

Calendar

Thursday, October 28

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

Speaker: A. Broncano, Universidad Autonoma de Madrid

Title: The Connection Between Leptogenesis and Neutrino Experiments

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

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

Speaker: F. Mills, Fermilab

Title: Accelerators for Hadron Therapy

Friday, October 29

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. Freedman, University of California, Berkeley

Title: Latest Results from the KamLAND Reactor Anti-Neutrino Experiment

Wilson Hall Cafe

Thursday, October 28

Tomato Florentine

Grilled Chicken Cordon Bleu Sandwich
\$4.75

Chimichangas \$3.75

Chicken Marsala \$3.75

Maryland Crab Salad \$4.75

Italian Sausage Calzones \$3.25

SW Chicken Salad with Roasted Corn

Salsa \$\$0.75

[Wilson Hall Cafe Menu](#)

[Chez Leon](#)

Weather

"symmetry" Magazine Launched by Fermilab and SLAC



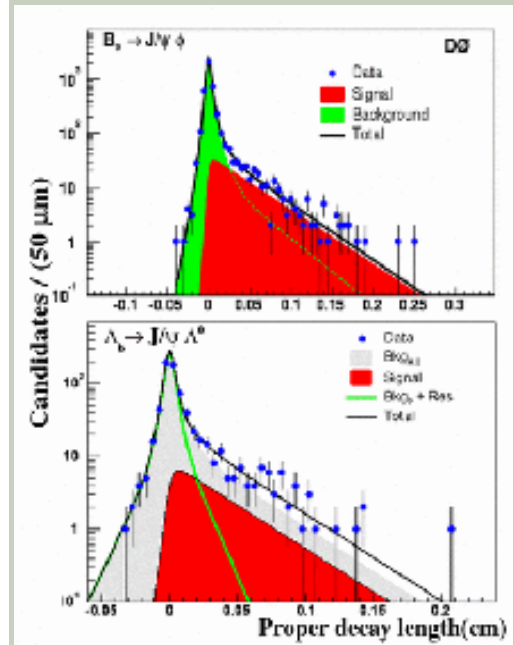
Members of the *symmetry* team sending out the first online issue yesterday morning. (Back Row Left to Right) Kevin Munday, Michael Branigan, Sharon Oiga, Davide Castelvecchi, Mike Perricone, Kurt Riesselmann, Aaron Grant (Front Row) Elizabeth Clements (Click on image for larger version.)

A new particle physics magazine, "*symmetry*," was launched Wednesday, Oct. 27 by Fermi National Accelerator Laboratory and Stanford Linear Accelerator Center, two of the US Department of Energy's national laboratories. "*symmetry*" explores the diverse dimensions of particle physics, and the links of the field to other aspects of science, policy and culture. The magazine will be published in print and electronic versions 10 times per year. All content is [available online](#). Print copies will be distributed to subscribers as well as Fermilab and SLAC employees today.

"This is one of the most exciting periods ever in particle physics; unexpected results have stimulated our appetite for new discoveries," says the magazine's editor-in-chief David Harris. "Many of the fundamental questions about the universe

Fermilab Result of the Week

Quarks: Not Just Idle Spectators



Proper decay length distributions for 337 B_s^0 candidates (upper) and for 61 Λ_b^0 candidates (lower). The points with error bars show the data, while the black curves correspond to the total fits giving a B_s^0 lifetime of $1.44^{(+0.10)}_{(-0.09)} \text{ (stat)} \pm 0.02 \text{ (syst)}$ and a Λ_b^0 lifetime of $1.22^{(+0.22)}_{(-0.18)} \text{ (stat)} \pm 0.04 \text{ (syst)}$ ps. Separated contributions are also shown as colored areas. (Click on image for larger version.)

A DZero team from CINVESTAV, Mexico City, has focused on measuring the lifetime of different b hadrons. Although b hadrons decay in many different ways, those decays where there is a J/psi decaying to muons in the final state are particularly interesting because they are easy to identify. Using the J/psi, DZero was able to reconstruct and measure the lifetime of the B_s^0 (a b quark and anti-strange quark) and the Λ_b^0 (a b plus an up and down quark). These other quarks are not "passive spectators", but rather affect the lifetime of the b quark in different ways and we can learn a great



Mostly Cloudy 63°/58°

[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](#)

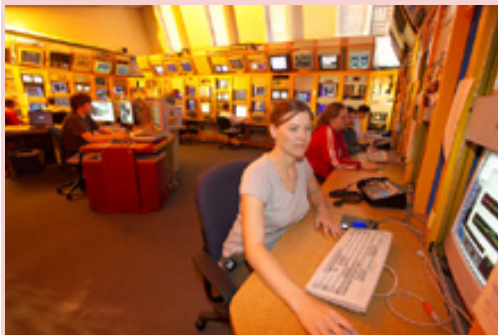
[Subscribe/Unsubscribe to Fermilab Today](#)

will likely find answers in the collaboration of particle physics with widely separated scientific disciplines. '*symmetry*' explores these connections."

[read more](#)

Shutdown News

Training Operators, Old and New



An operator in the Main Control Room. (Click on image for larger version.)

