


Calendar

Tuesday, Feb. 3
3:30 p.m.
DIRECTOR'S COFFEE
BREAK - 2nd Flr X-Over
4 p.m.
[Accelerator Physics and Technology Seminar](#) - One West
Speaker: Dileep K. Bhogadi,
University of Kansas / Korea
University of Technology
Title: A Novel Tele-
Manipulation for Cell Injection

Wednesday, Feb. 4
3:30 p.m.
DIRECTOR'S COFFEE
BREAK - 2nd Flr X-Over
4 p.m.
[Fermilab Colloquium](#) - One West
Speaker: John A. Rogers,
University of Illinois, Urbana-
Champaign
Title: Materials for Stretchable
Electronics - Electronic
Eyeballs, Brain Monitors and
Other Applications

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

Weather

 Chance of snow
14°/-2°

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

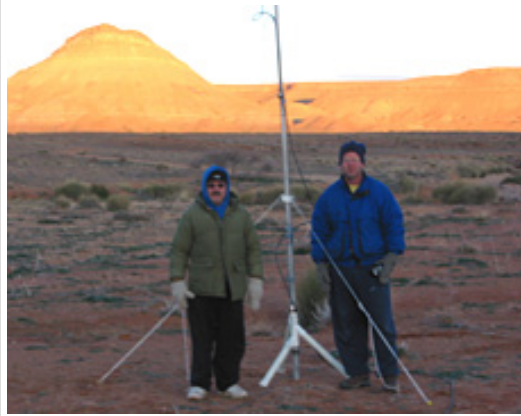
Current Security Status

[Secon Level 3](#)

Wilson Hall Cafe

Feature

Can you hear me now? Fermilab engineers' desert adventure



Fermilab engineers Ralph Pasquinelli and Dave McGinnis use a portable antenna to check radio noise levels in the Sahara Desert in Morocco last month.

Television commercials portray nightmarish "dead zones" where cell phone signals vanish.

Places, they say, to avoid.

Unless you are Fermilab engineers Ralph Pasquinelli and Dave McGinnis. The duo, along with Carnegie Mellon University's Kevin Bandura, a Moroccan team from Al Akhawayn University and a French team from Saclay and Orsay, traveled to Morocco last month to find a home uncluttered by radio wave chatter for the 21 cm project.

The proposed 500 MHz-1000 MHz radio telescope will make a 3D map of the universe using radio frequency waves, which will help astronomers understand the mysterious dark energy.

"Early on, there was a stage in the expanding universe where variations in density were caused by cosmic sound waves, called baryon acoustic oscillations, ricocheting through the universe. Dark energy affected how the cosmic sound waves travelled. As the universe expanded and cooled, these density variations froze out, or stopped changing. By measuring the density fluctuations of the universe in 3D we can hope to understand more about dark energy," McGinnis said.

Cell phones, radios and TVs use the same radio frequency band, which can drown out the tiny radio signal coming from outer space.

Director's Corner

Chicagoland collaboration



Deputy Directors Kim and Isaacs, VP for National Labs Don Levy and Directors Rosner and Oddone at the fifth Collaboration Meeting

Yesterday afternoon we had the fifth collaboration meeting bringing together scientists and program leaders from Argonne National Laboratory, Fermilab and the University of Chicago. Over the last two years we have seeded several collaborative activities, in both the scientific and operational domains, that are now well established.

It was time to take stock of the progress in these collaborations. Both laboratory directors, the university vice president for research and national labs and the university dean for physical sciences attended the meeting along with some 80 scientists. The meeting started with the deputy directors presenting both the Fermilab and ANL strategic plans.

The collaboration on neutrinos is long standing, involving MINOS and the construction of NOvA now and in the future the development of the long-baseline neutrino program at DUSEL. A new Drell-Yang experiment, E906, will be led by ANL and carried out at Fermilab. There are many new areas where the two laboratories and the university combine their strengths to move science forward. An example is the study of surfaces in superconducting cavities, developing the scientific underpinnings that will produce high-gradient cavities reliably and inexpensively. Massive computation and simulation using the petaflop high-performance engines at ANL are a key component of our initiatives in lattice QCD, in computational cosmology and the

Tuesday, Feb. 3

- Tomato bisque
- Lemon pepper club
- Beef fajitas
- Smart cuisine: Korean garlic chicken
- Grilled chicken Caesar wrap
- Assorted sliced pizza
- Rio Grande taco salad

[Wilson Hall Cafe Menu](#)

Chez Leon

Wednesday, Feb. 4

Lunch

- Grilled pork loin with braised red cabbage and wild mushrooms
- Baked stuffed apples

Thursday, Feb. 5

Dinner

- Closed

[Chez Leon Menu](#)

Call x3524 to make your reservation.

Archives

[Fermilab Today](#)

[Result of the Week](#)

[Safety Tip of the Week](#)

[ILC NewsLine](#)

Info

[Fermilab Today](#)

is online at:

www.fnal.gov/today/

Send comments and suggestions to:

today@fnal.gov

"We needed to get away from man-made items, to see whether the site would be quiet enough," Pasquinelli said.

