

Calendar

Thursday, January 13

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

Speaker: H. Davoudiasl, University of Wisconsin

Title: Neutrino Masses from Sub-GeV Dynamics in Low-Cutoff-Scale Models

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

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

Speaker: D. Seidman, Northwestern University

Title: Atom-Probe Tomography as a Tool for Solving Materials, Science and Engineering Problems

Friday, January 14

2:00 p.m. Particle Astrophysics Seminar - Curia II

Speaker: R. Wechsler, University of Chicago

Title: Using Galaxy Clustering to Connect Mass and Light

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

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

Speaker: D. Dujmic, Stanford Linear Accelerator Center

Title: $\sin 2\beta$ from Charmonium and Penguin Modes at BaBar

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

Tickets: Adults \$4

Title: Los Amantes del Circulo Polar (The Lovers of the Arctic Circle)

Wilson Hall Cafe

"Quantum Diaries" Chronicles World Year of Physics in Real Time, Real Lives

Members of the InterAction Collaboration for

particle physics communication today (January 13)

launched "[Quantum Diaries](#)," a Web site

that will follow the lives of some 25

physicists worldwide

as they live the World Year of Physics, 2005. In their own words, in blogs, photographs and video clips, and in half a dozen languages, the Quantum Diarists will give readers a real-time picture of the lives of 21st-century scientists.

Writing in French, English, Russian, Japanese, Italian, Dutch and German,



among other languages, scientists from universities and laboratories in the Americas, Asia and Europe have volunteered to "blog"

their experiences, thoughts, impressions, triumphs and disappointments as the year 2005 unfolds.

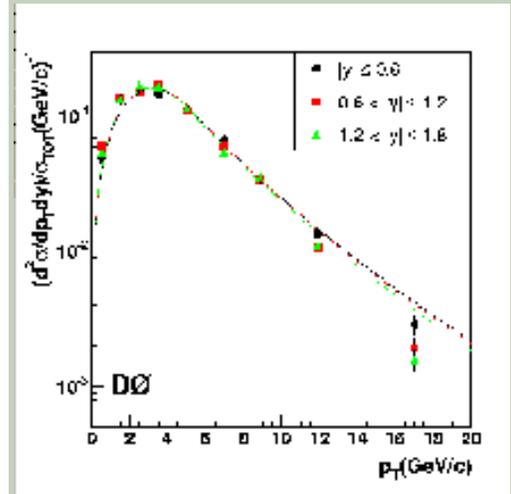
The 'Quantum Diaries' web site will be a marvelous contribution to the global celebration of the World Year of Physics," said Dr. Raymond L. Orbach, director of the U.S. Department of Energy's Office of



DZero's Gordon Watts is one of Fermilab's bloggers.

Fermilab Result of the Week

More of the Same But Different: Quarkonium Production at DZero



Normalized differential cross sections for the Upsilon(1S) as a function of transverse momentum in three rapidity ranges compared to QCD calculations from Berger et al. The absolute value of the cross-section in the rapidity range up to 1.8 has also been measured to be 695 ± 12 (stat) ± 75 (syst) ± 49 (lumi) picobarns per unit of rapidity. (Click on image for larger version.)

Quarkonia are mesons in which the quark and the anti-quark are of the same type. For example, the J/Psi consists of a charm and an anti-charm quark and the Upsilon(1S) consists of a bottom and an anti-bottom quark. Quarkonium



Daniela Bauer of Indiana University worked on this analysis.

production in proton-antiproton collisions provides an insight into the nature of the strong force, one of the four fundamental forces and the one responsible for holding together the quark constituents inside the protons and neutrons that make up the nuclei of everyday matter.

Thursday, January 13

Minnesota Wild Rice with Chicken
Tuna Melt on Nine Grain \$4.75
Breaded Veal with Mushroom Cream
Sauce \$3.75
Sweet & Sour Pork over Rice \$3.75
BLT Ranch Wrap \$4.75
Cheesy Breadsticks \$2.25
Chicken Pecan Salad \$4.75

[Wilson Hall Cafe Menu](#)

[Chez Leon](#) will be closed through January
and February

Weather



Wintry Mix **30°/3°**

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

[Secou Level 3](#)

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Science. "Albert Einstein after all was a person, and the public needs a sense of how people do science. 'Quantum Diaries' promises to help the public

understand how scientists think, behave, and accomplish their



goals. Diaries from [CDF's Tommaso Dorigo](#) is a Fermilab/INFN real physicist, [blogger](#).

doing real physics, will show that being a physicist is much more complex, frustrating and yet rewarding, than most people think. Most of all, the fruits of scientific discovery, and the intellectual contribution these discoveries make to our lives, will become visible. We shall all be able to share in the delights that drive these men and women to devote their lives to science.

"'Quantum Diaries' also will highlight other important facets of physics,"



Fermilab's fourth and final blogger is [Jochen Weller](#), the [David Schramm Fellow](#) in the Theoretical Astrophysics Group.

Science is the largest supporter of basic research in the physical sciences in the United States, so it is not surprising that all the American diarists are either employed by DOE's national laboratories or users of their fantastic facilities and instruments."

Orbach said. "Science in general and physics in particular is international, so it is fitting that diarists will contributing in many languages from many nations around the world. DOE's Office of

The rate for direct production of quarkonium states at the Tevatron

collider, reported by the CDF

Collaboration and based on the Run I data, turned out to be more than an order of magnitude larger than expected. This observation generated a lot of interest and led to various theoretical attempts to describe the data.

