

Calendar

Thursday, September 1

3:30 p.m. Director's Coffee Break -
2nd Flr X-Over

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

1 West

Speaker: H. Tomizawa, SPring-8, Japan

Title: R&D on RF-Gun Photoemission

Sources at SPring-8

Note: There will be no Theoretical
Physics Seminar this week

Friday, September 2

3:30 p.m. Director's Coffee Break -
2nd Flr X-Over

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

Speaker: R. van Kooten, Indiana
University

Title: Search for Bs Oscillations: New
DZero Results Template Methods

Weather



Mostly Sunny **83°/54°**

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

[Secou Level 3](#)

Wilson Hall Cafe

Global Connections: On the Job with Videoconferencing



Many groups at Fermilab rely on videoconferencing to communicate with collaborators thousands of miles away. ([Click on image for larger version.](#))

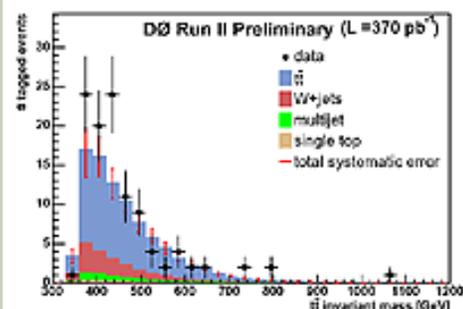
Collaboration is a vital part of any project at Fermilab, but meetings can prove difficult to organize when users' busy schedules routinely take them around the world. Sheila Cisco makes it easier for groups to stay in touch by coordinating videoconferencing at Fermilab.

"The technology is really blossoming right now," she said. "When Fermilab became involved in videoconferencing in the early 1990s, there were three conference rooms. Now we are up to about 26." In addition to the official conference rooms, individuals can also take advantage of the Internet to wire their own offices for videoconferences. Shifting some conferences from phone to Internet technology is not only more convenient for some users, but it is also beneficial to the lab. "Before, the lab could have dial-up circuit phone bills that were \$14,000 per month, so the new technology is really saving us money," Cisco explained.

Today, videoconferencing is important to

Fermilab Result of the Week

Using Top to Search for Technicolor



The $t\bar{t}$ invariant mass plot. ([Click on image for larger version.](#))

Of all the quarks, the top quark is perhaps the most mysterious. While supposedly an infinitely small point particle, it has the mass of 175 protons. The high value of the top mass has led to speculation that the top quark plays a special role among the elementary particles that is not reflected in the Standard Model (SM) of particle physics. Theorists have hypothesized extensions of the SM that predict modifications of the top quark's properties.

Of particular interest is the distribution of a quantity called the "invariant mass" of top-antitop quark pairs (which we refer to as $t\bar{t}$). It is especially sensitive to modifications of the SM that predict additional ways to produce these $t\bar{t}$ pairs in the high energy proton antiproton collisions studied at the Tevatron. For example the production of a Z prime (an extra heavy cousin of the photon) would appear as a spike in the $t\bar{t}$ invariant mass distribution.

DZero has measured the invariant mass of $t\bar{t}$ and compared the results to the

Thursday, September 1

- Tomato Florentine
- Grilled Chicken Cordon Bleu Sandwich
- Chimichangas
- Chicken Marsala
- Smoked Turkey Melt
- Italian Sausage Calzones
- SW Chicken Salad with Roasted Corn Salsa

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

[Wilson Hall Cafe Menu](#)

Chez Leon

Thursday, September 1

Dinner

- Caponata
- Grilled Scampi
- Orzo with Arugual and Parmesan
- Cassata

Wednesday, September 7

Lunch

- Salmon w/Ginger Scallion Mayo
- Snow Peas & Carrot Salad
- Poached Pears w/Vanilla Ice Cream & Chocolate Sauce

[Chez Leon Menu](#)

Call x4512 to make your reservation.

