

Calendar

Thursday, September 22

10:00 a.m.-5:00 p.m. [ILC Industrial](#)

[Forum](#) - 1 West

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

Speaker: H. Fritzsch, Ludwig-Maximilians-Universität, Munich

Title: Constituent Quarks and the Spin of the Nucleon

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

Note: There will be no Accelerator Physics and Technology Seminar today

Friday, September 23

9:00 a.m.-5:00 p.m. [Bill Bardeen](#)

[Symposium](#)-1 West

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

3:40 p.m. Joint Experimental Theoretical Physics Seminar (NOTE TIME) -In conjunction with the Bill Bardeen Symposium

Speaker: J. Bardeen, University of Washington

Title: Does Accelerated Expansion Require Dark Energy?

4:20 Speaker: A. Buras, Technische Universität, Munich

Title: Searching for New Physics with CP-Violation and Rare Decays and a Bit More

Weather



Chance of Rain **79°/59°**

[Extended Forecast](#)

[Weather at Fermilab](#)

When I'm Sixty Four: Symposium for Bill Bardeen



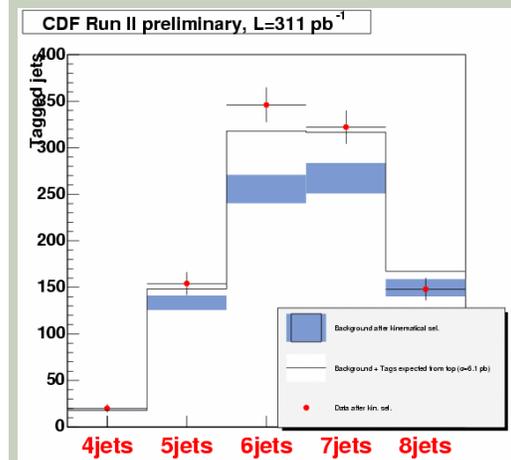
Bill Bardeen has been a theoretical physicist at Fermilab for over 20 years.

On Friday and Saturday, September 23-24, Fermilab will host a symposium to honor Bill Bardeen for a lifetime of achievement in theoretical physics. With talks by many of the leading theorists who helped to shape our current understanding of particle physics, the symposium will be a thought-provoking celebration for this newly-turned 64-year-old.

Bardeen is best known for his work on anomalies in quantum field theory, which play a fundamental role in shaping the structure of the Standard Model and the subtle interactions of mesons. He has advanced our understanding of the origin of mass and was an early founder of QCD, our theory of the strong force, which holds quarks together in the proton and neutron, and is mediated by gluons. After holding research positions at SUNY-Stonybrook and Princeton University, and teaching physics at Stanford University, Bardeen came to Fermilab in 1975 on the invitation of Ben Lee. He served as head of the Theoretical Physics department from 1985 to 1992, spent a year at the

Fermilab Result of the Week

Six Jets To The Top



The data (points) shows a clear excess of b-tagged jets over the background estimate (blue-band, width indicates uncertainty) for events with 6 and 7 jets. This is consistent with the standard model expectation including top pair production (solid black line) (Click on image for larger version.)

The measurement of the top-antitop ($t\bar{t}$) quark production rate is an important test of the strong force predictions in the Standard Model. Here we present the measurement of the $t\bar{t}$ production cross section in the "all hadronic" decay mode, where the W bosons from the top and antitop decay hadronically into quarks, appearing in the detector as collimated streams of particles called jets.

The event signature is quite spectacular since it has six high energy jets, two originating from b quarks. This is the most frequent decay mode of $t\bar{t}$ pairs, but unfortunately this signature is mimicked by ordinary background sources which are several orders of magnitude bigger.

To find all-hadronic $t\bar{t}$, a large data set of four million events with multiple jets are

Current Security Status

[Secou Level 3](#)

Wilson Hall Cafe

Thursday, September 22

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

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

[Wilson Hall Cafe Menu](#)

Chez Leon

Thursday, September 22

Dinner

- Coquille St. Jacques
- White Bean & Fennel Puree
- Julienne of Summer Squashes
- Almond Baklava

Wednesday, September 28

Lunch

- Ham, Gruyere & Green Onion Crepes
- Salad of Field Greens
- Fennel & Arugula
- Peach Melba

[Chez Leon Menu](#)

Call x4512 to make your reservation.

Search

Search the Fermilab Today Archive

Info

SSC, and then returned to Fermilab's Theory Group when the project was canceled.

Bardeen was awarded the J.J. Sakurai Prize of the American Physical Society in 1996 for his work on anomalies and perturbative quantum Chromodynamics, the theory of the strong force. In 1984, he became a Fellow of the American Physical Society and in 1999 he was elected a Member of the National Academy of Sciences.

