

Calendar

Thursday, February 16

11:00 a.m. Academic Lecture Series - Auditorium (note location)

Speaker: B. Kayser, Fermilab

Title: The New World of Neutrino Physics – Part IV (4th Lecture)

2:30 p.m. Theoretical Physics Seminar - Theory Conf Rm (WH-3NE)(note location)

Speaker: R. Hill, Fermilab

Title: Flavor Physics as a Probe of QCD

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

4:00 p.m.

Accelerator Physics and Technology Seminar - 1 West

Speaker: E. Zaplatin,

Forschungszentrum Juelich

Title: FZJ Superconducting RF Cavities

Friday, February 17

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

4:00 p.m. Joint Experimental Theoretical Physics Seminar - 1 West

Speaker: S. Eno, University of Maryland

Title: The Fermilab LHC Physics Center

*** Announcement ***

Heartland Blood Centers will be here for the Fermilab Blood Drive on February 20 and 21 from 8:00 A.M. to 2:00 P.M. in the Wilson Hall Ground Floor NE Training Room. Appointments can be scheduled on the [web](#) or by calling Lori at x6615.

Weather

Cooling Tower Installed as Final Compressor Upgrade



A 30-ton cooling tower for CHL is unloaded from a tractor trailer prior to installation.

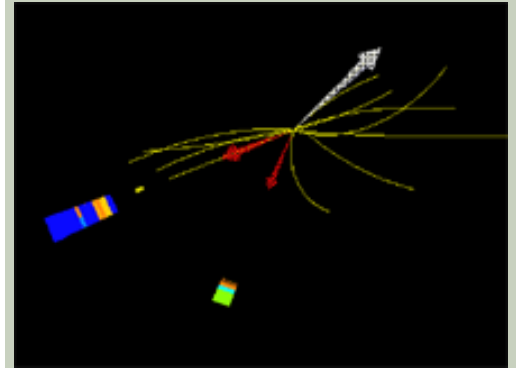
(Click on image for larger version.)

The Central Helium Liquifier (CHL) is one of those facilities that doesn't get much attention as long as it's running smoothly--and CHL has been running smoothly for so long, it's easy to forget that experiments at CDF or DZero would be impossible without it. Even during upgrades, this facility, responsible for supplying liquid helium and nitrogen to cool the superconducting magnets of the Tevatron accelerator, keeps on running.

The most recent upgrade, the installation of a 30-ton cooling tower on Feb. 2, went off without a hitch. This installation replaced a helium cooling tower that was almost 30 years old and was the last of the four towers to be upgraded. "Mike Geynisman and Mike Hentges did a great job in coordinating the job with the subcontractor, RAM Mechanical Services Inc., to get the equipment delivered and installed in a very safe manner, during normal plant operations," says Jerry Makara, group leader. Subcontractors fitted the large tower between operating equipment in a somewhat delicate procedure using a 300-ton crane.

Fermilab Result of the Week

W Bosons light up the Standard Model



An event display of a W boson - photon event taken with the DZero detector. (Click on images for larger version.)

Particle physics is the science that attempts to understand the basic building blocks of matter and the interactions that govern their behavior. Numerous experiments, and years of research, have led to a very successful theory called the Standard Model. In the Standard Model matter is made of quarks that interact by exchanging particles called bosons.

The interaction of one of these bosons, the W, with another, the photon, is being studied with the DZero experiment. By doing so, particle physicists are testing the structure of the theory that describes their interactions. The Standard Model describes exactly how the W boson and photon interact. If something unexpected is observed, then the Standard Model is incorrect, and a new theory must be found.

The Tevatron collider at Fermilab smashes beams of protons and antiprotons together. In these collisions, the quarks (from the protons) annihilate

Rain/Sleet **38°/18°**[Extended Forecast](#)[Weather at Fermilab](#)**Current Security Status****Secon Level 3****Wilson Hall Cafe****Thursday, February 16**

- Tomato Florentine
- Grilled Chicken Cordon Bleu Sandwich
- Chimichangas
- Chicken Marsala
- Smoked Turkey Melt
- Italian Sausage Calzones
- SW Chicken Salad w/Roasted Corn Salsa

[Wilson Hall Cafe Menu](#)**Chez Leon****Thursday, February 16****Valentine's Day Dinner**

- Red Pepper Souffle w/Julienne of Zucchini
- Lobster Medallions w/Champagne Butter Sauce
- Green Beans w/Dill
- Lemon Grass Rice
- Chocolate Hearts w/Raspberry Sauce

Wednesday, February 22**Lunch**

- Asian Marinated Flank Steak
- Jasmine Rice
- Pea Pods & Water Chestnuts
- Orange Flan

[Chez Leon Menu](#)

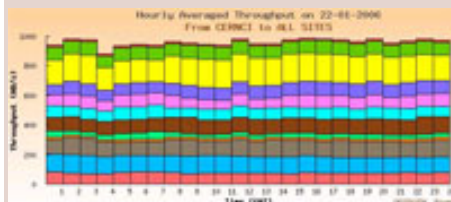
Call x4512 to make your reservation.

