

Calendar

Thursday, November 18

11:00 a.m. Research Techniques

Seminar - Curia II

Speaker: M. Ronan, Lawrence Berkeley National Laboratory

Title: Micromegas TPC R&D for the ILC

2:30 p.m. Theoretical Physics Seminar - Curia II

Speaker: S. Riemann, DESY Zeuthen

Title: Z' Signatures in Precision

Measurements

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY

Friday, November 19

3:30 DIRECTOR'S COFFEE BREAK -

2nd Flr X-Over

4:00 Joint Experimental Theoretical

Physics Seminar - 1 West

Speaker: D. Waters, University College

London

Title: Study of Diboson Production at CDF

Wilson Hall Cafe

Thursday, November 18

Minnesota Wild Rice w/Chicken

Tuna Melt on Nine Grain \$4.75

Breaded Veal w/Mushroom Cream Sauce \$3.75

Sweet & Sour Pork over Rice \$3.75

BLT Ranch Wrap \$4.75

Cheesy Breadsticks \$2.25

Winter Mix Salad \$4.75

[Wilson Hall Cafe Menu](#)

[Chez Leon](#)

All-Hands Meeting Friday at 1:30 p.m. to Introduce New Fermilab Director

There will be an All-Hands Meeting on Friday at 1:30 p.m. in Ramsey Auditorium, to introduce the new Director of Fermilab. A live broadcast of the meeting will be shown in One West and in the cafeteria area of the Atrium. The meeting will also be available on streaming video.

Illinois Governor's Pollution Prevention Award Winner



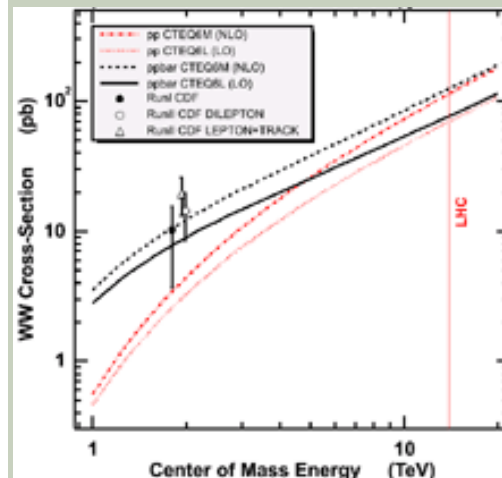
Governor's Pollution Prevention Award (Click on image for larger version.)

Fermilab won the Illinois Governor's Pollution Prevention award for implementing a [nitrogen recovery system](#) at DZero last year which resulted in substantial energy savings. A group of Fermilab and DOE representatives attended a banquet in Glen Ellyn on Oct. 21, where they received the award from Lt. Gov. Pat Quinn.

The new system, in place since the fall 2003 shutdown, cuts down on the consumption of liquid nitrogen used at DZero. The central fiber tracker at the heart of the DZero detector uses Visible Light Photon Counter devices that are

Fermilab Result of the Week

Double the Trouble: Weak and Heavy



CDF measurements of the W-pair production cross-section, compared to theoretical expectations. (Click on image for larger version.)

Pairs of massive electroweak gauge bosons, the particles responsible for the weak nuclear force, can be created in high energy proton-antiproton collisions. Measuring the rate of diboson production is an important test of the Standard Model of particle physics. As well as being a background for top quark production, any enhancement of the rate of diboson production could also herald new physics such as the production of Higgs bosons.

Physicists from the US (Duke University, Fermilab, University of Pennsylvania), Canada (Toronto) and the UK (University College London) have used different analysis strategies to study heavy diboson production, using 200 inverse picobarns of data collected by the CDF detector.

The W pair production cross section has been measured using the channel in which both W bosons decay to a lepton

Weather



Chance Sprinkles **61°/48°**

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

[Secou Level 3](#)

Search

[Search the Fermilab Today Archive](#)

Info

Fermilab Today is online at:

<http://www.fnal.gov/today/>

Send comments and suggestions to

today@fnal.gov

[Fermilab Today archive](#)

[Fermilab Today PDF Version](#)

[Fermilab Result of the Week archive](#)

[Fermilab Safety Tip of the Week archive](#)

[Linear Collider News archive](#)

[Fermilab Today classifieds](#)

[Subscribe/Unsubscribe to Fermilab Today](#)

cooled with liquid nitrogen and liquid helium. Keeping the VLPC's at proper temperature requires 50 gallons per hour of liquid nitrogen. 30 percent of that evaporates in the process, and the remaining 70 percent used to be released in the atmosphere. The new system now recovers the leftover liquid from the exhaust and pumps it back into the cryostat, said Russ Rucinski of DZero.

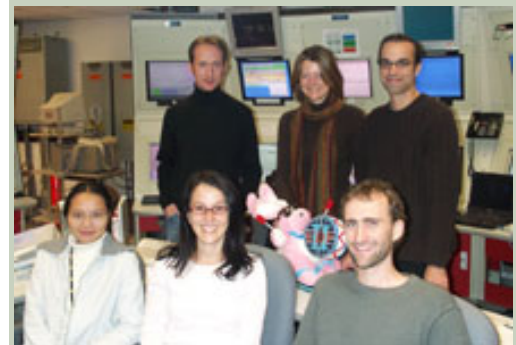
"By recovering waste that was going out, we saved a lot of money, about \$3,500 per month," Rucinski said. Although nitrogen is not a pollutant - it is the most abundant gas in the atmosphere - liquefying it and transporting it is expensive and takes considerable amounts of energy. Annual savings add up to \$42,000 per year. Rucinski and his collaborators at DZero devised and implemented the system with engineering and design support from a PPD Mechanical Department team led by Terry Tope.

