday through December](#)

[TTIAA-CREF Financial Education Seminar - Dec. 21](#)

[Fermilab December Payroll Information](#)

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

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

including:

- Thai Village restaurant: \$7 Fermilab lunch menu. Menus available in the Recreation Office or [online](#).
- AMC and Goodrich Theater tickets: AMC anytime tickets \$8. AMC two-week restriction tickets \$7. Goodrich anytime tickets \$7.

[Process Piping Materials, Fabrication, Examination & Testing \(ASME B31.3\) class offered in Feb. 3-4](#)

[East gate to begin closing 1-5 a.m. beginning Jan. 5](#)

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

[Python Programming class offered Feb. 24-16](#)

[Give the Gift of Movies](#)

[Chicago Blackhawks Discount Tickets](#)

[FMLA and FTL Policy Updates](#)

[Prescription Eyewear Technician – Location Change](#)

[Prescription Eyewear Technician – Location Change](#)

[Additional Activities](#)

[Submit an announcement](#)

Classifieds

Find new [classified ads](#) on *Fermilab Today*.