

Calendar

Thursday, April 21

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

Speaker: J. Andersen, University of Cambridge

Title: Probing the High Energy Limit of QCD

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY

Friday, April 22

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

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

Speaker: Y. Kolomensky, University of California, Berkeley

Title: E158 Results on Parity Violation in Electron-Electron (Moller) Scattering

Weather



Partly Cloudy **62°/43°**

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

[Secou Level 3](#)

Wilson Hall Cafe

UEC, SLUO Trek to DC for Annual Meetings on Hill



Erik Gottschalk (left) and Herman White (right) met with Congresswoman Judy Biggert (R-IL) in Washington D.C. (Click on image for larger version.)

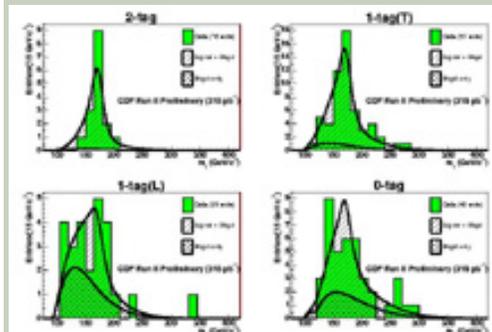
Last month, thirty members of Fermilab's Users Executive Committee and SLAC's Users' Organization spent March 16 and March 17 meeting with the offices of more than 125 Senators and Representatives in Washington D.C.

UEC and SLUO travel to the capitol with an annual mission. This year, it was clear-cut: how to improve funding for research in the physical sciences. "When you ask for an increase in funding, you often times get the feeling that there is support but no commitment," said UEC member Erik Gottschalk, who organized the trip to D.C. "This year, we referred to the APS Innovations Report and that really seemed to resonate with people."

As a direct outcome of this year's visit, the UEC and SLUO members managed to get a "Dear Colleague" letter started in the House of Representatives. The letter was initiated after discussions between a member of SLUO and Representative Adam Schiff (D-CA) and a representative

Fermilab Result of the Week

CDF Tops the Top World Average



Reconstructed top quark mass of four subsamples of the CDF lepton+jets data having different numbers of b-tags and jet Et thresholds. The Monte Carlo signal and background mass shapes corresponding to the most probable top quark mass are overlaid on the histograms. (Click on image for larger version.)

The top quark is a most remarkable particle, even for a quark. It was discovered by the CDF and DZero collaborations in 1995 with a surprisingly large mass — almost 35 times larger than the mass of the bottom quark. In fact, a single top quark weighs about as much as an atom of gold. In spite of its great mass and exceedingly brief existence in our detectors, top quark properties, particularly its mass, are extremely important for our understanding of nature.

The top quark mass serves as a fundamental parameter in the Standard Model (SM). Precise knowledge of the top mass provides us with constraints on the mass of what may be the last undiscovered SM particle, the Higgs boson. A very precise measurement, with other precision data, allow us to test other theories that are SM extensions.

A team of researchers from CDF has now

Thursday, April 21

Southwestern Chicken Tortilla Soup
Philly Style Cheese Steak \$4.75
Baked Fish w. Roasted Leeks and Peppers \$3.75
Tomato Basil Chicken Parmesan \$3.75
Classic Cuban Panini \$4.75
Four-Cheese Pizza \$2.75
Marinated Grilled Chicken Caesar Salads \$4.75

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

[Wilson Hall Cafe Menu](#)

[Chez Leon](#) is now open. Call x4512 to make your reservation.

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of the UEC and Congresswoman Judy Biggert (R-IL) in a bipartisan effort. "The letter really was a direct result of what happened during our meetings in D.C.," said Gottschalk. The combined users' group also spent March 18 meeting with the Office of Management and Budget (OMB), the Office of Science and Technology Policy (OSTP), the National Science Foundation, and the Department of Energy. For more information about the trip, contact [members of the UEC](#).

- Elizabeth Clements

BS's Sharon Larson Retired After 24 Years at Fermilab

Sharon Larson, an Administrative Support Assistant in BS, retired last Tuesday, April 12. She worked at the lab for over 24 years,

beginning March 16, 1981.

"I will miss all my fellow employees and the many great friends I have made over the years," said

Larson. During her retirement she will spend

more time with the love of her life, mentor and best friend, her husband Tom, who retired from the Accelerator Division in April 2000. Sharon and Tom have many household projects and repairs to accomplish, plan to spend more time with their 14 indoor cats, and will go on walks for exercise and enjoyment. She is also looking forward to spending some quality time with her grandchildren, Amanda, 12, and Alex, 9, in DeKalb, Illinois. And while she might be retired, don't be surprised to see her in Fermilab's halls. "I'll still be around," said Larson.

