

Calendar

Thursday, January 12

2:30 p.m. Theoretical Physics Seminar - Theory Conf Rm (WH-3NE)

Speaker: A. Martin, Boston University

Title: Accidental Goldstone Bosons

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

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

Speakers: N. Mokhov and D. Still, Fermilab

Title: Crystal Collimation at the Tevatron

Friday, January 13

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

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

Speaker: K. Burkett, Fermilab

Title: Monojet Search and LED

Interpretation from CDF

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

Tickets: Adults \$5

Title: The Man Who Knew Too Much

Weather



Partly Cloudy **53°/39°**

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

[Secou Level 3](#)

Wilson Hall Cafe

Oddone Announces Change in Structure of Directorate

During a meeting held on Wednesday with Associate and Assistant Directors,



Pier Oddone

and with the heads of divisions and sections, Fermilab Director Pier Oddone announced an organizational restructuring to have Environment, Safety and Health report directly to the

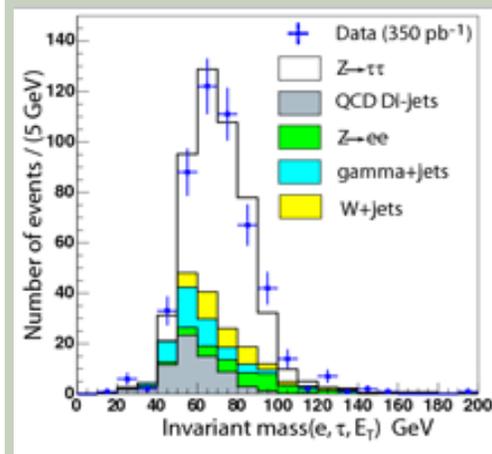
Director as a measure of the priority of safety in all aspects of the lab. In addition, a new position of Chief Financial Officer reporting to the Director will be created to consolidate financial functions. Oddone also discussed the next steps in analyzing how to optimize the rest of the organization to carry out the laboratory's program.

The changes, which take effect March 1, eliminate the position of Associate Director for Operations Support, currently held by Jed Brown, and consolidate the responsibilities for operations under Bruce Chrisman, currently Associate Director for Administration, who will become the lab's Chief Operating Officer. Brown, who had previously discussed the changes with Oddone, will remain at Fermilab through May 31 to help with the transition. He joined the lab in December, 2001.

At Wednesday's meeting, Oddone lauded Brown for his significant accomplishments in lab safety, in

Fermilab Result of the Week

When "Heavy Photons" Decay to Taus



Distribution of invariant mass for an electron + tau + missing E_T system, where we choose narrow jets with $N_{\text{track}} = 1$ and 3.

The Monte Carlo prediction for Z decays to tau pairs and its background agree with the data. The difference between the data and the total background (a sum of colored histograms) is accounted as the number of Z's detected and used to determine the production cross section. (Click on image for larger version.)

Sometimes a photon is not just a photon. Sometimes it's really heavy, and we call it a Z. You don't get many Z's from your flashlight, but when particles and antiparticles collide at high energy, occasionally we get Z's instead of photons.

These Z's don't hang around long and decay into a pair of leptons or quarks as long as they sum up to zero electric charge. Why do we want to study the decays to tau pairs in great detail? "New physics" like Higgs and Supersymmetry (to name two popular ideas) might prefer taus over electrons or muons. Thus, by studying Z decays to tau pairs, and comparing with expectations, we are

Thursday, January 12

- Minnesota Wild Rice w/Chicken
- Tuna Melt on Nine Grain
- BBQ Ribs
- Chicken Casserole
- Buffalo Chicken Wrap
- Mexican Pizza
- Chicken Pecan Salad

[Wilson Hall Cafe Menu](#)

Chez Leon**Thursday, January 12****Dinner**

- Gruyere and Black Forest Ham Crepes
- Shrimp Scampi
- Spinach Fettuccine
- Cassata

Wednesday, January 18**Lunch**

- Chicken and Prosciutto Cannelloni
- Caesar Salad
- Rum Raisin Spice Cake

[Chez Leon Menu](#)

Call x4512 to make your reservation.