The new measurement of the Upsilon(1S) production by the DZero Collaboration extends studies of this process to the higher center of mass energy and a much wider range of rapidity, a variable related to the production angle with respect to the beamline.

Upsilon(1S) states are detected by their decays into two muons. Clean muon identification and efficient triggering over a large angular range of the DZero detector has been essential for this measurement, performed by a team of physicists from Indiana University. The sample of approximately 45000 Upsilon(1S) candidates, collected before the September 2003 Tevatron collider shutdown, was used to determine the production rate. The figure shows good agreement in a comparison between the data and recent theory predictions. The DZero results were presented at the



[Jundong Huang](#) (left) and [Andrzej Ziemiński](#) of Indiana University also worked on this analysis. [Daniela Bauer](#) (above) gave Huang a special custom made hat after his Ph.D. defense. (Click on [image for larger version](#).)

[read more](#)

Accelerator Update

January 10-January 12

- During this 48 hour period, Operations established one store that combined with an existing store provided approximately 44 hours and 41 minutes of luminosity to the experiments.
- The Recycler is regularly stashing antiprotons
- The Main Injector has an RF frequency problem
- The Antiproton Source achieves new stacking record

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

In the News

From *BBC News*, January 12, 2005

Sky surveys reveal cosmic ripples

By Jonathan Amos

In one sense, this work essentially explains why we are here.

The unimaginably big of today has its explanation in the fantastically small of 13 billion years ago.

Astronomers have shown how the present pattern of galaxies in the cosmos grew from tiny fluctuations in the density of matter just after the Big Bang.

The work draws on results from two scientific teams conducting sky surveys based in Australia and the US.

[read more](#)

International Conference on High Energy Physics in Beijing and will be submitted for publication shortly.



These individuals have been responsible for the operation of the muon system: (From left) Leonid Vertogradov (JINR), Huishun Mao (IHEP), Gennady Alexeev (JINR), Igor Vasiliev (IHEP), Sergey Efremov (IHEP). Not shown: Rob Harrington (Northeastern U.) and Yuriy Yatsunenکو (JINR) (Click on image for larger version.)

[Result of the Week Archive](#)

Announcements

Weekly Time Sheets Due Tomorrow

With the upcoming Martin Luther King Holiday, Weekly Time Sheets are due in Payroll by 10:00 a.m on Friday, January 14, 2005

Watch Out for that Bump!

FESS is lowering the water level in the east Reflection Pond in front of Wilson Hall in order to replace a high voltage cable in the duct bank near the pond. Please be mindful of the signs and slow down when driving over the hose on Road A in front of Wilson Hall. This work will continue through the end of next week. If you have questions, please contact Joseph Pathiyil at x3363.

Fire Sprinkler System Updates on Martin Luther King Jr. Holiday

FESS will update the fire sprinkler system in Wilson Hall on Martin Luther King Jr. Day on Monday, January 17. In order to accomplish this task, the fire sprinklers will be disabled for the duration of the day. Even though this is a holiday, and

From *Seattle Times*, January 11, 2005

Underground science lab gets tentative nod

WENATCHEE — The Port of Chelan County has released a draft resolution declaring its support of a proposed underground science laboratory near Leavenworth.

Final support hinges on whether scientists address community concerns about the lab.

Mark Urdahl, executive director of the port district, said the draft resolution amounts to a "conditional endorsement" of the lab.

[read more](#)

From *MSNBC*, January 12, 2005

NASA launches comet-busting probe

Controllers look into potential problem with Deep Impact

CAPE CANAVERAL, Fla. - A NASA spacecraft with a Hollywood name — Deep Impact — blasted off Wednesday on a mission to smash a hole in a comet and give scientists a glimpse of the frozen primordial ingredients of the solar system.

With a launch window only one second long, Deep Impact rocketed away at the designated moment on a six-month, 268-million-mile (429 million-kilometer) journey to Comet Tempel 1. It will be a one-way trip that NASA hopes will reach a cataclysmic end on the Fourth of July.

[read more](#)

the lab will officially be closed, there are some employees who will come to work. For those employees, FESS requests that you sign in on a log sheet at the Guard's desk in the atrium of Wilson Hall. When you leave, please sign out at the Guard's desk. The sprinkler system will be re-enabled at the end of the day on January 17. ES&H and FESS appreciate your cooperation.

New IRS Mileage Rate

Effective January 1, 2005, the standard IRS mileage rate for the business use of your personal car (including vans, pickups or panel trucks) was raised to 40.5 cents per mile up from 37.5 cents per mile in 2004. See the Business Services Section, [On-line Services Web page](#) and click on Accounting Rates; then IRS Mileage Reimbursement Rates. The Business Services Section [Accounting Web page](#) now has a "Mileage Reimbursement Report 2005" form for use in claiming applicable 2005 on and off-site mileage reimbursements. This MS Excel form can be easily completed and printed out from your computer.

Subscribe to Events Newsletter

To receive email notifications about upcoming cultural events at Fermilab, please sign up for the online newsletter [FermiCulture](#). Subscribers receive approximately five emails per month with information on upcoming arts performances, public lectures, films, etc.

Country Line Dancing Classes

Classes are held on Thursdays in the Village Kuhn Barn from 6:00 p.m. to 7:00 p.m. This 6 week session is \$30.00 and begins on January 20. No Rec. Fac. Membership Needed. Register in the

Recreation Office. The deadline is
January 14.

[more information](#)

[Upcoming Activities](#)