Fermilab Today

Thursday, Oct. 23, 2008

Calendar

Thursday, Oct. 23

THERE WILL BE NO PHYSICS AND DETECTOR SEMINAR THIS WEEK

2:30 p.m.

Theoretical Physics Seminar - Curia II

Speaker: Enno Scholz, Fermilab

Title: Physical Results from 2+1 Flavor Lattice Domain Wall QCD

3:30 p.m.

DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over

THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY

Friday, Oct. 24

3:30 p.m.

DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over

4 p.m.

Joint Experimental-Theoretical Physics Seminar - One West

Speaker: Alan Boyle, *MSNBC*

Title: Magnetic Attraction: A Journalist's View of the LHC's Status in Popular Culture

8 p.m.

Fermilab International Film Society - Auditorium

Tickets: Adults $5

Title: A New Leaf

Sunday, Oct. 26

2 p.m.

Special Seminar - One West

Ukrainian Medical Association of North America

Speaker: Dr. Borys R. Mychalczak, Memorial Sloan Kettering Cancer Center

Title: The Death of Alexander Litvinenko, Understanding the Health Effects of Polonium 210 Exposure

Click here for NALCAL, a weekly calendar with links to additional information.

Weather

From Computer Security

Trust me, trust me not

Employees at several laboratories received these CDs. Those who inserted them into their computers caused infections that spread to thousands of other machines at their labs. When you receive unexpected CDs by mail, don't use them until you phone the sender and confirm the mailing. Don't be impressed by official logos. Anyone can print any logo on anything they choose.

Fifty years ago (it seems like yesterday) I was walking home from grade school when it started raining really hard. A passing car slowed, the window rolled down and the driver said, "Hop in kid, I'll give you a ride home." I jumped in although I'd never seen the driver before. When I arrived at home, my mom waved from a window to thank the driver. Neither of us thought anything about it.

Things have changed, and not just for kids.

Some of us are old enough to remember when e-mail and the Web were a novelty and people didn't think about cyber safety. Today, if you trust everyone who sends you an e-mail, CD or thumb drive, the outcome could be bad.

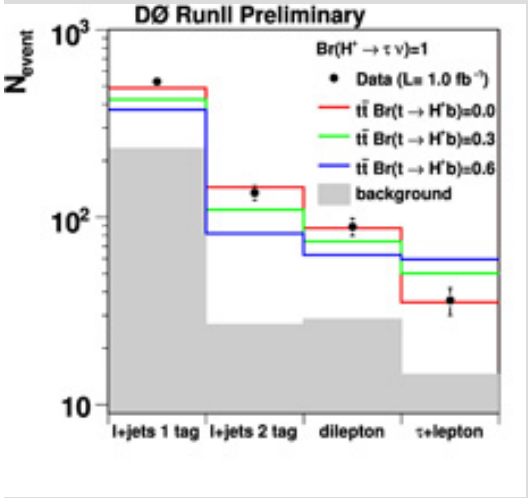
The photo above shows a CD case labeled "Green Day." Although it looks like an authentic package from DOE, the CDs are fake. If the CDs are inserted into your PC, your PC will become infected and then try to infect other machines.

We all need to adopt a much more cautious attitude regarding the exchange of physical media, just like we had to adopt a more cautious attitude about whose car our kids get into. Here are some tips:

- When you receive unexpected CDs by mail, don't use them until you phone the sender and confirm the mailing. If the return address doesn't include a person's name, don't trust the content.

Fermilab Result of the Week

Viewing Higgs from the top



This figure shows the number of events expected for different fractions of top quark decays including a charged Higgs. The predictions assume that the charged Higgs decays exclusively to tau+neutrino. The data is shown in black dots with statistical error bars.

The path to the Higgs is a rambling road. And whether Tevatron scientists find their way to the Higgs or not, their journey doesn't end there. Like all great questions, this one raises a few of its own: "If we don't find it, is it somewhere else?" or "If we do find it, is it the only one?" Physicists at the DZero collaboration believe they can help answer these questions. The best view of any winding road is from above, mapping out all the curves and intersections. The DZero scientists are doing just this by viewing the Higgs from the top; that is, the top quark.

