

Calendar

Thursday, August 3

2:30 p.m. Theoretical Physics Seminar - 1 West

Speaker: E. Couce, Universidad de Valencia

Title: Neutrino Oscillation Physics with a Beta Beam

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

THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY

Friday, August 4

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

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

Speaker: C. Smith, University College London

Title: MINOS Results from the First Year of NuMI Beam Operation

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

Weather



Isolated T-Storms **89°/65°**

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

[Secou Level 3](#)

Wilson Hall Cafe

It's a scam: Do not click on Argonne link in your email

A phishing email that appears to come from the Argonne Credit Union has been circulating. Do not click on the link: the intent of this message is to steal your personal information about your Argonne account. Several people at the lab have gone to this site and entered information. Within an hour after an employee entered their information yesterday, someone in Romania took \$400 from their account. We are working with the Argonne Credit Union to keep them apprised of the accounts we know were compromised.

If you went to this site and entered any information, including your login and password, contact the Argonne Credit Union by telephone immediately and report it to them.

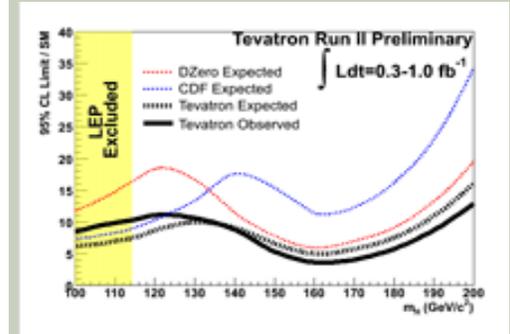
Around-the-clock effort rescues clogged NuMI horn



The NuMI focusing horn is back in operation and delivering protons to the target when beam is available.

Fermilab Result of the Week

CDF and DZero: Working together to find the Higgs



Expected and observed limit ratios to the SM cross section for Higgs boson production at the Tevatron for the combined CDF and DZero Higgs searches. A ratio value less than unity would indicate a Higgs mass excluded at 95 percent CL. Also shown are the individual expected limits for the CDF and DZero experiments.

Despite its success as a predictive tool, the Standard-Model (SM) of particle physics remains incomplete without a means to explain electroweak-symmetry breaking. The simplest proposed mechanism results in a particle (the Higgs boson) that has yet to be observed. Direct searches in $e^+e^- \rightarrow Z^* \rightarrow ZH$ at the Large Electron Positron (LEP) collider yielded lower mass limits at $m_H > 114.4 \text{ GeV}/c^2$. Now that the two Tevatron collider experiments are analyzing their first inverse femtobarn of data, a combined CDF/DZero Higgs boson search has become a reality.

To evaluate a combined limit, the two experiments contributed a total of sixteen individual analyses. These searches were performed in the associated Higgs ($pp \rightarrow W/ZH$) and gluon-gluon fusion ($pp \rightarrow H \rightarrow WW$) production channels, analyzing integrated luminosities in the

Thursday, August 4

- Tomato Florentine
- Grilled Chicken Cordon Bleu Sandwich
- Chimichangas
- Chicken Marsala
- Smoked Turkey Melt
- Assorted Slice Pizza
- SW Chicken Salad with Roasted Corn Salsa

[Wilson Hall Cafe Menu](#)

Chez Leon**Thursday, August 3****Dinner**

- Salad of Field Greens, Pears and Blue Cheese w/Mustard Tarragon Vinaigrette
- Fillet of Beef w/Green Peppercorns, Horseradish and Cognac Sauce
- Vegetables of the Season
- Chocolate Souffle w/Frangelico Cream

Wednesday, August 9**Lunch**

- Seafood and Avocado Salad w/Ginger
- Blueberry Pie w/Vanilla Ice Cream

[Chez Leon Menu](#)

Call x4598 to make your reservation.

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After nearly a month with repair crews working 20-hour days, improvising strategies like a line-up of off-the-shelf industrial-strength shop-vacs to remove water and clear the cooling nozzles, the NuMI focusing horn is back in operation and delivering neutrinos to the MINOS experiment when proton beam from the Main Injector is available. "We believe it's now essentially clear, and it appears to be running fine," said Accelerator Division engineer Kris Anderson, who directed the effort. "It takes well over a year to build one, and I'm glad we were able to fix it without breaking it."

The NuMI horn focuses short-lived particles called pions, which are generated when protons hit a target and decay to neutrinos (among other particles). The focusing is achieved using intense magnetic fields generated by 200,000-ampere pulses of electric current. In addition to neutrinos, the particles and electric current deliver enormous amounts of heat. Without 36 gallons per minute of low-conductivity (or de-ionized) water for cooling, the horn would burn itself up. At 4:40 p.m. on Friday, June 30, with one foot out the door before the extended July 4 holiday weekend, Anderson heard the last thing he wanted to hear just then: voices on the phone telling him there was no water flowing to the horn's cooling nozzles. Since the voices belonged to experts, Jim Hylan and Tom Kobilarcik, Anderson knew there was no room for doubt.

