

## Calendar

### Monday, June 6

THERE WILL BE NO PARTICLE ASTROPHYSICS SEMINAR THIS WEEK

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

BREAK - 2nd Flr X-Over

**4:00 p.m.** All Experimenters' Meeting - Curia II

Special Topic: PBar Source Diagnostics

### Tuesday, June 7

**12:00 p.m.** Summer Lecture Series - 1 West

Speaker: M. Witherell, Fermilab

Title: Discoveries Ahead in Particle Physics

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

BREAK - 2nd Flr X-Over

**4:00 p.m.** Accelerator Physics and Technology Seminar - 1 West

Speakers: A. Molvik, Lawrence Livermore National Laboratory

J.-L. Vay, Lawrence Berkeley National Laboratory

Title: E-Cloud Theory, Simulations and Experiments

## Weather



Mostly Sunny **86°/54°**

[Extended Forecast](#)

[Weather at Fermilab](#)

## Current Security Status

[Secou Level 3](#)

## Wilson Hall Cafe

### OSTP's Looney To Speak Wednesday, 8:30 a.m.

Patrick Looney, Assistant Director for Physical Sciences and Engineering of the Office of Science and Technology

Policy, will speak to the Fermilab

community at 8:30

a.m. on Wednesday,

June 8, in Ramsey Auditorium. The title of

his talk is "P5: Policy, Politics and

Perspectives on Particle Physics." All

members of the Fermilab community are

welcome to attend.



### Alvin Tollestrup Award to Schwienhorst of DZero

Reinhard Schwienhorst will receive the Alvin Tollestrup Award for Postdoctoral

Research at the 2005 Users' Meeting. A co-convenor of the Single Top Working

Group at DZero, Schwienhorst has spent the

past two years searching for single top quark production.



"Reinhard has taken on a very challenging task and shown great enthusiasm, leadership, and ability to bring

new ideas to bear on the problem of seeing the production of single top

quarks," said John Conway, chair of the Alvin Tollestrup Award committee. "We

believe that the techniques he has

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## Safety Tip of the Week

### Energized Circuits



Leaders in Electrical Safety: Rich Bergquist, Supervisor of FESS Operations Electrical Workers and Jeff Dement, General Foreman for T&M Arlington Electric (Click on image for larger version.)

As a general rule, work on energized electrical circuits is dangerous and something to be avoided. The associated hazards can include electrical shock, electrocution, arc flash and even explosion depending on the level of available hazardous electrical energy. While it is necessary at times to measure, test and troubleshoot energized circuits, the vast majority of electrical work at Fermilab is performed on de-energized circuits.

A recent electrical arc injury elsewhere within the DOE science complex has led to an increased awareness of electrical safety at Fermilab. In that incident, an electrical worker suffered severe burns as a consequence of changing a circuit breaker in an energized 400 Amp 480 VAC distribution panel. As exemplified by this accident, some of the greatest electrical hazards are faced by electrical workers who work on AC power

## Monday, June 6

Wisconsin Cheese Soup  
Corned Beef Reuben \$4.85  
Chicken Provencale \$3.75  
Shepherd's Pie \$3.75  
BBQ Panini with Pepper Jack Cheese \$4.85  
Meat Lovers Pizza \$3.00  
Kung Pao Chicken with Peanuts & Scallions \$4.85

The Wilson Hall Cafe now accepts Visa, Master Card, Discover and American Express at Cash Register #1.

[Wilson Hall Cafe Menu](#)

[Chez Leon](#) is now open. Call x4512 to make your reservation.

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developed are the best hope for seeing this at the Tevatron some day."

Schwienhorst's team has set upper limits on the production cross section, which indicates the probability that a single top quark is produced. These limits are a factor of two more sensitive than any previous limits. "We will be able to actually observe single top quark production - but it will require a lot of effort," Schwienhorst said. The observation of top quark production will provide otherwise inaccessible insight into electroweak interactions and physics beyond the Standard Model.

Schwienhorst describes the search for the single top quark as not only one of the highest priorities for the Tevatron, but also as a personal quest. After reading Faust in school as a child, Schwienhorst became intrigued with a passage in which Faust seeks to "perceive whatever holds / The world together in its inmost folds." This interest in the most fundamental components of matter continues to drive Schwienhorst's studies.

Despite this personal connection to his research, Schwienhorst refuses to take full credit for his award. "This is a reward for the entire group and not just for me exclusively," he said. "This work is the result of the effort of many people, and I have been lucky to be part of a very strong working group."

--Kelen Tuttle

## Tevatron Tracked Tsunami, Acting as Lab Seismometer

distribution systems that are energized. The inherent dangers of such work have been long recognized at Fermilab and such activities are the rare exception rather than the rule. Certain "hot work" activities even demand the approval of the area Division/Section Head and the Directorate.

In response to the incident, Associate Director Jed Brown tasked the Electrical Safety Subcommittee to review the accident and to apply lessons learned to strengthen Fermilab's Electrical Safety Program. An important result of the Subcommittee's work has been a revision of [FESHM Chapter 5042](#) that concerns AC electrical power distribution safety. The Chapter now clearly states that working on the exposed energized conductors of power distribution equipment is generally prohibited. While the safety record of Fermilab and T&M electrical workers has been exemplary, increased awareness of electrical safety issues by all will serve to help make Fermilab a safer place to work.

