

Calendar

Thursday, May 25

12:00 p.m. Summer Lecture Series - Curia II

Speaker: A. Kolb, Fermilab

Title: Fermilab, 1967-2006: Four Decades at the Frontier

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

Speaker: S. Raby, Ohio State University

Title: Constructing 5D Orbifold GUTs from Heterotic Strings

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

4:00 p.m. Accelerator Physics and Technology Seminar - Curia II (note location)

Speaker: T. Sen, Fermilab

Title: US-LHC Activities in the Accelerator Division

Friday, May 26

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

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

Speaker: R. Bean, Cornell University

Title: Cosmology from WMAP and Beyond

For links to events, click [here](#).

Weather



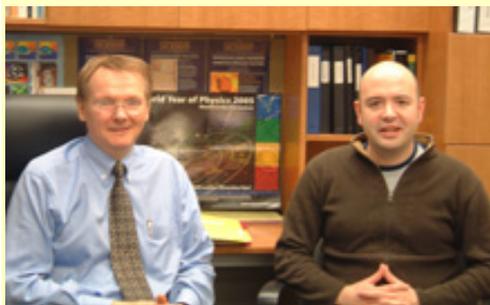
Showers/T-Storms Likely **79°/59°**

[Extended Forecast](#)

[Weather at Fermilab](#)

Current Security Status

Jean-Francois Arguin wins 2006 URA Thesis Award



Jean-Francois Arguin (right) and his advisor, Pekka Sinervo, of the University of Toronto.

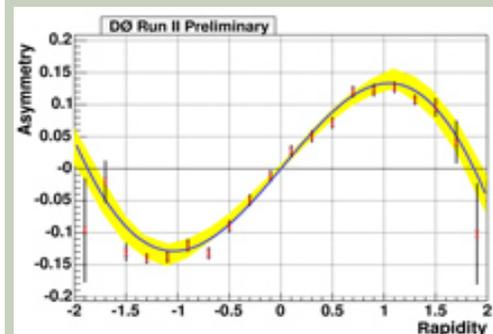
(Click on image for larger version.)

The URA Thesis Award Committee has chosen Jean-Francois Arguin, formerly of CDF, as the winner of the 2006 URA Thesis Award. His thesis, "Measurement of the Top Quark Mass with In Situ Jet Energy Scale Calibration Using Hadronic W Boson Decays at CDF-II," produced the world's best measurement of top quark mass. "[Arguin] really deserves it. The work he did was very much a result of his own inspiration and sweat," said Pekka Sinervo, University of Toronto professor of physics and Arguin's advisor.

Arguin's work was chosen from a pool of 14 nominated theses, for its superior combination of originality, physics content and clarity of presentation. "We have a very strong group of Ph.D. theses this year," said Computing Division's Stephen Wolbers, chair of the URA Award Selection Committee. "This one we liked in particular because it used new techniques to measure the top quark mass with a remarkably high precision. Not only is this the best [top] measurement ever made, but it allows future measurements to be better,"

Fermilab Result of the Week

Dissecting the Proton with W Bosons



Asymmetry of the muon from $W \rightarrow \mu \nu$ decays. Rapidity is related to the angle of the muon in the detector. The small red bars represent the systematic uncertainty; the black bars show the statistical uncertainty. The yellow band indicates the uncertainty range of the prediction using CTEQ6.1M momentum functions; the blue line indicates the central value for the MRST02 functions.

At the Tevatron, W^+ bosons are produced by the collision of an up quark from the proton and an anti-down quark from the antiproton, while W^- bosons are produced by down and anti-up quarks. Since up quarks generally carry more of the proton's momentum than down quarks do, W^+ bosons tend to move in the proton direction. Similarly, anti-up quarks carry more of the antiproton's momentum than anti-down quarks and W^- bosons tend to move in the antiproton direction.

Measuring this asymmetry provides information about the momenta of the quarks in the proton, information that is crucial for all comparisons between theoretical predictions and experimental results at a hadron collider. The functions describing the behavior of the proton's constituents cannot be calculated and must be measured.

