

Calendar

[Have a safe day!](#)

Thursday, June 11
2:30 p.m.

[Theoretical Physics Seminar](#) -

Curia II

Speaker: Yeong Gyun Kim,
Korea Advanced Institute of
Science and Technology
Title: Mass and Spin
Measurements with mT2 at the
LHC

3:30 p.m.

DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

THERE WILL BE NO

ACCELERATOR PHYSICS
AND TECHNOLOGY

SEMINAR TODAY

4 p.m.

Extreme Beam - Physics at the
Intensity Frontier Lecture

Series - One West*

Speaker: Steve Holmes,

Fermilab

Title: Project X: A Multi-MW

Proton Source at Fermilab

Friday, June 12

3:30 p.m.

DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

THERE WILL BE NO JOINT

EXPERIMENTAL-

THEORETICAL PHYSICS

SEMINAR THIS WEEK

Saturday, June 13

8 p.m.

[Fermilab Arts Series](#) -

Auditorium

Tickets: \$18/\$9

Singer/Songwriter - Susan

Werner

[Click here](#) for NALCAL,
a weekly calendar with
links to additional
information.

Weather

University Profile

Indiana University



Some of the team of IU scientists and technical staff working on a \$278 million U.S. Department of Energy neutrino project are, clockwise from left, Stuart Mufson, Luke Corwin, Jon Urheim, Jonathan Paley, Fritz Busch, Bob Armstrong, Mark Messier and Brian Baptista. They are standing beside a prototype component of the liquid scintillator that will be used to collect light from subatomic particle interactions. Photo: *Indiana University Office of Communications*.

NAME:

[Indiana University, Bloomington](#)



HOME TOWN:

Bloomington, IN

MASCOT:

[Hoosiers](#)

SCHOOL COLORS:

Cream and crimson

PARTICLE PHYSICS

COLLABORATIONS:

ATLAS, DZero, Fermilab Lattice Group,
HEAT, HotQCD, ILC, JDEM/IDECS, MILC,
MiniBooNE, MINOS, MIPP, NOvA, SciBooNE

EXPERIMENTS AT FERMILAB:

DZero, ILC, JDEM/IDECS, MiniBooNE,
MINOS, MIPP, NOvA

SCIENTISTS AND STUDENTS AT
FERMILAB:

13 faculty, 14 scientists/post-docs and 13
students

COLLABORATING AT FERMILAB

SINCE:

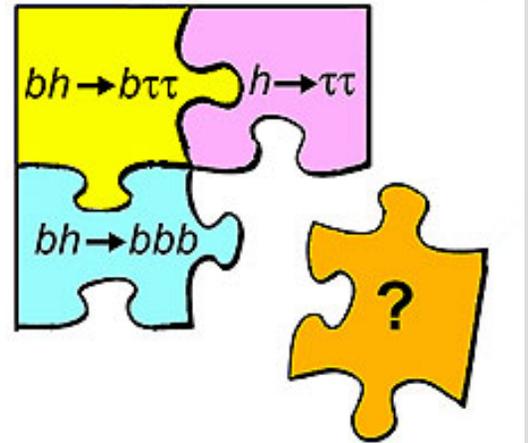
1972

MAJOR CONTRIBUTIONS:

Muon and central tracking detectors for DZero
Run 1 and 2 and leadership of heavy flavor

Fermilab Result of the Week

Piecing together the puzzle



Modern analyses by both Tevatron experiments benefit greatly by combining information from many different production mechanisms. While this result used information solely from DZero analyses, we also could combine DZero and CDF analyses for maximum discovery power.

My mother-in-law loves jigsaw puzzles; the steady and methodical interlocking of pieces, one after another, that slowly and surely reveal the big picture. This week's ROW is about a very similar effort by the DZero collaboration. Collaborators combined results from several independent analyses to make an even stronger measurement.