If the Higgs boson exists, theorists think that there might be more than one type. Alternative theories, including supersymmetry, suggest that a total of five Higgs bosons could exist, each with different properties. The discovery of just one Higgs may not tell the full story. However, theories predict that two of the five Higgs bosons carry an electric charge. Finding a charged Higgs boson would clarify the map to the Higgs greatly, and could direct scientists to the remaining three Higgs bosons. A charged Higgs would prefer to interact with the heaviest particles it can, making decays involving top quarks possible.

Using their expertise in understanding the production of top quark pairs, DZero researchers designed an analysis to probe for the potential production of charged Higgs bosons. If top quarks could decay via a charged Higgs ($\tau \rightarrow H^{\pm} b$), researchers would see a decrease in the

Partly sunny
58°/45°

Extended Forecast
Weather at Fermilab

Current Security Status

Secon Level 3

Wilson Hall Cafe

Thursday, Oct. 23
- Tomato Florentine
- *Pork BBQ sandwich
- Pasta primavera
- Smart cuisine: chicken marsala
- Smoked turkey melt
- Assorted sliced pizza
- SW chicken salad w/roasted corn salsa

Wilson Hall Cafe menu

Chez Leon

Thursday, Oct. 23
Dinner
- Closed

Wednesdsay, Oct. 29
Lunch
- Magnolia chicken jambalaya
- Chocolate pecan bourbon tart

Chez Leon menu
Call x4598 to make your reservation.

Archives

Fermilab Today

Result of the Week

Safety Tip of the Week

ILC NewsLine

Info

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

Send comments and suggestions to:
today@fnal.gov

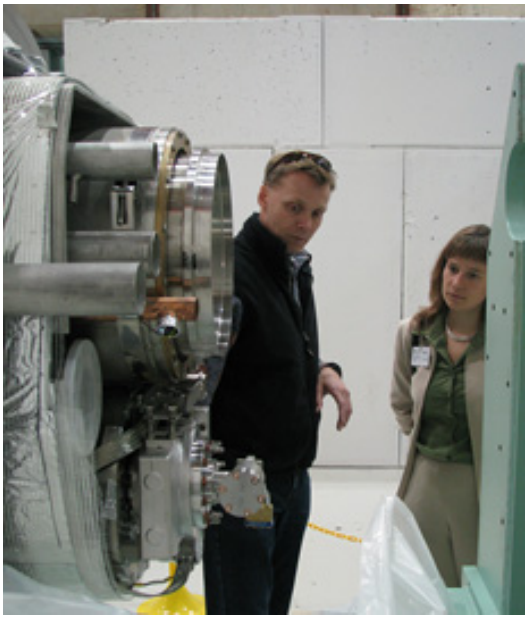
- Don't pick up free CDs and thumb drives unless they are in the manufacturer's sealed packaging. At trade shows and conferences, hackers pick up some of the free thumb drives, infect them and then put them back onto the display for some unsuspecting attendee to pick up. A recent scheme involved people tricking hotel staff into distributing infected CDs to participants in a workshop.
- Don't be impressed by official logos, including DOE, Office of Science or Fermilab logos. Anyone can print any logo on anything they choose.

Each computer user at Fermilab is an important ally in our defense against these exploits. Please stay alert. And don't let your kids get in a car with strangers.

--Mark Leininger

Photo of the Day

DOE's Melcer visits Fermilab



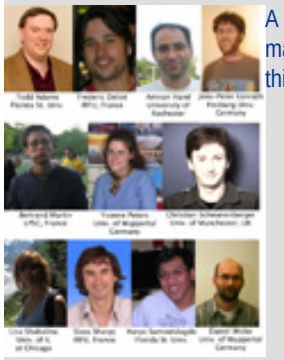
Natalia Melcer, program analyst in the DOE Office of Budget, visited Fermilab on Tuesday. During a tour of the laboratory, Sergei Nagaitsev showed her the cryostat with the superconducting cavities that will be part of a test facility here at Fermilab.