Every year, the scheduled shutdown period is a time of intensive training for accelerator operators. It is a time for about 30 operators, both the experienced ones and the new recruits, to get into the tunnels and familiarize themselves with the complex accelerator machines, which consist of a total of as many as 130,000 controllable devices. Trainees in the Operator I program will eventually go through a 2-inch thick folder of check-lists and undergo formal written and "walk-around" tests.

Operators also get a chance to attend meetings and regular training sessions offered by the laboratory. "During regular operations some parts of the training, such as radiation safety, can be hard to attend for people who are on night shifts," said Dan Johnson, Deputy Head of Accelerator Operations.

One of the operator's vital duties, closely monitored by the ES&H department, is

deal by measuring these effects on lifetimes.

The B^0_s lifetime measurement is the most precise single measurement of this quantity from any experiment. The Λ_b lifetime measurement was done for one of the first times in an exclusive decay channel. These new precise measurements check the theoretical predictions for interactions between lighter quarks and the heavier b quark bound together inside observable particles. The information will ultimately lead to a better understanding of the behavior of all quarks bound inside the matter of our everyday lives.



These two measurements were performed by the CINVESTAV, Mexico City group: Heriberto Castilla Valdez (top left), Alberto Sanchez-Hernandez (top right), Eduard de la Cruz-Burelo (bottom left), and Pedro Luis Manuel Podesta Lerma (bottom right). (Click on images for larger version.)

[Result of the Week Archive](#)

Announcements

the Search and Secure tour of a tunnel: Each time a section of the accelerator is about to start up from a supervised access condition, operators must make sure there are no people stranded or working inside who could be harmed by radiation and electrical hazards. Carefully inspecting the four miles of the Tevatron tunnel is a 2 1/2- hour job, said Bob Mau, Head of Accelerator Operations.

Another pre-start-up routine, which involves the entire Accelerator Division, is called Tough and Dirty, and consists of visually checking that all components are in good order, are properly connected, have water flow, etc. "There is a whole art form in doing this," Mau said.

Accelerator Update

October 18-October 22

Tevatron: The D17 Separator installation is 90% complete. Its bake begins 10/22/04

Linac: Up and running beam

Booster: Vacuum problems slowing startup, but they should have beam by the afternoon on 10/22/04

Antiproton Source: Analysis of the D/A lines is in progress

Main Injector/Recycler: The overall shutdown progress is at 80%

MiniBoone: The new horn has been installed

NuMI: Their new horn has been installed and its testing may begin near the end of the month

[Read the Current Accelerator Update](#)

[View the Tevatron Luminosity Charts](#)

In the News

Changes to Fermilab Travel Web Site

As of November 1, 2004 the web based [airline estimator and reservation service](#) will no longer be used by our travel management vendor and will not be considered accurate by our reservation system. There is a new product that will replace it very shortly. Once this system is up and running a notice will appear in *Fermilab Today* indicating roll out date and log-in information. The Travel Office apologizes for this temporary break in service. In the mean time all estimates and reservations can be handled through email at travel@fnal.gov or phone x3397.

GSA Halloween Party Tomorrow

The GSA will host their annual Halloween costume party on the evening of Friday, October 29 in the Kuhn Barn. Prizes will be awarded for the best costume. Food and drinks will be served. And back by popular demand, apple bobbing will also be available.

[more information](#)

1900 Productions Presents

"Copenhagen" at Elmhurst College

1900 Productions presents "Copenhagen" by Michael Frayn at Elmhurst College, running October 8 through November 14. Performances are Friday and Saturday at 8:00 p.m., Sunday at 2:00 p.m. at the Accelerator Art Space, 200 W. Park Ave. Elmhurst, IL. Tickets purchased by Fermilab employees are \$10.00 for all performances (regular price is \$20.00). Reservations can be made by calling the 1900 Productions box office at 630-251-7525.

[more information](#)

Power Outage News

MI-40

**From the *New York Times*,
October 26, 2004**

**This Season, Heisenberg Wears a Red
Sox Rally Cap**

by Dennis Overbye

I'm the biggest sports fan I know who
hardly ever watches a game.

I was watching a dinosaur movie with my
daughter last Wednesday while my Red
Sox were completing the greatest
comeback in the history of baseball and
vanquishing the Yankees. Even as my
wife, in the next room, relayed scores
posted on the Internet suggesting that
Boston was winning, I refused to turn on
the game.

The reason is something I call quantum
baseball. It caused me to lose the World
Series for the Red Sox 18 years ago,
when I realized that I seemed to have
terrible powers, powers that could be
used for good or evil - but mostly, it
seems, evil.

[Read more](#)

October 27 – The power will be off to the
MI-40 service buildings and tunnel for
three and a half hours starting at 8:30 AM
on Wednesday.

Village

October 30 – The power will be off to the
Village for eight and a half hours
beginning at 7 AM on Saturday.

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

The Wilson Hall power outage has been
tentatively scheduled for Sunday,
November 14, beginning at 7 AM. It will
last ten hours.

[Upcoming Activities](#)