Supersymmetry (SUSY) is a principle that may describe the universe and is an integral part of many theories that extend the Standard Model. While the Standard Model predicts a single Higgs boson, SUSY models usually predict more. In this analysis, physicists searched for one of the SUSY Higgs bosons. Because its mass is unknown, DZero physicists investigated a broad range of possible masses.

The Higgs boson (the SUSY Higgs boson is denoted by an h) prefers to decay into the heaviest objects allowed. In this study, physicists searched for decays into b quarks and tau leptons (τ), specifically $h \rightarrow \tau\tau$, $bh \rightarrow b\tau\tau$, $bh \rightarrow bbb$, where bh means that the Higgs boson was created at the same time as a b quark.

Since the tau lepton can decay in many ways, this result included seven independent analyses. Combining these analyses was

 Chance of showers
69°/52°

[Extended Forecast](#)
[Weather at Fermilab](#)

[Current Security Status](#)

[Secon Level 3](#)

[Wilson Hall Cafe](#)

Thursday, June 11
- Tomato Florentine
- *Pork BBQ sandwich
- Kielbasa & sauerkraut
- Smart cuisine: chicken Marsala
- Smoked turkey melt
- Assorted sliced pizza
- SW chicken salad w/roasted corn salsa

[Wilson Hall Cafe menu](#)

[Chez Leon](#)

Wednesday, June 10
Lunch
- Spicy tilapia w/ pineapple pepper relish
- Basmati rice
- Blueberry custard parfait

Thursday, June 11
Dinner
- Closed

[Chez Leon menu](#)

Call x3524 to make your reservation.

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[Result of the Week](#)

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[Info](#)

analysis. Lattice QCD studies of spectrum, heavy-light hadrons and high-temperature QCD. On-board calibration for JDEM/ IDECS. MiniBooNE DAQ and charged and neutral-current elastic scattering analyses. Reconstruction, calibration and analysis of MINOS and MIPP. Development of the NOvA proposal and its scintillator and electronics systems. Theory and phenomenology of CPT-violating and other extensions to the Standard Model.

RESEARCH FOCUS:

Heavy flavors, electroweak interactions, QCD, neutrinos, dark energy, cosmic rays, Standard Model extensions.

WHAT SETS PARTICLE PHYSICS AT INDIANA UNIVERSITY APART?

Ours is one of the strongest neutrino groups in the U.S. and we have strengths on all frontiers: [energy](#), intensity, and [cosmic](#). We are a unique collaboration between physics and astronomy, experiment and theory.

FUNDING AGENCY:

Department of Energy and National Science Foundation

FAVORITE NATIONAL LABORATORY:

Fermilab

View all [University profiles](#)



Special Announcement

Extreme Beam lecture
Thursday, 4 p.m. in One West



The fourth lecture of the Extreme Beam lecture series will take place at 4 p.m.

particularly challenging. These analyses are made by the same detector, so an error in one measurement can show up in another. For example, because the amount of beam is determined for the entire experiment, if it is mismeasured as high or low, that will show up in all analyses. On the other hand, the experimental uncertainties associated with measuring tau leptons are quite independent of those measuring bottom quarks.

Understanding these tricky and subtle interdependencies of the various measurements is crucial to combining them and, after careful study, DZero physicists were able to do just that. Using plots like [these](#), they were able to set limits on the existence of this extension of the Standard Model that are an impressive extension of earlier ones made by the LEP experiments.

Steadily, piece by piece, the puzzle slowly comes together.

-- Don Lincoln

Learn more technical details [here](#)



Jon Hays combined the results of these and other analyzers to make this very strong measurement. Not pictured: Marine Michaut.

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

Send comments and
suggestions to:
today@fnal.gov

Visit the Fermilab
[home page](#)

Thursday in One West. Steve Holmes, Fermilab's Associate Director for Accelerators, will give a talk titled "Project X: A multi-MW Proton Source at Fermilab."

The lecture series, which will feature talks at Fermilab throughout 2009, will give in-depth information about the science and accelerator and detector technologies that will create a world-leading physics program at the Intensity Frontier.