- Eric Bland

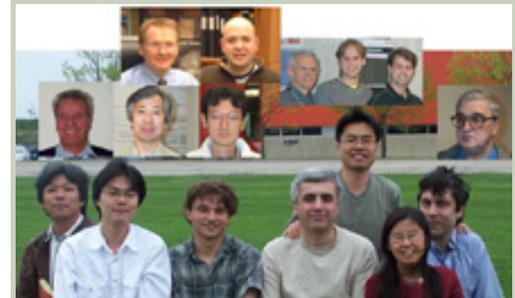


Sharon Larson

completed a new measurement of the top quark mass using pair-produced top events where each massive quark decays into a bottom quark and W boson. They select events in which one W decays to a lepton and a neutrino and the other W decays to two quarks, or "jets" — so-called "lepton plus jets" decay states of the top quark.

The top quark mass and hadronic W boson mass distributions reconstructed in data for double b-tag, one b-tag, and no b-tag samples are compared to the Monte Carlo templates in order to extract the top mass, shown in the above figure. The hadronic W boson mass distribution is used as an additional calibration for the calorimeter energy response to jets in the CDF detector, thereby reducing the single largest source of systematic uncertainty in the measurement.

These strategies result in the world's most precise measurement of the top quark mass: $M_{\text{top}} = 173.5 +2.7/-2.6$ (stat) ± 3.0 (syst) GeV/c². One of the beauties of the measurement is that the statistical and systematic uncertainties will continue to shrink as more data is collected.



Accelerator Update

April 18 - April 20

- During this 48 hour period operations established on store that combined with an existing store provided the experiments with approximately 37 hours and 47 minutes of luminosity
- Main Injector suffers from RF cavity phase error
- Accumulator power supply (A:LQ) causes problems
- Accumulator Septa power supply causes problems

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

In the News

From *Innovations Report*, April 19, 2005

Reno professor showcases 'mini' ion accelerator

Tom Cowan's team is thinking smaller, but with big impact. Particle accelerators are a key research tool in a high energy physicist's arsenal, but they take up a lot of space – miles and miles of it. But at the University of Nevada, Reno, smaller is better.

Cowan, director of the Nevada Terawatt Facility at the University, and his research partners have produced a proton beam that has 100 times higher quality than any conventional particle accelerator and fits on a tabletop.

[read more](#)

From top to bottom, left to right: Pekka Sinervo, Jean-Francois Arguin (U. of Toronto), Mel Shochet, Jahred Adelman, Erik Brubaker (U. of Chicago), Giorgio Belletini (INFN Pisa), Shinhong Kim, Tomonobu Tamura (U. of Tsukuba), Julian Budagov (JINR), Koji Sato (U. of Tsukuba), Young-Jang Lee (KCHEP), Wojtech Fedorko (U. of Chicago), Guram Chlachidze (JINR), Un-Ki Yang, Young-Kee Kim (U. of Chicago), G. Velev (Fermilab). (Click on image for larger version.)

[Result of the Week Archive](#)

Announcements

Earth Day is Tomorrow

Tree Planting Begins at 11:30 a.m.

Fermilab's Earth Day tree-planting activities for employees and their families, sponsored by Roads and Grounds, will be held on Friday, April 22 with a rain date of Monday, April 25. Because there is a strong chance of rain on Friday, employees should call x3303 tomorrow morning to find out if the tree-planting event has been moved to Monday. The planting will start at 11:30 a.m. and will go until all of the trees are planted. Bring a shovel, and wear boots and gloves (and this year, bring your own lunch, too). The area to be planted this year is directly west of Warehouse II.

[more information](#)

Summer Leagues

Co-Ed Softball League

The co-ed softball league will begin play on May 18. There will be a captains meeting on April 27 at noon in the cafeteria. Players of all levels welcome. Contact Dave Hockin, the league representative at hockin@fnal.gov for more information or to find a team. **Co-Ed**

Summer Volleyball League

The Recreation Office is looking for a league representative for the coed summer volleyball league. If you are

interested contact Jean at x2548 or jeanm@fnal.gov

Fermi Singers Perform this Friday

The Fermi Singers are back! Mark your calendars for April 22 at noon in the Auditorium. The group will present a Spring Concert for your listening pleasure. Snacks will be available following the performance!

[Upcoming Activities](#)