**Have a great day and let's work safely all week!**

[Safety Tip of the Week Archive](#)

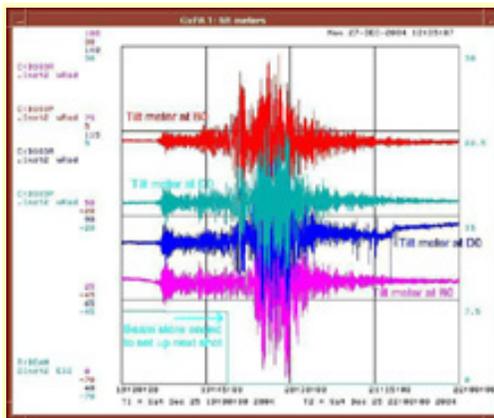
### Accelerator Update

#### June 1-June 3

- During this 48 hour period Operations established one store that combined with an existing store provided the experiments with approximately 41 hours and 48 minutes of luminosity.
- Booster chopper and notcher problems
- Power supply holds off NuMI

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)



Tilt meter records from the Dec. 25, 2004 tsunami earthquake (Click on image for larger version.)

The undersea earthquake of last December 25 that triggered a massive tsunami in the Indian Ocean also generated geophysical waves that created intellectual ripples in the Main Control Room. Tevatron operators had just intentionally terminated a store that Christmas Day when the first indications of the earthquake reached Fermilab.

Primary waves, or p-waves, rushed through the Earth in a series of compressions and expansions, the same way sound waves are propagated. Tilt meters at B0 and D0, which are continuously recorded but not directly monitored, began to hiccup. Shortly thereafter, secondary waves, or s-waves, moved through the Earth but around its liquid outer core, which cannot sustain the shear stresses associated with s-waves. Tilt meters were nudged into more activity.

Surface waves arrived at Fermilab about 45 minutes later and set tilt meters wildly waving. If an intentional termination hadn't been scheduled for that day, surface waves might have triggered beam losses or a quench. Surface waves are complex, simultaneously moving in different directions to create a rolling motion.

[View the Tevatron Luminosity Charts](#)

## Announcements

### Register for the 2005 Fermilab Users' Meeting

It's not too late to register for the 2005 Fermilab Users' Meeting. Join us for:

- Presentations from representatives of DOE, NSF and OSTP, with Q&A
- Latest results from Fermilab experiments
- An insider's view of the EPP 2010 panel
- Status of future initiatives at the lab and in HEP as a whole
- Free catered dinner at the Users Center...but only if you REGISTER! Registration is free, and can be done online at the [Users' Meeting](#) Web site.

### Accelerated C++ Short Course

On June 6, Fermilab will offer the first session of Accelerated C++: A Short Course in Practical Programming by Example. The Short Course is an extended professional development experience that emphasizes computer programming in modern standard C++. No tuition is charged; the only cost is for the required textbooks. Walter Brown, who participates on Fermilab's behalf in the international C++ standardization effort, is the course instructor. He is a member of the Computing Division's CEPA department. Course registration is now open.

[more information](#)

### Scottish Country Dancing

Scottish Country Dancing will meet Tuesday, June 7, at Kuhn Barn on the Fermilab site. Instruction begins at 7:30 p.m. and newcomers are always welcome. Most dances are fully taught and walked through, and you do not need

Fermilab has recorded surface wave lengths of 60-70km.

Earthquakes happen every day, with the majority passing unnoticed. But a few major quakes (operators can document four in the past three years) throw the Tevatron beamline off enough to cause problems. Not much can be done to stop the problems an earthquake causes, but the quakes are of interest to people like Duane Plant and Todd Johnson, who have been collecting data on the effects of quakes on the Tevatron since 2002.

Much remains to be learned about the relationship between an earthquake's intensity and distance, and concerns for the collider. Developing advance warning of approaching significant disturbances remains a future hope, but for now the MCR personnel can at least determine quickly that an earthquake was to blame, and not spend excessive time searching for an elusive equipment failure.

--Eric Bland

### In the News

#### **From *Interactions News Wire*, June 3, 2005**

#### **Millennium Simulation - the largest ever model of the Universe**

The Virgo consortium, an international group of astrophysicists from the UK, Germany, Canada and the USA has today (June 2nd) released first results from the largest and most realistic simulation ever of the growth of cosmic structure and the formation of galaxies and quasars. In a paper published in Nature, the Virgo Consortium shows how comparing such simulated data to large observational surveys can reveal the physical processes underlying the build-

to come with a partner. Dancing will move to the air-conditioning of Ramsey Auditorium for the summer season on June 14. Info at 630-840-8194 or 630-584-0825 or [folkdance@fnal.gov](mailto:folkdance@fnal.gov).

#### **Wisconsin Dells Coupon Book**

The Wisconsin Dells Coupon Book contains over \$6,000 in 2-for-1 and 50% off values from over 100 Wisconsin Dells merchants. These are rare and unique coupons that you won't find on any street corner or brochure rack. The book sells for \$20 retail and in many cases savings from just one coupon can reimburse the \$20 purchase price or more! For even better savings, the Recreation Office is selling these books for \$15.00 each beginning in May. The coupons are good until April 30 of the following year. Interested, check out the sample books in the Recreation Office.

#### **[Upcoming Activities](#)**

up of real galaxies and black holes.

[Read more](#)