Feature

nearly exclusive top decays that include a W boson ($\tau \rightarrow W^{\pm}b$).

Using roughly one inverse femtobarn of data, DZero physicists searched for charged Higgs bosons produced in top quark decays. DZero scientists considered models in which the Higgs decays exclusively to tau leptons or exclusively to quarks, but their results showed no evidence for Higgs production. These results produce limits on the possible parameters of Higgs models and can direct future Higgs studies. As DZero's data sample grows, this overview of the Higgs roadmap will become even clearer, and help to keep the Tevatron's Higgs search on the right track.

Read more here



A team of DZero collaborators made primary contributions to this analysis.

DZero's team in charge of data processing helps ensure that analyzers are able to study the largest data sample possible. Their work is one of the driving forces that keeps DZero on the cutting edge of physics.

Accelerator Update

Oct. 20-22
- Three stores provided ~42.25 hours of luminosity
- Klystron Vernier flow turbine replaced
- MI-50 Upper power supply brought back online
- Pbar dry engine flywheel replaced

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

Announcements

Making Rockin' Einstein, Fermilab's scarecrow

Fermilab created Rockin' Einstein, an interactive scarecrow, for the St. Charles Scarecrow Festival earlier this month. View a YouTube video that features the scarecrow's creation, installation and the public's reaction. Click on the image to watch the video.

In the News

The many worlds of Hugh Everett

From ***Scientific American***, Oct. 21, 2008

After his now celebrated theory of multiple universes met scorn, Hugh Everett abandoned the world of academic physics. He turned to top secret military research and led a tragic private life

Note: This story was originally printed in the December 2007 issue of *Scientific American* and is being reposted from our archive in light of a new documentary on *PBS*, "Parallel Worlds, Parallel Lives."

Hugh Everett III was a brilliant mathematician, an iconoclastic quantum theorist and, later, a successful defense contractor with access to the nation's most sensitive military secrets. He introduced a new conception of reality to physics and influenced the course of world history at a time when nuclear Armageddon loomed large. To science-fiction aficionados, he remains a folk hero: the man who invented a quantum theory of multiple universes. To his children, he was someone else again: an emotionally unavailable father; "a lump of furniture sitting at the dining room table," cigarette in hand. He was also a chain-smoking alcoholic who died prematurely.

At least that is how his history played out in our fork of the universe. If the many-worlds theory that Everett developed when he was a student at Princeton University in the mid-1950s is correct, his life took many other turns in an unfathomable number of branching universes.

Have a safe day!

Traffic safety poster contest for kids

The Traffic Safety Subcommittee is sponsoring a traffic safety poster contest for fourth and fifth grade students of Fermilab employees, users and contractors. The posters should promote increased traffic safety awareness. Entries are due Oct. 31. The contest winner will be announced in *Fermilab Today*. The top posters will be displayed in the Wilson Hall atrium. For more information and an entry form, click here.

Town hall meeting with future director general of CERN

Fermilab will host an open town hall meeting with Rolf-Dieter Heuer, the designated director general of CERN, Oct. 28, at 10:45 a.m. in Ramsey Auditorium, followed by a reception in the WH Art Gallery (2nd floor) at noon. The town hall meeting includes a 10-minute talk by Heuer and a 60-minute Q&A session. Everyone is invited. Heuer would like to meet with all members of the U.S. particle physics community.

International Folk Dancing Oct. 23

International Folk Dancing will meet Thursday, Oct. 23, at Kuhn Village Barn. Dancing begins at 7:30 p.m. with teaching and children's dances earlier in the evening and request dancing later on. Newcomers are welcome and you do not need to come with a partner. Next Thursday, Oct. 30, the group will hold its annual Halloween party. Costumes and treats are welcome! For more information, call (630) 584-0825 or (630) 840-8194 or e-mail folkdance@fnal.gov.

Search or advertise on the SPIRES HEPJobs Database

The Fermilab Library maintains the SPIRES HEPJobs database, which lists particle physics and astrophysics jobs all over the world . You can search for jobs or advertise jobs free of charge.

Additional Activities

Read more