

## Calendar

### Friday, October 7

**2:30** Particle Astrophysics Seminar

(NOTE DATE) - Curia II

Speaker: E. Kolb, Fermilab

Title: Acceleration Without Dark Energy

**3:30 p.m.** Director's Coffee Break -

2nd Flr X-Over

**4:00 p.m.** Joint Experimental Theoretical

Physics Seminar - 1 West

Speaker: M. Wascko, Louisiana State

University

Title: Charged Current Single  $\pi^+$

Production at MiniBooNE

**8:00 p.m.** Lecture - Auditorium

Dr. Robert Lang: Origami in Art, Science and Technology

### Saturday October 8

**8:00 a.m.** [World Year of Physics](#)

[Symposium](#) - Ramsey Auditorium

### Monday, October 10

**2:30 p.m.** Particle Astrophysics Seminar

- Curia II

Speaker: A. Sarajedini, University of Florida

Title: Local Group Stellar Populations with HST: The Bulge of M31 and RR Lyraes in M33

**3:30 p.m.** Director's Coffee Break -

2nd Flr X-Over

**4:00 p.m.** All Experimenters' Meeting -

Curia II

Special Topic: Tevatron Orbit Stabilization

## Weather

## Fermilab Runners Prepare for Chicago Marathon



Fred Nobrega, JJ Schmidt, Hans Wenzel, Dmitri Tsybychev, Jim Steimel, Elena Shemyakina, Sasha Shemyakin, Ron Moore, Konstantin Anikeev, Bill Pellico, Doug Glenzinski, Stephen Mrenna, Guillermo Gomez-Ceballos, Markus Klute. (Click on image for larger version.)

Fifteen Fermilab employees and family members will join more than 40,000 runners in The LaSalle Bank Chicago Marathon this Sunday. After months of training five to seven days a week, the runners will tackle the 26.2-mile course together, in three teams. Members of the Fermilab teams, dubbed the Fermilab Accelerators, the Fermilab Soccer Team and the Fermions on the Run, are running anywhere from 40-90 miles a week, sometimes together on their lunch breaks.

The Fermilab runners decided to enter as teams because of the extra amenities, said runner Jim Steimel, of the Accelerator Division. Teams are offered complimentary gear checks, private changing rooms and bathrooms, post-race food and drinks, massage therapy and a team photo. Team members are ranked according to their age division and their individual scores are added to those of their team members.

## ILC NewsLine

## ATF - A Unique Facility for Nano-beam



ATF is the forefront of the low-emittance and high intensity beam steering technology. (Photo by Tsunehiko Omori.) (Click on image for larger version.)

Traditional circular lepton accelerators, like LEP and KEKB accelerate electrons and positrons in rings into opposite directions respectively. A bunch of electrons and another bunch of positrons encounter each other many times in a ring, and consequently have many chances to collide. In the ILC on the other hand, electrons and positrons are accelerated oppositely, meeting only once at the collision point. No consolation match is allowed.

Solution? Squeeze the size of the electron- and positron-bunches as much as possible, down to the nanometer level. This increases the chance for electrons and positrons in each bunch to collide at the interaction point. But this is easier said than done. At KEKB, electrons and positrons are colliding at the world record luminosity in bunches that are a few micrometers, the thickness of a single strand of hair. For the ILC, we need to squeeze the beam bunches to even thinner ones, a few nanometer. Think about shooting down a bird in the sky.