The Bardeen Symposium will run in One West all day on Friday and Saturday, and the [talks](#) are open to the Fermilab community. On Friday, a 3:40 p.m. session with Bardeen's brother, cosmologist Jim Bardeen, and particle theorist Andrzej Buras, will replace the usual Joint Experimental Theoretical Physics Seminar.

—Siri Steiner

Science Grid This Week

Lighting Up Advanced Networks



Imagine setting up an ultra-high-speed Internet connection directly from your home computer to an electronic data warehouse one hundred times the size of the Library of Congress, and then selecting and downloading thousands of books in just seconds. Researchers in the UltraLight project study ways to allow scientists similar access to their data, by changing the way networks are operated, managed, and integrated with grid

collected. In order to exploit the distinctive properties of the $t\bar{t}b$ decay, events are chosen with six highly energetic jets that populate the detector in a uniform way.

Finally, two b quarks are required. Since the b quarks have a long lifetime their decay vertex will be displaced from the collision point. The high resolution of the CDF silicon vertex detector distinguishes b jets from jets from lighter quarks.

The CDF analysis successfully isolates the $t\bar{t}b$ signal in this difficult channel and measures a cross-section of $7.5 +3.7 -2.8$ pb. The team is currently finalizing a top mass measurement from the same events.



The CDF analysis team, top (left to right): Alexander Sukhanov, Jacobo Konigsberg and Gheorghe Lungu (University of Florida); bottom: Andrea Castro (University of Bologna); Giorgio Cortiana, Patrizia Azzi and Tommaso Dorigo (University of Padova and INFN); Ambra Gresele (University of Trento). Not pictured: Fabrizio Margaroli (University of Bologna) and Ignazio Lazzizzera (University of Trento)

[Result of the Week Archive](#)

Accelerator Update

Fermilab Today is online at:

<http://www.fnal.gov/today/>

Send comments and suggestions to

today@fnal.gov

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computing services.

"Current networks are a black box, you put bits of data in with a destination in mind, and hope they come out quickly on the other end," said physicist Shawn McKee from the University of Michigan.

"The network makes no guarantees, and there's no way to negotiate with it. We're looking into how to make the network a managed component of grids, like computing and storage resources are now."

[Read More](#)

In the News

From *Rapid City, S.D. Journal*, September 20, 2005: State, mine officials sign Homestake pact

LEAD, S.D.- South Dakota Governor Mike Rounds pledged Tuesday to begin a statewide campaign to win support for his plan to spend \$35.6 million to convert the closed Homestake gold mine in Lead into an underground science laboratory.

"Today is the first step in the sales pitch to the rest of South Dakota to confirm how special this opportunity is," Rounds told a crowd of more than 100 people gathered at Gold Run Park in Lead.

The state Legislature already has committed \$15.7 million to the Homestake lab proposal, including a \$10 million federal grant engineered by Sen. Tim Johnson, D-S.D., three years ago. Now, Rounds will ask for another \$19.9 million, probably in a special legislative session sometime in October.

The governor called the underground lab

September 19-21

- During this forty-eight hour period operations established one store that combined with an existing store provided the experiments with approximately 32 hours and 36 minutes of luminosity
- NuMI off due to dripping water
- Preaccelerator switched to the I- Source
- TeV quench

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Announcements

Open Enrollment for the Medical and Dental Insurance Plans Ends Friday

The open enrollment form must be in by 5:00 p.m. on September 23, 2005. You can access further information on the [Web](#)

Bill Bardeen Symposium

September 23 and 24. See story above for [details](#).

Discount Show Tickets

Purchase [discounted show tickets](#) direct for Disney's Princess on Ice Classics at the AllState Arena and the United Center, Radio City Christmas Spectacular at the Rosemont Theater and Murder Mystery Theater's "Sudden Death" at the Milk Pail Restaurant in East Dundee.

World Year of Physics Symposium for Students and Teachers

The symposium takes place on Saturday, October 8, from 8 a.m. to 3:15 p.m. at Fermilab's Ramsey Auditorium.

Theater for a Good Cause

TimeLine Theatre in Chicago presents the

proposal "a once-in-a-lifetime opportunity for our young people to benefit from a national laboratory within our borders."

[Read More](#)

Tony-Award-winning drama *Copenhagen* on Sunday, September 25 at 6 p.m. 100 percent of the proceeds for this night will go to the American Red Cross Hurricane Relief Fund

[More Information](#)

[Upcoming Activities](#)