

## Calendar

### Thursday, November 4

**2:30 p.m.** Theoretical Physics Seminar - Conjectorium (NOTE LOCATION)

Speaker: S. Chaudhuri, Pennsylvania State University - (WH-3NE)

Title: Thermal Duality and String Thermodynamics

**3:30 p.m.** DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over

THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY

### Friday, November 5

**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. Dimopoulos, Stanford University

Title: Signatures of High-Scale Supersymmetry

**8:00 p.m.** Fermilab International Film Society - Auditorium

Tickets: Adults \$4

Title: Ugetsu Monogatari

## Wilson Hall Cafe

### Thursday, November 4

Southwestern Chicken Tortilla Soup

Philly Style Cheese Steak \$4.75

Baked Fish w/ Roasted Leeks and Peppers \$3.75

Tomato Basil Chicken Parmesan \$3.75

Classic Cuban Panini \$4.75

4 Cheese Pizza \$2.75

Marinated Grilled Chicken Caesar Salads \$4.75

[Wilson Hall Cafe Menu](#)

## Fermilab Launches Girl Scout Badge This Weekend



A group of Girl Scouts at last year's Prairie Harvest.

Rain or shine, the Girl Scout Fermilab Workshop will draw girls from all around the area on Saturday Nov. 6 from 9 a.m. to 3 p.m. to earn their newly designed Fermilab Girl Scout Badges.

The Scouts will come in small groups and engage in a variety of activities, including exploring Wilson Hall's 15th floor; viewing a video on Fermilab's



Fermilab's Girl Scout Badge

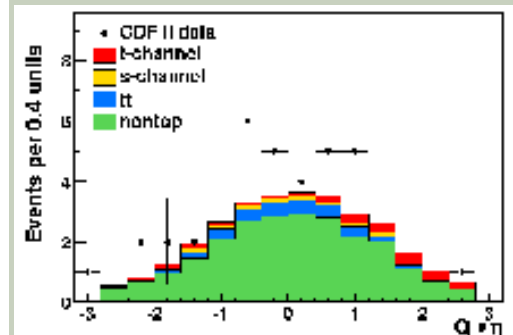
Lederman Science Education Center. Previously, a rain date had been announced but was canceled.

At the end of the day, girls who have completed a minimal number of activities will get to sew a Fermilab Badge onto their uniform. "Scouts like to earn their badges, and to show them off on their

Prairie Restoration Project; hiking on prairie trails; and learning about the Prairie School of Architecture. In case of bad weather, the activities will be indoors and will include visiting the

## Fermilab Result of the Week

### CDF Seeks Single Top



The product between the lepton charge  $Q$  and the pseudorapidity  $\eta$  of the light quark jet  $\eta$  was used in this search. The t-channel signal events are expected to exhibit an asymmetry in the positive  $Q$  times  $\eta$  region; no such asymmetry is observed in the first  $162 \text{ pb}^{-1}$  of CDF II data. (Click on image for larger version.)

The highlight of Run I at the Tevatron was the discovery of the top quark, the heaviest elementary particle known today. Even though most top quarks are produced in pairs (top-antitop), the Standard Model also predicts the production of single top quarks via s- and t-channel W-boson exchange. Due to formidable experimental challenges, single top production has so far eluded direct observation. The search for this process is one of the highest priorities of Run II because it sheds light on the weak interactions of top quarks.

The single top quark processes are difficult to measure because the production rate is a factor of 2.3 smaller than that of top-antitop pairs, and because other background processes have much larger rates than the signal. The signal-to-noise ratio is roughly 10% for events passing the selection requirements.

[Chez Leon](#)

Weather



Chance Showers 51°/31°

[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](mailto: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](#)

uniforms," said workshop organizer Anne Lucietto (FESS).

Volunteers from Fermilab's staff will provide directions and brief presentations on Fermilab topics at key points of interest throughout the laboratory's grounds.

The newly minted Fermilab badges come in three types, each for a different age group: "Try-it" triangles for ages 6-8, round badges for ages 9-11, and rectangular "Interest Patches" for ages 12 and over. All badges feature two Fermilab symbols: the buffalo and the silhouette of Wilson Hall.