Visit the [Extreme Beam Web site](#) for more information.

Feature

Shutdown affected by possible FY2011 collider run

The Fermilab shutdown begins June 15. The collider portion of the shutdown, the time with beam turned off to the Tevatron, will be extended nine days from the end of August to the second week of September.

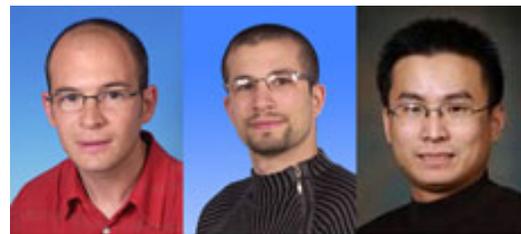
A longer shutdown schedule will allow additional time to prepare the Accelerator Complex to run the Tevatron collider an additional year (through FY 2011) with a minimal interruption. The longer shutdown also allows for cryogenic system repairs to a total of six sectors of the Tevatron that deteriorated recently during the current extended nearly 20 months run.

The schedule for the injector accelerator chain remains unchanged. It will resume operation nine days before the Tevatron starts up.

In the longer term, the Laboratory is looking at one more shutdown after this one, assuming a run through 2011. The Laboratory will try to restrict that shutdown to four weeks.

See the detailed shutdown schedule and regular [updates](#) and the [multi-year schedule](#).

In the News



Fabrice Couderc
IRFU, France

Romain Madar
IRFU, France

Zhiyi Liu
Simon Fraser
Canada



Abid Patwa
Brookhaven Natl.
Laboratory

Maxim Titov
IRFU, France

The identification of tau leptons was a crucial aspect of this analysis. These physicists are key players in that identification.

Special Announcement

DASTOW photos now available

Group photos from Wednesday's DASTOW event are now available on the security desk in the atrium of Wilson Hall.

Accelerator Update

June 8-10

- Four stores provided ~38.25 hours of luminosity
- Booster power supply (GMPS) work continues
- Machine studies

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Announcements

DOE Office of Science update: Director, Senatorial support, appropriations schedule, state spending

From *AIP FYI*, June 9, 2009

New Director of the Office of Science:

The nomination of William Brinkman to be the Director of the Office of Science was sent to the full Senate yesterday after being approved by the Senate Energy and Natural Resources Committee.

Brinkman appeared before the committee on June 2 with two other nominees. In his remarks, Brinkman described his research and management experience at Bell Laboratories, Sandia National Laboratory and at a research organization. He told the committee "Although the DOE has had many research successes and accomplishments, I believe that we can improve management, and the relationship between headquarters and the laboratories. If confirmed, I will strive to make the management as straightforward and effective as possible, recognizing the difficulty inherent in the unique, cutting edge projects that DOE takes on." His testimony touched on basic research, science education, energy, nonproliferation, and nuclear security.

[Read more](#)

Latest Announcements

[ACU car buying tips demonstration, June 24](#)

[Users Office closures](#)

[Bike to Work Week is June 13-19](#)

[Pool memberships are available in the Recreation Department](#)

[Argentine Tango classes through June 24](#)

[International folk dancing resumes at Auditorium June 11](#)

[Python training June 17-19](#)

[Toastmasters meeting June 18](#)

[NALWO "A Summer Evening Potluck Picnic"](#)

[English Country Dancing, June 21](#)

[Donors needed for Fermilab Blood Drive June 23 & 24. Give a pint - Get a quart of Oberweis Ice Cream](#)

[Environmental Safety and Health Fair - June 29](#)

[Discounted rates at Grand Geneva Resort, Lake Geneva, WI](#)

[Discount for SciTech Summer camps - July 6](#)

[Intermediate/Advanced Python Programming July 22-24](#)

[Process piping \(ASME B31.3\) class offered in October](#)

[Scrapbooking Open House](#)

[Accelerated C++ Short course: registration open - June 8](#)

[Barnstormers meeting](#)

[Additional Activities](#)

[Submit an announcement](#)