The annual awards are presented by the Illinois Waste Management and Research Center to "companies and organizations in Illinois that have demonstrated a commitment to environmental excellence through the practice of pollution prevention." The WMRC is based at the University of Illinois-Urbana Champaign-see the [Web site](#) for more information. The Fermilab project was nominated by Eric McHugh of ES&H/PPD.

and a neutrino. Requiring both leptons to be well identified in the detector as electrons or muons, 17 WW candidate events were found with an expected background of 5 events. A second [analysis technique](#), based on the selection of a well measured lepton and an isolated track, tests the robustness of the previous result. Both measured cross sections agree well with the Standard Model expectation.

WZ and ZZ production is even rarer than WW production. We search in all possible leptonic decay modes and, while having too little data to observe a clear signal, nevertheless place an upper limit of 15.2 pb on the combined cross-section.

As CDF accumulates data at an increasing rate in Run II, these first observations of diboson production will rapidly increase in precision, helping us understand processes that are crucial for the physics of the LHC. Please attend Friday's Wine and Cheese Seminar for more on these analyses.



Clockwise from top left: Dave Waters (UCL), Julia Thom (FNAL), Peter Wittich (Penn), Chris Hays, Susana Cabrera, and Jianrong Deng (Duke). Also shown: CDF Energizer Bunny. Not shown: Al Goshaw, Yimei Huang, Mark Kruse, S. Carron (Duke); Dustin McGivern (UCL); P. Merkel (FNAL); Pierre Savard, Reda Tafirout (Toronto). (Click on image for larger version.)

[Result of the Week Archive](#)



Lt. Governor Pat Quinn (right) presented the award to Russ Rucinski (left) and Eric McHugh (middle). (Click on image for larger version.)

Shutdown News

Shutdown ends next week



The shutdown of the Fermilab accelerator complex ends on Wednesday, November 24. The Electron Cooling project, which originally had requested 15 weeks of work in the Main Injector tunnel, managed to successfully shorten its schedule to a little more than 13 weeks. The beam commissioning of the Main Injector is to begin on Saturday after Thanksgiving (11/27), and the first test beam to the Tevatron will be transferred on Monday, November 29.

"It will be a maximum of two weeks from the day the Tevatron sees first beam to producing useable luminosity," said Dave McGinnis, Associate Head of the Accelerator Division. "We expect the first pbar shots to the Tevatron to take place on December 7."

The CDF experiment plans to secure their collision halls by November 24, switching

Announcements

Weekly and Monthly Time Sheets Due

Weekly Time Sheets for the week ending 11/21/04 are due in Payroll by 10 AM on 11/18/04. November Leave Sheets are due in Payroll by 10 AM on 11/19/04.

Artist Reception Tomorrow Night

There will be an Artist Reception for Kinethesis artists Jim Jenkins and John Stanicek on Friday November 19 from 5-7pm in the Fermilab Art Gallery.

[more information](#)

Power Outage Schedule

Meson Tunnels and Buildings

November 18

- MS3, M03 and M04 will be without power on Thursday from 8 AM to 4:30 PM.
- Meson Detector Building West Side, Meson Test Area, and ML6 will be without power from 12 PM to 8 PM.
- MS4 Service Building, including M04, Meson Portakamps, and ML5 and ML10 will be without power from 12 PM to 8 PM.
- Meson Center/East Areas, which include ME7, MS5, MP7, MC7, MC8, MB7, MB8, and ML12A and ML13A will be without power from 4 PM to 5 PM.
- The Detector Building Crane & other cranes may also be affected by these power outages

November 19 – Friday has been reserved as a rain day to cover for any problems that might hinder any of the above work.

Travel Center Presentation: Wonders of Iceland

Collette Vacations will present a presentation on the Wonders of Iceland Vacation on Thursday, November 18 from

to Controlled Access status. "At DZero, all major shutdown tasks are being completed," said DZero's Arnd Meyer. "The detector checkout will take place before this weekend."

Since January 2004, the peak luminosity of the Tevatron has increased 100 percent. For fiscal year 2005, the average peak luminosity of all collider stores is expected to increase to $1E32$, a value achieved on July 16 for a single store. With regard to integrated luminosity, Fermilab's goal is to produce 50% more collisions than in FY 2004, with the Tevatron operating a shorter period of time because of the duration of the shutdown.

In the News

From *The Sun Batavia*, November 17, 2004

Scientific merit: Girl Scouts energized by badge project at Fermilab

By Linda Girardi

From the 15th floor of Robert R. Wilson Hall, tomorrow's scientists got a glimpse of the dizzying discoveries of particle physics.

"It feels like a high-rise," said Kristen Corcoran, 8.

The view seemed to give the youngster a new perspective on the subject of high-energy physics research, from a building design conceived by Robert R. Wilson, the first director of the Fermi National Accelerator Laboratory. Wilson Hall has often been compared with the cathedrals of France.

[Read more](#)

noon to 1:00 p.m. in 1 North. The trip will take place on August 17, 2005 for eight days, and it includes ten meals (6 Breakfasts, 4 Dinners), a guided tour and air travel for \$2,700 pp/Twin.

[Upcoming Activities](#)