The sensitive Fermilab test equipment, which survived Moroccan sand, wind, rain, snow and airports, did detect some cell phone signals, but at a level a million times smaller than what is seen around Fermilab. The team also measured large swaths of the radio frequency spectrum and found no interfering radio signals, which made Morocco's remote desert one of the quietest of the potential experiment sites scouted, including those in South Africa, Australia and Canada.

The collaborators hope to get funding for the estimated \$20-25 million project from the Arab states. The collaboration plans to keep the cost down by using inexpensive cell phone technology for the receiver amplifiers and signal processing electronics.

The antenna measures about 150 meters by 150 meters and will feed more than 2,000 extremely sensitive radio receivers. Even with such a large, sensitive telescope, the telescope will have to integrate data for years to measure the tiny radio signal with enough precision.

-- *Rhianna Wisniewski*

In the News

Physicists set plan in motion to change publishing system

From *The Chronicle of Higher Education*, Jan. 30, 2009

In what some are calling a peaceful revolution, researchers have mounted a takeover of high-energy-physics publishing. One signature at a time, national research agencies and university libraries have pledged to support a radical new system that would replace expensive subscriptions to leading journals with membership in a nonprofit group. The new organization would then dole out money to journal publishers, while pushing them to distribute all articles free online and to keep their prices in check.

The key: By teaming up, the libraries, which pay the bills, and the researchers, who provide the articles, will exert unprecedented leverage. The strategy might also convince journal editors — who have been reluctant to give away all of their content for fear of losing money — that libraries will continue to pay

development of accelerator physics simulations. Both laboratories have strengths in accelerator design and operations and will collaborate on future accelerators like the High Intensity Neutrino Source (HINS), Project X and ILC. We are also enhancing our collaboration on LHC physics and detector upgrades.

The grant program by U of C that is part of the DOE contract with FRA supports the development of collaboration among the three institutions. Ultra-fast timing detectors to measure transit times 10 to 100 times better than current detectors, the study of niobium surfaces and the quantitative measurement of fluorescence in air relevant to Pierre Auger are all making significant progress.

Another exciting collaborative program is in the education of the next crop of accelerator physicists. The Lee Teng fellowship for undergraduates has been quite successful in bringing students to Fermilab and Argonne to introduce them to accelerator physics before they make choices for their graduate education. Further, ANL and Fermilab have started a collaboration with Northern Illinois University, College of DuPage and the Illinois Institute of Technology to prepare students for technical careers in support of accelerator operations and R&D.

While the collaboration of these three institutions is ever closer, all the projects are supportive of a national program that involves many institutions nationally.

Accelerator Update

Jan. 30 - Feb. 2

- Five stores provided ~65.75 hours of luminosity
- Booster Chopper problems
- Very good weekend for luminosity

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Announcements

them even in an open-access system.

[Read more](#)

In the News

Entangled particles face sudden death

From **ABC Science**, Feb. 2, 2009

Teleportation and quantum encryption could be a more distant reality with the discovery that entanglement can unexpectedly disappear.

Entanglement 'connects' quantum particles no matter how far away they are, making it possible to determine the state of a quantum particle based on the other.

Although this connection degrades over time, it had been thought to last forever.

But in a paper published in the journal *Science*, two physicists show that connection can suddenly and irrevocably disappear, a phenomenon called entanglement sudden death (ESD).

"The degree of information entangled can disappear faster than the information itself," says Professor Joseph Eberly, a physicist at the University of Rochester, who, along with Associate Professor Ting Yu, co-authored the paper. "It's completely non-classical physics."

[Read more](#)

Latest Announcements

[Muscle Toning Classes - Feb.3](#)

[Kyuki Do Classes - Feb. 16](#)

[Have a safe day!](#)

[Discount tickets: Disney On Ice Presents Worlds of Fantasy](#)

[Daycamp information and registration](#)

[English Country Dancing, Feb. 1](#)

[Child Care program offered](#)

[Outlook 2007 New Features classes Feb. 3 and 26](#)

[PowerPoint 2007: New Features class offered Feb. 3](#)

[Word 2007: New Features class Feb. 4](#)

[Excel 2007: New Features class Feb. 4](#)

[Nominations requested for job profiles](#)

[Barn Dance Feb. 8](#)

[Barn Dance Feb. 15](#)

[Facilitating Meetings That Work class offered Feb. 16](#)

[Fermilab Blood Drive Feb. 17 & 18](#)

[Discount tickets to Smucker's Stars On Ice - Feb. 21](#)

[Discount tickets: World's Toughest Rodeo presents toughest cowboy - Feb. 21](#)

[Conflict Management & Negotiation Skills class offered Apr. 1](#)

[Interpersonal Communication Skills class offered Apr. 8](#)

[Additional Activities](#)