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Fermilab Today is online at: <http://www.fnal.gov/today/>

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[Fermilab Result of the Week archive](#)

security and public access, and in site and facilities management, including several important measures for reducing costs.

"We all owe a debt of gratitude to Jed for his devoted service to Fermilab," said Oddone. "He leaves a great team in place in the areas that he has managed and a string of accomplishments we are very proud of. On a personal level, I have valued Jed's help in guiding my understanding of the many issues associated with the laboratory site, the health and safety program, and our relations with the public and surrounding communities. We all wish Jed and his wife, Jean, the very best in their next endeavors."

[Read More](#)

—Mike Perricone

SSDS Press Release: SDSS-II SUPERNOVA SURVEY EXPLODES WITH NEW FINDINGS

WASHINGTON DC (January 12, 2006) - The population of supernovae - exploding stars in distant galaxies -- has exploded here on Earth with an unprecedented number of new discoveries logged in just 90 days by the Sloan Digital Sky Survey (SDSS-II).

The SDSS-II Supernova Survey today reported the discovery of 139 new Type Ia supernovae during its first campaign last fall.

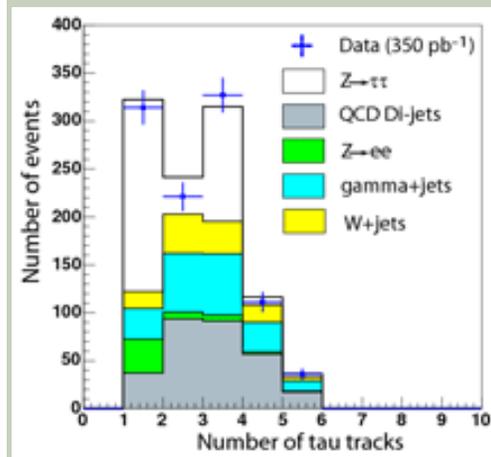
These supernovae will be used to provide more precise constraints on the nature of the mysterious Dark Energy that is causing the expansion of the Universe to speed up. They will also yield greater understanding of supernovae as standard distance signposts (aka

actually looking for some of this new physics.

How do we do it? The taus themselves are unstable so, again, we look at their decay products. A third of all taus decay to either an electron or muon, which is good because these are easy to measure. The remaining majority decay to more complicated things called charged and neutral pions along with a neutrino. The tau decay is characterized by forming a narrow "jet" that encloses an odd [number of charged tracks](#).

The challenge is to distinguish these tau jets from the much more common quark and gluon jets which are produced copiously at the Tevatron. Both in the real-time selection (trigger) and in subsequent data analysis, at CDF we have succeeded in collecting and identifying these taus with high efficiency.

Our measured cross section of 265 ± 33 picobarn agrees well with prediction. More importantly this validates the analysis techniques that we are now using for new physics searches at hadron colliders.



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

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standard candles or standard light bulbs) in the Universe.

"Finding so many supernovae in such a short time is unprecedented, because the SDSS probes a larger volume of space than previous surveys," explained supernova team co-leader Joshua Frieman of the Fermi National Accelerator Laboratory (Fermilab) and the University of Chicago. The results were made public during a session on Supernovae and Cosmology at the American Astronomical Society's winter meeting in Washington, DC.

[Read More](#)

Photo of the Day



Larry Spiegel of Fermilab discusses the CMS tracking system at "J-Term at the LPC", which began on Tuesday, January 10, and continues through today. Graduate students who want to know more about LHC physics are invited to attend the [day-long workshops](#), which focus on the mechanics of the CMS detector. (Click on image for larger version.)

Science Grid This Week

Distribution of number of charged tracks in "narrow" jets after our tau identification. We see a clear enhancement in $N_{\text{track}} = 1$ and 3, indicating tau leptons are correctly identified. (Click on image for larger version.)



The analysis team: Clockwise from top left, Richard Lander, Sasha Baroiant, Maxwell Chertok, (UC Davis); Vadim Khotilovich (Texas A&M), Alexei Safonov (UC Davis/Texas A&M), Teruki Kamon (Texas A&M). (Click image for larger version.)

[Result of the Week Archive](#)

Accelerator Update

January 9 - 11

- During the 48 hour period operations established one store that along with a previous store provided the experiments with 42 hours of luminosity.