[read more](#)

## Ballet Internationale Performs Carmen This Saturday at Fermilabs Arts Series

The legendary saga of love, deception, and seduction comes to life as Ballet Internationale presents the full ballet-version of Carmen. Set to the timeless music of George Bizet, and choreographed by Alonso Adolfo,

this story of the Spanish Gypsy Carmen and her lover Jose is filled with passion, pathos, and of course a few bullfights. The first half of the program,



Russian Treasures, features some of the most spectacular solos, pas des deux, and pas des trois of the Russian classical ballet repertoire including the Rose Adagio from Sleeping Beauty. You won't want to miss this night of outstanding dance on Saturday,

In the truly multi-national spirit of the CDF Collaboration, seven physicists from Canada, Germany and the U.S. have embarked on the challenge and have performed the first search for single top quark production in Run II with a dataset of  $162 \text{ pb}^{-1}$  of proton-antiproton collisions. The group found no significant evidence of a signal, but have set the first upper limits on the production cross section (denoted by signs) at 1.96 TeV:  $\sigma(\text{t-channel}) < 10.1 \text{ pb}$ ,  $\sigma(\text{s-channel}) < 13.6 \text{ pb}$  and  $\sigma(\text{t- and s-channel combined}) < 17.8 \text{ pb}$ . Besides placing stringent limits, this analysis also establishes techniques that set the stage for the first significant observation of a single-top signal in the future of Run II.



(Left to Right) C. Ciobanu and T. Junk (Univ. of Illinois at Urbana-Champaign), P. Savard and B. Stelzer (Univ. of Toronto), and T. Walter, W. Wagner, and T. Muller (Karlsruhe Univ.) contributed to this single top measurement. (Click on image for larger version.)

[Result of the Week Archive](#)

## Correction

The *Fermilab Today* story on the new Particle Astrophysics Center inadvertently omitted listing the Cryogenic Dark Matter Search, and the proposed SuperNova Acceleration Project and Dark Energy Search. A corrected version is available in the [press release online](#). *Fermilab Today* regrets the error.

## Announcements

November 6, 2004 at 8 p.m. in Fermilab's Ramsey Auditorium. Tickets are still available.

[more information](#)

### Accelerator Update

During the shutdown, the Accelerator Update will offer a series on the history and operation of the laboratory's accelerator complex. The Main Injector history is the eighth story in the series.

[Read the Current Accelerator Update](#)

[View the Tevatron Luminosity Charts](#)

### In the News

#### From *Physics Today*, November 2004

##### Building a Cyclotron on a Shoestring

Starting when he was an undergrad, Tim Koeth built a 12-inch cyclotron. Now he is in grad school and his creation is used in a senior-level lab class.

"I was immediately obsessed," says Timothy Koeth, who, as a sophomore in physics in 1995 at Rutgers University, got the bug to build a cyclotron. "I was sitting in Tom Devlin's modern physics lecture," recalls Koeth. "He described the principle of the cyclotron. He said it required a lot of RF power. I was—and am—a ham radio operator, so RF was no problem. It needed a big magnet; I knew I could find one of those. How tough could a vacuum system and chamber be?" Some six years later, Koeth's 12-inch machine became part of an undergraduate lab course.

[Read more](#)

### Calling All Fermilab Veterans

The Fermilab Veteran group will have a Veterans Day Celebration at the Kuhn Barn on Thursday, November 11 from 11:00 a.m. to 1:00 p.m. Guest speakers will present a military perspective on the war in Iraq, and lunch will be served. The cost per person is \$5.00. Please contact one of the following people by Friday, November 5 if you would like to attend: Susan Meguga x3260, Mike Frett x4663, Greg Gilbert x6835, Tom Smith x3542, or Marcus Diaz 878-8429.

### Fermilab Association of Rocketry

The Fermilab Association of Rocketry is having its next monthly club launch on November 6, 2004 from noon until 4:00 pm.

[more information](#)

### Fermilab Arts Series this Saturday

The Fermilab Arts Series presents, "Carmen - Full Ballet" this Saturday at 8:00 p.m. in Ramsey Auditorium. Tickets are still available.

[more information](#)

### Fermilab Film Series this Friday

The Fermilab Film Series presents "Ugetsu" on Friday at 8:00 p.m. in Ramsey Auditorium.

[more information](#)

### Power Outage News

#### Meson and Radiation Facility

November 6 – The power will be off to Meson and the Radiation Facility for five hours on Saturday beginning at 7 AM.

#### Wilson Hall

November 14 – The power will be off to Wilson Hall for ten hours on Sunday, beginning at 7 AM.