[Read More](#)

Safety record highlights PPD's annual picnic

range 0.3-1.0 fb⁻¹. Using two different statistical methods (Bayesian and CLs), limits were calculated by both experiments to guard against any bias in the statistical treatment. The limits are derived at a confidence level (CL) of 95 percent. To facilitate model transparency and to accommodate analyses with different degrees of sensitivity, the results are presented in terms of the ratio of limits set to the SM cross sections ($\sigma \times BR(H \rightarrow X)$) as a function of Higgs mass. The SM prediction for Higgs boson production would therefore be considered excluded at 95 percent CL when this limit ratio falls below unity. The observed and expected limit ratios are shown in the figure, with observed (expected) values of 10.4(7.6) at $m_H=115$ GeV/c² and 3.8(5.0) at $m_H=160$ GeV/c².

These combined results represent an improvement in sensitivity over those obtained by each experiment alone. With improvements expected in the analyses, along with additional data being prepared for analysis, these encouraging results will improve significantly in the near future.

[Result of the Week Archive](#)

Accelerator Update**July 31 - August 2**

- Two stores provided 31 hours and 54 minutes of luminosity
- H- source failing
- Pbar problems continue
- High temperatures causing problems

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

[Fermilab Result of the Week archive](#)

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

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There was a balloon toss at PPD's annual picnic Friday. (Click for more images.)

The Particle Physics Division's annual picnic on Friday, July 28, featured face painting, a water balloon toss, a pie-eating contest, plenty of food and a series of safety awards. "This was a good year in PPD," said division head Jim Strait. "We have plenty to celebrate both in terms of science and safety."

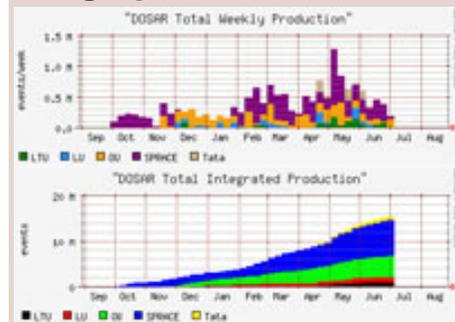
PPD has now passed 2,174,007 staff-hours without a DART case. "The previous division record was about 1.3 million hours, so it's quite an accomplishment," said Martha Heflin, chief safety officer for PPD. "In the sixteen years I've been here there has been a significant increase in safety consciousness. But the numbers aren't what are important. The people are important, which is why we have the ES&H open house sessions dedicated to at home safety."

By Friday, PPD will pass Computing Division for the lab record. "I tried to get the organizers to move the picnic, but that wasn't possible," said Strait, adding with a grin: "I invited [CD head] Vicky White to come, but she declined."

Strait was encouraged by the prospects for the Dark Energy Survey project and for the neutrino experiments NOvA and MINERvA. He also pointed to SciBooNE

Science Grid This Week

Helping Small Groups Make a Big Splash on the Grid



Five DOSAR institutions' contributions to simulations for the DZero experiment during the past year. Image Courtesy Joel Snow.

For three years, the Distributed Organization for Scientific and Academic Research has been helping high-energy physicists with modest computing resources make big contributions to their collaborations using the grid. DOSAR brings researchers together to share information and experiences, with the goal of accelerating the adoption of new technologies by all members.

Initially called DOSAR, for the DZero Southern Analysis Region, the group comprised high-energy research groups from six universities in the southern United States and the Tata Institute in India. The organization banded together to simulate particle physics events for the DZero experiment at Fermilab in Illinois.

[Read More](#)

Announcements

beginning construction. "After a series of project cancellations," Strait said, "it's really great to have several projects that seem like they'll actually be built. Also, the increased enthusiasm internationally for the ILC is very exciting."

--*Benjamin Berger*

In the News

Beacon News Online

August 2, 2006:

Midnight bike ride an enlightening experience

I recently wrote a story promoting the third annual Chase the Moon late-night bike ride. And after interviewing the event's founder, Pam Bellm, I was willing to give it a try.

This was the third annual Chase the Moon ride, and Bellm promised a wacky good time. She told me not to worry about staying up late and trying to ride a bicycle in the dark. She promised hot coffee and an atmosphere filled with the energy of a happy crowd.

I enlisted my oldest daughter to ride with me. At the nocturnal age of 15, I knew she'd have no trouble staying awake, and — more importantly — keeping me awake. I have a hard time staying up past 9 o'clock on most nights.

[Read More](#)

Memorial Service for Jane Wilson

There will be a memorial service for Jane Wilson on Sunday, August 20 at 12:00pm in the Users' Center in the Fermilab Village. If you'd like to attend, please [click here](#).

GSA triathlon Saturday

The GSA's annual Fermilab triathlon will be held Saturday, July 29, at 8am. The triathlon consists of 800m swimming, 20Km biking and 5km running. For more information, check the triathlon [webpage](#) or email gsa_officers@fnal.gov with additional questions.

Prairie Quadrat Program

The Lederman Science Center still has openings for the [Prairie Quadrat program](#). Get out and learn about the prairie's natural diversity while helping real ecology researchers. "The plants are lush and denser than ever," said Education's Mary Hawthorne. "People have enjoyed this so much. We've had a number of repeat participants." This is the last chance of the year to take part; outings for the August 15, 24 and 30 are still available. Find out more and sign up [here](#).

[Upcoming Activities](#)