Partly Cloudy 54°/36°

[Extended Forecast](#)

[Weather at Fermilab](#)

### Current Security Status

[Secou Level 3](#)

### Wilson Hall Cafe

#### Friday, October 7

- New England Clam Chowder
- Western BBQ Burger
- Baked Fish w/Roasted Leeks and Peppers
- Swedish Meatballs
- Bistro Chicken and Provlone Panini
- Assorted Personal Size Pizzas
- Carved Top Round of Beef

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

[Wilson Hall Cafe Menu](#)

### Chez Leon

#### Wednesday, October 12

##### Lunch

- Catfish with Roasted Peppers
- Lemon Grass Rice
- Vegetable of the Season
- Ginger Plum Turnovers

#### Thursday, October 13

##### Dinner

- Shrimp Bisque
- Quail w/Garlic Rosemary Sauce
- Mashed Roots
- Green Beans w/Bacon & Balsamic Vinegar
- Chocolate Hazelnut Souffle

[Chez Leon Menu](#)

This will be Steimel's fourth Chicago Marathon. He ran his first after beginning a diet and exercise regimen years ago. "I had to think of a way to keep it up over the winter, so I said, 'You know what I'll do, I'll sign up for a marathon,'" he said. "It was a way to encourage myself to get some good runs in and stay in shape." Steimel said he hopes to beat his fastest time of two hours and 42 minutes in the upcoming race.

Markus Klute, of CDF, has a slightly different objective for his first-ever marathon. "My goal is just to finish - on the same day," he said. The race starts at 8 a.m. and will be broadcast live on CBS 2 Chicago and ESPN 1000.

—Kendra Snyder

### Photo of the Day



12th annual DZero International Two on Two [Sand Volleyball Tournament](#). From left to right: Miroslav Kopal and Len Christofek (champions) and Sarka Malkova and Arnold Pompos (finalists). (Click on image for larger version.)

### In the News

Now you need to aim for a thousand times smaller target, such as a pinhead at the same distance.

To study the technical challenges of ultra-narrow "beam-size", or "emittance" in the technical terms, Accelerator Test Facility (ATF) was constructed in 1997 at KEK. In this facility, electron-beams are accelerated by the S-band micro-cavity linac to the energy of 1.3 GeV. The beam is then injected into a "race track"-shape damping ring. There, electron-beams are "cooled down" into nanometer size. ATF has achieved the lowest emittance of 4 pmrad in 2001, the world-champion record of small electron-beam size.

ATF has become a unique facility to provide a test-bed for low-emittance beam control. Many accelerator physicists around the world gather into ATF and test the performance of their apparatus in make-shift operations. "This facility is unique for the demonstration of beam-orbit control with the resolution of a few nanometers", says Professor Urakawa, the project manager of ATF, "and for the demonstration of long-term stabilization with beams of several-tens nanometers, and as the place to train young physicists for ILC commissioning."

—Youhei Morita and Kaoruko Saeki

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### Announcements

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## From *Nature News*, Published online on October 6, 2005

### Particle physics: Do the space-warp

Physicist takes on large collider project.

There is good reason to suppose that the Universe has more than three spatial dimensions. The first dedicated search for warped extra dimensions has drawn a blank, but hopes are high for the future.

With a couple of notable and distinguished exceptions, fundamental science has usually progressed through experimental discoveries, followed later by theoretical enlightenment. Einstein's general theory of relativity is often cited as one of the exceptions to the rule. In the past couple of decades, however, the standard model of particle physics has also overtaken experiment by successfully predicting what is later observed. Theories with extra dimensions of space could follow suit, but results<sup>1</sup> from the D0 experiment at Fermilab, Chicago — presented in *Physical Review Letters* — show that any additional gravitational force tied to the existence of such dimensions must be weak.

[Read More](#)

## Lecture: Origami in Art, Science and Technology

Robert J. Lang, Artist & Engineering Consultant, will give a lecture Tonight, October 7 at 8 p.m. in the Ramsey Auditorium. Admission is \$5.

## World Year of Physics Symposium

Saturday, October 8 at Fermilab.

[More Information](#)

## Upcoming Classes

October 11: Excel Advanced

October 12: Word Advanced

October 11, 12, and 26: Interpersonal Communication Skills

October 24-27: C++ for Embedded Programmers

[More Information](#)

## New Classifieds on Fermilab Today

New [classified ads](#) have been posted on Fermilab Today.

## Upcoming Activities