Search

The last of other big upgrades for CHL will involve updating computer hardware in the process control system during the upcoming accelerator shutdown. Though CHL has not contributed to any "official" accelerator downtime for the past 3 years, these upgrades will assure that this facility will continue to be a showpiece of safety and reliability at the laboratory for the remaining years of Run II.

Despite CHL's reputation as the largest helium liquefier plant in the world--it has the capacity to liquefy up to 6,300 liters per hour--Makara likes to keep things in perspective. "New equipment is great," he says, "but our staff and technicians are the ones who really keep things running for the facility."

— Dawn Stanton

Science Grid This Week**Global Grid Service Meets Gigabyte-Per-Second Challenge**

Data transfer from CERN to 12 major computing centers during the challenge.

In a breakthrough for scientific grid computing, the Worldwide LHC Computing Grid (WLCG) collaboration officially announced the successful completion of a service challenge that sustained a continuous flow of physics data on a worldwide grid infrastructure at rates of up to one gigabyte per second. The maximum sustained data rates achieved correspond to transferring one DVD's worth of scientific data every five

antiquarks (from the antiprotons) to produce new particles, which can then be studied. Sometimes the quark and antiquark annihilate to produce a W boson which then radiates a photon, providing a means by which physicists can study the actual W-photon interaction. In this study the scientists examined the spectrum of energies of the photons produced in this way, and compared this to the predictions of the Standard Model.

The data are in excellent agreement with the Standard Model. The Tevatron continues to produce record amounts of data and the DZero team plans to continue studying this process in ever greater precision. It is only by testing our theories to ever higher degrees of precision that we can hope to further our understanding of nature.



Above, left to right: Adam Lyon (Fermilab), Greg Pawloski (Rice University) and Rice University graduate student Andrew Askew (now a Postdoc at Florida State), who worked on this analysis as part of his Ph.D., are looking at this interaction.



Right: Penny Kasper (FNAL) has made important contributions to the operation of the muon system used in many physics analyses – including this one.

[Result of the Week Archive](#)**Accelerator Update**

Search the Fermilab Today Archive

Info

Fermilab Today is online at: <http://www.fnal.gov/today/>

Send comments and suggestions to today@fnal.gov

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seconds.

The data were transferred from CERN in Geneva, Switzerland to 12 major computer centers around the globe. Over 20 other computing facilities were also involved in successful tests of the global grid service for real-time storage, distribution and analysis of particle physics data. The completion of this challenge is a key milestone on the way to establishing the necessary computing infrastructure for the Large Hadron Collider (LHC), the world's largest scientific instrument, scheduled to start operation in 2007.

[Read More](#)

In the News

**From *The Courier News Online*, February 16, 2006:
Jane Wilson, 89, wife of Fermilab founder, passes on**

BATAVIA — They came from the top laboratories and colleges all over the world. And when the physicists, the most brilliant minds of their day, arrived in Batavia, they were faced with 6,800 acres of long, empty farm fields.

Robert Wilson, a former Princeton professor, needed to convince these men the future was in that prairie. As the first director of Fermi National Accelerator Laboratory, Wilson had to show them they could live and work in the Fox Valley.

Luckily, at Robert's side, was a great saleswoman: his wife, Jane. According to those who knew her, it was Jane Wilson who turned open land into a place where physics and families could flourish.

February 13 - 15

- Two stores provided 41 hours and 26 minutes of luminosity.
- MCenter running without analyzing magnet.
- Store 4642 quenched.

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Announcements

New issue of *symmetry*

The February issue of *symmetry* is now available [online](#).

Prairie Restoration

Do you love seeing the flowers and grasses come up in the Spring in the Fermilab Prairie? You can be a part of Fermilab Prairie Restoration by helping out the Habitat Restoration group this Saturday, February 18. We plan to remove invasive brush in the area between Wilson Hall and the Lederman Science Center. We meet at 9 a.m. in the Ledermann Science Center parking lot for water/coffee and donuts before we start work, and finish around noon. Please dress for the weather, we will cancel only if there is a blizzard! We meet the third Saturday of every month, weather permitting. Please see our [Website](#) for more information.

International Folk Dancing

International Folk Dancing will meet Thursday, February 16, at Kuhn Barn on the Fermilab site. Dancing begins at 7:30 p.m. with teaching and children's dances earlier in the evening and request dancing later on. Newcomers are welcome and you do not need to come with a partner. Info at 630-584-0825 or 630-840-8194 or folkdance@fnal.gov.

"I think with some people it's called Bob's greatest work," said Fermilab archivist Adrienne Kolb. "Jane supported all of it."

Jane Wilson, 89, died Tuesday in Ithaca, N.Y., from congestive heart failure.

[Read More](#)

[Upcoming Activities](#)