

## Calendar

**Thursday, Sept. 27**

**1 p.m.**

[ILC ALCPG Physics and Detector R&D Seminar](#) - West

Wing, WH-10NW

Speaker: C. Gatto, INFN Lecce

Title: Tracking Studies for the ILC

**2:30 p.m.**

[Theoretical Physics Seminar](#) -

Curia II

Speaker: M. Herquet,

Université Catholique de Louvain

Title: Twisted Higgs

Phenomenology at Hadron Colliders

**3:30 p.m.**

DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

THERE WILL BE NO

ACCELERATOR PHYSICS

AND TECHNOLOGY

SEMINAR TODAY

**5 p.m.**

UEC Town Hall meeting - One West

Speaker: Young-Kee Kim

Title: Fermilab Steering Group report

**Friday, Sept. 28**

**3:30 p.m.** DIRECTOR'S

COFFEE BREAK - 2nd Flr X-Over

**4 p.m.**

Joint Experimental-Theoretical

Physics Seminar - One West

Speaker: T. Wright, University of Michigan

Title: Search for Higgs Bosons

Produced in Association with b-Quarks at CDF

**8 p.m.**

[Fermilab Lecture Series](#) -

Auditorium

Speaker: Dr. Uwe Bergmann,

Stanford Linear Accelerator Center

Title: Archimedes: Ancient

Writings Under X-Ray Vision

Tickets: \$5

## Special Announcement

### Steering Group report presentation this evening

The Users Executive Committee invites all Fermilab employees and users to attend a Town Hall meeting presentation of the Fermilab Steering Group report today from 5 to 7 p.m. in One West. Deputy director Young-Kee Kim will give the presentation.

## Feature

### Pi pole replacement complete



Steel pi poles take the place of wooden ones. FESS plans to use the wood for other projects.

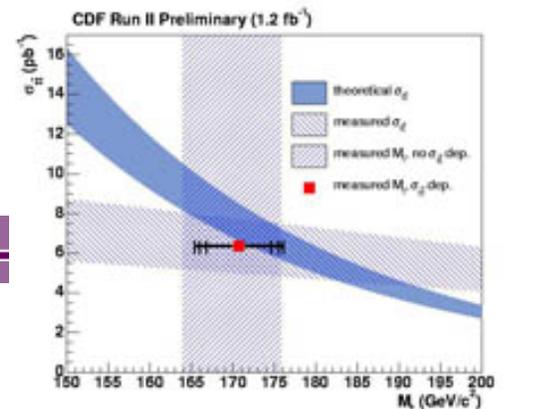
Stretching north from Wilson Hall, 18 new steel poles gleam against the skyline, ready to carry the electricity needed to run the world's highest-energy accelerator. The power poles, shaped like the physics symbol  $\pi$ , represent Fermilab's commitment to modern science and to the surrounding communities.

The city of Batavia paid for the \$4 million power-line project, as part of an agreement that lets the city run its high-voltage power lines through Fermilab property. That helped the city avoid placing new power lines near residential areas.

The laboratory received new circuit breakers installed at the north end of the lines. They give the laboratory the ability to turn off power to certain experiments without having to first

## Fermilab Result of the Week

### Does the top quark have a weight problem?



A measured cross-section of constrained top mass in a top mass - cross-section plane. The hatched areas mark the separate top mass and cross-section measurements. The blue area marks the theoretical cross-section. The CDF physicists measure a top mass of  $170.7 + 4.2 - 3.9(\text{stat}) \pm 2.6(\text{syst}) \pm 2.4(\text{theory})$  GeV/c<sup>2</sup> using 1.2 fb<sup>-1</sup> of data collected by the CDF detector.

The top quark is possibly the most fascinating particle. It is the heaviest elementary particle and its mass places constraints on the standard model Higgs boson. This correlation between the two particles prompts us to measure the mass of (or weigh) the top quark as precisely as possible.

The best way to pin something down is to look at it from as many different angles as possible and see if all measurements agree. If they don't then we know our model has a flaw.

Most current methods attack the problem of measuring the top quark mass by fitting distributions and seeing which mass fits the data best. A novel approach by CDF physicists incorporates the additional information that the lighter the mass of the top quark, the more top quarks produced. Therefore, counting the number of top quark candidates provides a constraint on the top quark mass itself.

But they did not stop here. The physicists also looked into one of the hardest channels to understand, the one that results in neutrinos in the final state. Neutrinos fly through our detectors without being noticed, leaving the

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

## Weather



Mostly sunny 74°/46°

[Extended Forecast](#)

[Weather at Fermilab](#)

## Current Security Status

[Secou Level 3](#)

## Wilson Hall Cafe

### Thursday, Sept. 27

- Tomato Florentine
- \*Grilled chicken cordon bleu sandwich
- Chimichangas
- Smart cuisine chicken marsala
- Smoked turkey melt
- Assorted slice pizza
- SW chicken salad w/roasted corn salsa

**\*Carb restricted alternative**

[Wilson Hall Cafe menu](#)

## Chez Leon

### Thursday, Sept. 27

Dinner  
Closed

### Wednesday, Oct. 3

- Crepes w/ham & gruyere w/ Madeira cream
- Marinated vegetable salad
- Baked apples w/crème Chantilly

[Chez Leon menu](#)

Call x4598 to make your reservation.

## Archives

contact Commonwealth Edison, FESS's Steve Krstulovich said.

Wires and cables stretch across the new metal poles. On Sept. 29, the lines will crackle with energy.