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

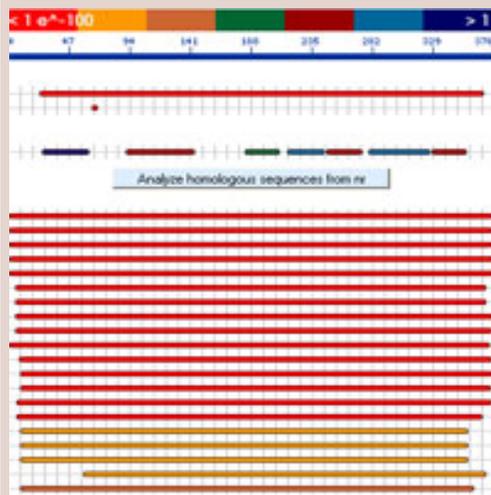
[View the Tevatron Luminosity Charts](#)

Announcements

Fermilab Today Survey

Today, January 12, the University of Chicago Survey Lab will contact all Fermilab employees by email, providing a link to the *Fermilab Today* online survey. Please take 10 to 15 minutes of your time to fill in the survey. If you get interrupted, you can resume the survey at a later time to complete it. A *Fermilab Today* story published two days ago

GADU Helps Biologists Decode DNA



Section of a PUMA2 protein sequence analysis.

Biologist Natalia Maltsev and a team at Argonne National Laboratory and the University of Chicago use grid computing to help researchers solve the mysteries of life. Their Genome Analysis and Database Update system (GADU) provides the core for several bioinformatics applications that search for similarities and differences among thousands of genome and protein sequences and metabolic pathways.

[Read More](#)

In the News

From *The Village Voice*, January 10, 2006: Design for Living: A theoretical physicist weighs in on a hot-button topic

Many high-profile critics in the raging debate over "intelligent design" have, understandably, been evolutionary biologists. Legendary Oxford professor Richard Dawkins regularly appears on British TV to talk up Darwin and lash out against ID between books. Harvard emeritus prof E.O. Wilson has edited a

provides more information [on the survey](#).

Yoga - Last Chance to Register

The next 8-week session of Yoga will begin January 17 through March 7. The class is held on Tuesdays in the ground floor Auditorium from Noon to 1 PM. Recreation Membership is NOT required. The cost for the 8-week program is \$80.00. A yoga mat is required. Beginners welcome. The deadline to register is January 13. Registrations can be made in the Recreation Office or find more information on [the website](#).

Women's Self Defense Class - Last Chance to Register

Could you effectively defend yourself if attacked? This class builds on the natural strengths that women possess for effective self-defense. Class will be held at the Kuhn Barn on Wednesdays from 5:30-7:30 p.m. beginning January 18 – February 22. The cost is \$35.00 for the 6-week session. More information can be found at [the website](#). Deadline to register is January 13.

Country Line Dancing

Learn the newest (and some good ole oldies) Country Line Dances. Classes will be held at the Village Kuhn Barn on Thursdays beginning January 26 through March 2 from 6-7 p.m. This 6-week session is \$30.00. This class is open to beginner and intermediate levels. No Recreation Membership is required. More information and registration form can be found at [the website](#). Deadline to register is January 14.

NALWO Slideshow

[National Laboratory Women's Association](#) slideshow and luncheon will take place on January 23, 2006 from

hefty new 1,700-page anthology of Darwin's collected works, with the fighting title *From So Simple a Beginning*.

They're generally not people like Leonard Susskind, a renowned physics professor at Stanford and a prime architect of string theory. His new book, his first for a general audience, has the provocative title *The Cosmic Landscape: String Theory and the Illusion of Intelligent Design* (Little, Brown).

[Read More](#)

11:00 a.m. until 1:00 p.m. in the Users Center Music Room. The topic is "Brazil and Argentina." We'll have lunch together after the slide talk, so bring a sack lunch. Beverages and Desserts will be provided. Lab women, guests, visitors, users and employees are welcome. For additional information, contact: Cynthia Albright at 630/208-8010; cynalbr@earthlink.net or the Housing Office at 630/840-3777; housing@fnal.gov.

[Upcoming Activities](#)