Fermilab Today

Monday, September 25, 2006

Calendar

Monday, September 25

1:00 p.m. Research Techniques Seminar - Curia II
Speaker: F. Gaede, DESY
Title: Simulation and Reconstruction Software for the ILC

2:30 p.m. Particle Astrophysics Seminar - Curia II
Speaker: S. Dodelson, University of Chicago/Fermilab
Title: Dark Matter vs. Modified Gravity

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

4:00 p.m. All Experimenters' Meeting - Curia II
Special Topics: Tevatron Ionization Profile Monitor; Observation of the b Baryon Σ_b at CDF

Tuesday, September 26

3:30 p.m. Director's Coffee Break - 2nd floor crossover

4:00 p.m. Fermilab Colloquium (NOTE DATE) - 1 West
Speaker: D. Clowe, Ohio University
Title: A Direct Empirical Proof of the Existence of Dark Matter
THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY

Click here for a full calendar with links to additional information.

Weather

Oscillatory behavior of the B-sub-s meson discovered

Christoph Paus announced the discovery at Friday's Wine & Cheese Seminar.

The CDF collaboration announced that they have met the exacting standard to claim discovery of unimaginably rapid transitions between matter and antimatter: 3 trillion oscillations per second.

Dr. Raymond L. Orbach, Undersecretary for Science in the U.S. Department of Energy, congratulated the CDF collaboration on the result.

"This remarkable tour de force details with exquisite precision how the antiworld is tied to our everyday realm," Dr. Orbach said. "It is a beautiful example of how, using increasingly sophisticated analysis, one can extract discovery from data from which much less was expected. It is a triumph for Fermilab."

The CDF discovery of the oscillation rate, marking the final chapter in a 20-year search, is immediately significant for two major reasons: reinforcing the validity of the Standard Model, which governs physicists' understanding of the fundamental particles and forces; and narrowing down the possible forms of

Safety Tip of the Week

Dumpster violations

On September 15, non-Fermilab household waste was discovered in an Accelerator Division dumpster. Among the goodies recovered were paint and aerosol containers.

Fermilab uses dumpsters to collect waste. Right before a dumpster is emptied, an ES&H Section employee inspects the contents of the dumpster to verify that no liquid, chemical or radioactive wastes are present. If any are found, the dumpster is locked until the offending material has been removed by the division or section responsible for the dumpster. (FYI: The search and removal process is generally referred to as dumpster diving.)

Sometimes problematic wastes come from onsite and sometimes they come from offsite. If it is determined that an employee, user or contractor is responsible for dumping offsite wastes into a lab dumpster, they may be charged for the cost of the clean up and subject to disciplinary action.

Below are some reminders for the proper management of waste materials.

Mostly Sunny **70º/41º**

Extended Forecast

Weather at Fermilab

Current Security Status

Secon Level 3

Wilson Hall Cafe

Monday, September 25
-Wisconsin Cheese
-Corned Beef Reuben
-Stuffed Chicken Breast
-Mostaccioli Al Forno
-Chicken Oriental Wrap Pineapple
-Assorted Slice Pizza
-Pacific Rim Rice Bow

The Wilson Hall Cafe accepts Visa, Master Card, Discover and American Express.

Wilson Hall Cafe Menu

Chez Leon

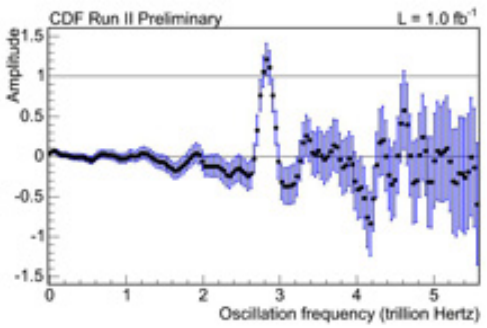
Wednesday, September 27
Lunch
-Crepes w/Black Forest Ham and Gruyere
-Arugula and Sweet Red Pepper Salad
-Chocolate Mousse w/Butter Cookies

Thursday, September 28
Dinner
-Coquille St. Jacque
-Beef Kabob w/Vegetables
-Rice Pilaf
-Pecan Torte w/Bourbon Cream
Chez Leon Menu
Call x4598 to make your reservation.

Search

supersymmetry, a theory proposing that each known particle has its own more massive "super" partner particle.

Many experiments worldwide have worked to perform high precision measurements of the behavior of matter and antimatter, especially as it pertains to strange, charm and bottom quarks. Scientists hope that by assembling a large number of precise measurements involving the exotic behavior of these particles, they can begin to understand why they exist, how they interact with one another and what role they played in the development of the early universe. Most importantly, they could also be the place in which to look for new physics beyond the Standard Model, which scientists believe is incomplete. Although none of these particles exists in nature today, they were, however, present in great abundance in the early universe. Thus, scientists can only produce and study them at large particle accelerators.
Read More



The figure shows the CDF measurement of the B_S oscillation frequency at 2.8 trillion times per second. The analysis is designed such that possible oscillation frequencies have an amplitude consistent with 1.0 while those not present in the data will have an amplitude consistent with zero. (*Image courtesy CDF collaboration.*)

In the News

- Fermilab's waste containers are for Fermilab wastes only. Non-hazardous household wastes can be recycled or disposed of through local community pick up. The State of Illinois has a program for disposing of household hazardous wastes
- Minimize waste through reduction, reuse and recycling. See FESHM 8020 for additional information.
- Don't put liquid, chemical or radioactive wastes into trash receptacles or dumpsters. See FESHM 8021 and 8023 for additional information.
- For assistance regarding waste management issues, contact the division or section waste coordinator.

Safety Tip of the Week Archive

Accelerator Update

September 20 - 22

- Two stores provided 24 hours and 45 minutes of luminosity.
- Store 4964 is a new record for average luminosity.

Read the Current Accelerator Update
Read the Early Bird Report
View the Tevatron Luminosity Charts

Announcements

Chicago's Lyric Opera
Chicago's Lyric Opera tickets (Monday night and some Sunday matinees) are available for purchase at a discounted price through the Waubonsee College Music Department. Please see the Lyric website at for information about the 2006-2007 season and if interested in tickets, contact Teri at dykhuis@fnal.gov or call 630-840-3607.

Professional Development

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University of Chicago Chronicle, September 21, 2006:

Physicists on faculty support ILC construction

Two beams of subatomic particles, each measuring far less than the diameter of a human hair, travel at the speed of light from opposite ends of an 18-plus-miles-long track. In precise alignment, they smash head-on into each other to simulate the conditions that existed shortly after the big bang.

Particle physicists around the globe nurture this vision for the proposed International Linear Collider, which could lead to revolutionary discoveries about the characteristics of matter and energy. Still at issue: where to build it and to what extent the United States will become involved.

Read More

New classes are always being added to the professional development schedule. For the most up-to-date course offerings, go to the web page.

Scottish Country Dancing

Scottish Country Dancing will meet Tuesday, September 26, at Kuhn Barn on the Fermilab site. Instruction begins at 7:30 p.m. and newcomers are always welcome. Most dances are fully taught and walked through, and you do not need to come with a partner. Info at 630-840-8194 or 630-584-0825 or folkdance@fnal.gov.

Upcoming Activities