[Secou Level 3](#)**Wilson Hall Cafe****Thursday, May 25**

- Santa Fe Black Bean
- Sloppy Joe
- Stuffed Peppers
- Sauteed Liver & Onions
- Baked Ham & Swiss on a Ciabatta Roll
- California Pizza
- Crispy Fried Chicken Ranch Salad

[Wilson Hall Cafe Menu](#)**Chez Leon****Thursday, May 25****Dinner**

CLOSED

Wednesday, May 31**Lunch**

- Corn Crepes w/Chicken & Poblano Chilies
- Pico De Gallo
- Tropical Fruit Platter

[Chez Leon Menu](#)

Call x4598 to make your reservation.

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Wolbers said.

The biggest roadblock for measuring the mass of the top quark isn't the accuracy of the detectors but the physicists' means of gauging, or calibrating, the accuracy of their detector. Arguin gauged CDF's accuracy by looking at how accurately it measures the mass of the W boson--a particle whose attributes are known and can be measured precisely using the characteristic sprays of particles ("jets") that mark its decay. The greater the amount of Tevatron data analyzed using Arguin's calibration method, the more accurately the top quark mass can be determined.

Award winners receive a plaque and \$3000, funded by the Universities Research Association. Arguin, currently a post-doc at Lawrence Berkeley National Laboratory, will receive the award at the annual Users' Meeting next week and will give a short talk describing the thesis. He hopes his measurements of the top quark will help scientists predict the mass of the Higgs boson.

--Jennifer Lauren Lee

Astrophysics alumni gather at Fermilab to talk, catch up

Former Fermilab Astrophysicist Dave Lindley has written for the journals *Nature* and *Science*, and authored books about physics. (Click on image for larger version.)

Since the W boson decays quickly, we cannot observe it and must rely upon its decay products--in this case a muon and a neutrino. The asymmetry in W boson production is reflected in the directions of the particles it decays into; since the neutrino escapes the detector without interacting, we use the direction of the muon for our measurement.

The asymmetry, shown in the figure, is the difference between the numbers of positive and negative muons found at a given angle in the detector divided by their sum at that angle. The uncertainties in the measurement are dominated by statistics, boding well for future measurements as luminosity accumulates. This is the first $W \rightarrow \mu \nu$ asymmetry measurement from Run II.



Above: Sinjini Sengupta and Susan Blessing contributed to this analysis. **Below:** Marco Verzocchi has been leading the effort to develop the trigger list for Run IIB that will allow DZero to continue to collect the data for this and all of its other physics analyses.

[Result of the Week Archive](#)**Accelerator Update**

[Fermilab Result of the Week archive](#)

[Fermilab Safety Tip of the Week archive](#)

[Linear Collider News archive](#)

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About 20 Fermilab alumni traveled from as far as China to attend the theoretical astrophysics reunion here yesterday and give talks about their recent work. Astrophysicist-turned-science-writer David Lindley discussed the impetus behind his book, *The End of Physics*. "It was a skeptical take on Hawking's statement back in the 70s that the end of physics might be in sight," he said. "The idea that we will soon have a handle on how the universe works is fine, but the idea that people will 'solve' physics has not withstood the test of time." Among the 18 other speakers in the day-long event were Michael Turner of the University of Chicago, Enrique Gaztanaga of Barcelona, and Pengjie Zhang, of Shanghai. You can see a full list of participants [here](#).

--Siri Steiner

Stanford Linear Accelerator Center sets luminosity record

SLAC's electron-positron collider, known as PEP-II, set an all-time peak luminosity record of $10.028 \times 10^{33} \text{ cm}^{-2} \text{ s}^{-1}$ on Monday, May 22. A record for luminosity during a single shift was also reached that day, with 251.6 inverse picobarns delivered by PEP-II and 243.26 inverse picobarns recorded by the BaBar detector. SLAC expects to set additional records in the coming days, including delivered and recorded luminosity in a 24 hour period. You can read the *SLAC Today* story [here](#).