Search

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Info

Fermilab, especially because of the lab's international community. More videoconferences are including multiple sites, including remote locations in many different countries, increasing the need for top of the line equipment. "The most important aspect of a videoconference is having good audio, especially in our community, where English is not everybody's first language," explained Cisco.

In addition to single-handedly coordinating Fermilab's videoconferencing, Cisco is the Chair of the Remote Collaboration Working Group, which includes many DOE lab members involved in facilitating collaboration.

"There is a lot of focus on consistency of technology and centralization of services right now," Cisco said. "The technology is becoming easier to use, and people's comfort levels are increasing." Although Cisco believes that "it is hard to say where the new tools will take us," she will be there to guide Fermilab through the future of videoconferencing.

—Elizabeth Wade

Science Grid This Week

The Art of Monitoring with MonALISA

Operating a successful grid, network or computing facility requires vast amounts of monitoring information. Projects and organizations worldwide that need to track resource usage, network traffic, job distribution and many other quantities rely on Caltech's MonALISA system to collect the information and present it in a way that allows them to make effective decisions. The system also automatically troubleshoots and optimizes very large grid and network systems.

SM prediction. The measured distribution is consistent with the SM expectation. Thus limits on the branching ratio times cross-section for resonances can be set as a function of the resonance mass.

One particular extension of the SM referred to as Technicolor has been used as a benchmark model for comparison. In this model Z' masses up to 680 GeV are excluded at 95 percent confidence level, an impressive 120 GeV improvement over the world's previous best limit.



Maren Vaupel of the University of Wuppertal performed this analysis. (Click on image for larger version.)



From left to right: Nayeem Naimuddin, Rahmi Unalan, John Foglesong, Linda Bagby, Cory Fantasia, Mike Mulhearn, and Adam Roe are part of the team that has been working on the upgrade of DZero's Level 1 calorimeter trigger. Not pictured: Sabine Lammers, Dan Edmunds, Alan Stone, Philippe Laurens, Hal Evans, Jorge Benitez, Todd Adams, Cosmin Dragoiu, Mikolaj Cwiok, Peter Renkel. (Click on image for larger version.)

[Result of the Week Archive](#)

[Accelerator Update](#)

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"While developing computing models for experiments at the Large Hadron Collider, we realized that vital monitoring information was missing," explained Caltech's Iosif Legrand, MonALISA's chief architect. "We didn't want to reinvent the wheel, so we built a framework that collects and synthesizes data from many existing monitoring tools and built new tools only where needed."

[Read More](#)

In the News

From *ESA Space Science*, August 31, 2005 XMM-Newton probes formation of galaxy clusters

ESA's X-ray observatory, XMM-Newton, has for the first time allowed scientists to study in detail the formation history of galaxy clusters, not only with single arbitrarily selected objects, but with a complete representative sample of clusters.

Knowing how these massive objects formed is a key to understanding the past and future of the Universe.

Scientists currently base their well-founded picture of cosmic evolution on a model of structure formation where small structures form first and these then make up larger astronomical objects.

Galaxy clusters are the largest and most recently formed objects in the known Universe, and they have many properties that make them great astrophysical 'laboratories'. For example, they are important witnesses of the structure formation process and important 'probes'

August 29 - August 31

- During this forty-eight-hour period Operations established one store that combined with an existing store provided the experiments with approximately 44 hours and 15 minutes of luminosity
- New Pbar stack record for the Recycler Ring is 191.0 E10

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Announcements

Power Outage

Due to the holiday weekend, the September 3 power outage has been rescheduled to September 24th. The power will be cut to Labs A, B, C, D, E, and F from 8:30 AM - 4:30 PM on Saturday, September 24, 2005.

Weekly Time Sheets Due Tomorrow

With the upcoming Labor Day Holiday, Weekly Time Sheets are due in Payroll by 10:00 a.m on Friday September 2, 2005.

Opening Night - Natalie MacMaster

September 17, 2005 @ 8 p.m., Ramsey Auditorium: Tickets - \$28/\$14 ages 18 and under.

[Upcoming Activities](#)

to test cosmological models.

[Read More](#)