The new pi poles closely resemble the original ones designed by the laboratory's first director Robert Wilson.

"We are as close as you can possibly get to the original design," Krstulovich said.

In his quest to mix architecture and art, Wilson had the original poles specially hand crafted so that the wood curved into the top of the pi shape, a difficult task before the advent of metal electrical poles.

Krstulovich describes the poles as Wilson's "signature artwork."

The original poles lasted for nearly 40 years. Although FESS will take them down, the poles will not disappear from Fermilab. FESS plans to give the old wood new life. The original 15-foot cross arms could add flair and history to future construction projects such as picnic shelters and foot bridges, according to Randy Ortgiesen, FESS department head.

As for the steel poles, Krstulovich says "the new ones will last at least a century."

-- Haley Bridger

## From iSGTW

### What is a grid? A crash course in grid computing

*iSGTW has devoted an entire newsletter to science grids, but you're not even sure what one is? Get the basics on the biggest thing in information technology today.*

**What is a grid?** Grid computing is a way of connecting computing resources to share their computing power. Computer grids allow access to computing resources from many different locations, just as the World Wide Web allows access to

"signal" of such a top decay consisting of a large amount of missing information.

The relationship predicted by theory matches the measured top mass and cross-section. The top mass is consistent with all other measurements from CDF, but more importantly the technique provides a more precise measurement than the traditional approach of using a fitting procedure alone.

[learn more](#)



Clockwise from upper left: Tuula Maki, University of Helsinki and Helsinki Institute of Physics; Jaroslav Antos, Slovak Academy of Science; Roman Lysak, Slovak Academy of Science; Andy Beretvas, Fermilab; and Yen-Chu Chen, Academia Sinica.

## Result of the Week Archive

## In the News

### Pointing the way for accelerator science

From *SciDAC*, Sept. 19, 2007

*Community Petascale Project for Accelerator Science and Simulation*

The DOE program of scientific discovery relies heavily on particle accelerators, which comprise 14 of the 28 facilities in the DOE twenty-year outlook on Facilities for the Future of Science. The Community Petascale Project for Accelerator Science and Simulation (ComPASS) will develop a comprehensive computational infrastructure for accelerator modeling and optimization. This will advance accelerator computational capabilities from the terascale to the petascale to support DOE priorities for the next decade and beyond.

[Read more](#)

## Announcements

## [Fermilab Today](#)

## [Result of the Week](#)

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

## [ILC NewsLine](#)

### Info

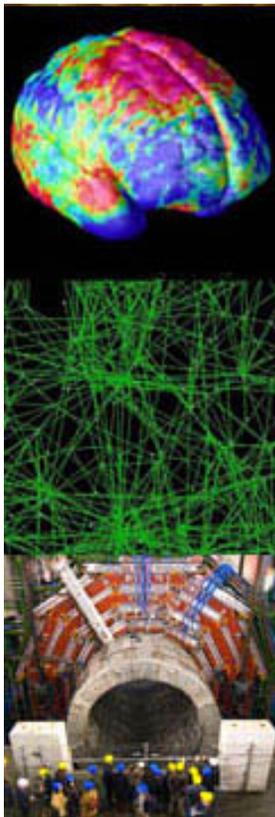
Fermilab Today

is online at:

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

Send comments and suggestions to:

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



Grid computing is not only providing scientists with the computing power to push the limits of their science, it is also fueling all-new levels of international scientific collaboration.

## **Fermilab to participate in Chicago Science in the City**

**From *The University of Chicago*, Sept. 24, 2007**

The University of Chicago, Argonne National Laboratory and Fermi National Accelerator Laboratory, in collaboration with a dynamic group of businesses, civic, cultural and community organizations, will participate in Chicago's second annual Chicago Science in the City 2007 event. Chicago Science in the City is a compilation of two weeks of events, designed to encourage Chicagoans to explore and experience the various fields of science. Since most of the events are free to the public, participants will have the opportunity experience science first hand.

[Read more](#)

information. These computing resources include data storage capacity, computing power, sensors, visualization tools and much, much more. Using a grid, someone sitting at one computer can harness the combined capabilities of hundreds and thousands of computers, providing researchers with the extra power to make faster progress in their work.

[Read More](#)

## **Have a safe day!**

### **Prairie Harvest on Oct. 6**

The first 2007 Prairie Harvest takes place in conjunction with [National Lands Day](#) from 10 a. m. to 2 p.m on Oct. 6. You can find more information on the event [here](#). Plan to learn more about our ecology and the prairies while participating in a national program.

### **FNALU inbound e-mail stopped Oct. 1**

On Oct. 1, 2007, direct e-mail delivery to FNALU nodes will cease. This change only affects delivery, not how or where mail is read. Unless directed otherwise, forwarded mail will move to the IMAP servers. Users should move their existing mail folders to IMAP. Please read the [FAQ](#) for further details. Please contact the help desk at x2345 if you have additional questions.

### **Exciting Explorations fall program**

Exciting Explorations will take place the following dates: Monday, Oct. 8 (Columbus Day); Monday, Nov. 19; and Tuesday, Nov. 20. Additional days may be added if interest warrants. The cost is \$35 per day per child. The cost includes two snacks and beverages but not lunch. Please call Patti or Mary Simmons at x3762 to register your child or send an [e-mail](#) to request additional days.

### **Interpersonal Communication Skills**

Learn effective communication strategies by assessing your communication style and developing skills for more productive work relationships through the Interpersonal Communications Skills course on Oct. 18. For more information and enrollment, go to the [Web site](#).

### **[Additional Activities](#)**