Science Grid This Week

May 23-24

- Startup
- Beam established to MiniBooNE
- MI and Recycler succeeded in circulating beam
- Machine Reports

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Announcements

NALWO Spring Tea

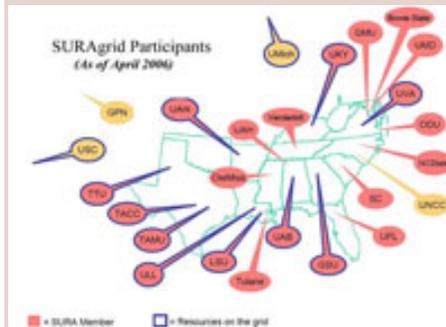
Spring Tea

Barbara Oddone will host the NALWO Spring Tea today, May 25, from 11:00 a.m. to 1:00 p.m. The tea will be held at her home, Site #29, just inside the Wilson Street gate (turn right at the driveway just beyond the gate). Car pools encouraged. Please bring your favorite dessert or appetizer from your country, but if you cannot bring a treat, please come anyway! For additional information contact Susan Kayser at sukayser@fnal.gov, Rose Moore at rosecraigmoore@comcast.net, 630/208-9309, or the Housing Office, 630/840-3777 or housing@fnal.gov.

Batavia Road entrance closed to cars and bicycles

The Batavia Road entrance is closed through Friday, May 26, while the City of Warrenville re-paves roadways and carries out other construction work along Batavia Road. Delays are expected to continue until early June, even after the entrance re-opens. Drivers and bicyclists should use Pine and Wilson Street entrances until the work is completed. Pine Street entrance hours are 6:00 a.m. to 8:00 p.m. for the general public and 24 hours a day, 7 days a week for employees. The Wilson Road entrance

SURA Brings Grids to Southeastern United States



Map of SURAGrid participants.

SURAGrid, the cyberinfrastructure initiative of the Southern Universities Research Association, has received authorization for \$1 million over the next three years from the SURA Board of Trustees to expand its resources and staff and to develop new grid communities across the Southeastern United States.

[Read More](#)

In the News

House Committee on Science, May 24, 2006: Boehlert praises full funding for DOE portion of American Competitiveness Initiative

WASHINGTON, May 24, 2006 – House Science Committee Chairman Sherwood Boehlert (R-NY) today delivered the following floor statement in support of the Energy and Water Appropriations bill:

Mr. Chairman: I rise in strong support of this bill, and I want to thank Chairman Hobson and his staff for consulting closely and continuously with me, Chairman Biggert of our Energy Subcommittee, and the Science Committee staff as they put together this bill.

[Read More](#)

In the News

hours are 6:00 a.m. to 6:00 p.m., Monday through Friday. For more information, contact Tom Prosapio at prosapio@fnal.gov

Federal Citizen Information Center

Looking for information about Social Security, getting a passport, or renewing a driver's license? The federal government now offers a one-stop Web page that provides official information on all government services you can use: FirstGov.gov. Or call 1-800-FED-INFO to receive the information you need.

Weekly Time Sheets Due Tomorrow

With the upcoming memorial holiday, weekly time sheets are due in payroll by 10:00 a.m on Friday May 26.

Recreation Ticket Service Charge

Beginning in May there will be a nominal \$.25 service charge added to all ticket and discount book sales in the Recreation Office.

International Folk Dancing

International Folk Dancing will meet Thursday, May 25, at Kuhn Barn before moving to Ramsey Auditorium for the summer on June 1. 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. Info at 630-584-0825 or 630-840-8194 or folkdance@fnal.gov.

[Upcoming Activities](#)

**Beacon News,
May 24, 2006:**

Painted dinosaurs prepare for debut

AURORA — A new herd has moved into SciTech.

But it won't be there for long. By this weekend, this herd should be roaming the streets of Aurora for the summer.

On Tuesday, SciTech Executive Director Dr. Ronen Mir unveiled the stars of the museum's Dinosaurs on Parade Roam Aurora art project.

[Read More](#)