Fermilab Today Wednesday, Nov. 19, 2008

Calendar

Wednesday, Nov. 19
9 a.m. - 2 p.m.
CMS Upgrade Workshop - One West
3:30 p.m.
DIRECTOR'S COFFEE BREAK - 2nd Flr X-Over
4 p.m.
Fermilab Colloquium - One West
Speaker: David Hitlin, California Institute of Technology
Title: Searching for New Physics at SuperB – The Super Flavor Factory

Thursday, Nov. 20
THERE WILL BE NO PHYSICS AND DETECTOR SEMINAR THIS WEEK
9 a.m. - 7 p.m.
CMS Upgrade Workshop - One West
2:30 p.m.
Theoretical Physics Seminar - Curia II
Speaker: Elvira Gamiz, University of Illinois, Urbana-Champaign
Title: Lattice Determination of B^0bar-B^0 Mixing Parameters in the Standard Model and Beyond
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.
Special Joint Experiment-Theoretical Physics Seminar - One West(NOTE DATE)
Speaker: Katsuki Hiraide, Kyoto University
Title: Search for Charged Current Coherent Pion Production by Neutrinos at SciBooNE

Click here for NALCAL, a weekly calendar with

Feature

Fermilab holds energy-saving seminar for mayors

FESS head Randy Ortgiesen gave a talk at the Clean Air Counts seminar for the Metropolitan Mayors Caucus held at Fermilab on Oct. 29.

A few dozen representatives for local mayoral offices gathered at Fermilab last month to learn energy saving measures and strategies from the laboratory and industry experts.

Fermilab has decreased its energy consumption in non-scientific facilities by 13.2 percent since 2003, and plans to reach a 30 percent reduction by 2015.

“We wanted to enlighten folks from different municipalities on what the federal sector is doing and what initiatives we are pursuing,” said environmental officer Eric Mieland. “We can lead by example and try to influence the private sector to take measures to conserve energy.”

The Clean Air Counts seminar for the Metropolitan Mayors Caucus held at Fermilab last month gave Facilities and Engineering Services Section head Randy Ortgiesen a chance to present on Fermilab’s energy consumption, challenges and energy saving plans for the future.

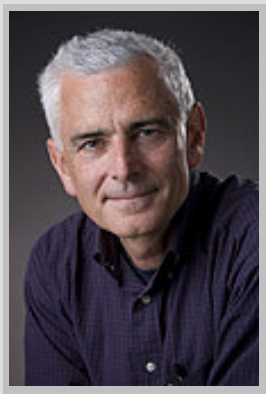
“Anytime you can hear what anyone is doing, it is beneficial,” said Dan Lutzenkirchen, a facility manager for DuPage County.

Lutzenkirchen and Dan Baran, who works in a DuPage County power plant, both attended the meeting and visited Fermilab for the first time. They came to gather information, particularly from a larger-scale facility, that

From Center for Particle Astrophysics

Inner space, outer space: quantum space

Craig Hogan, head of the Center for Particle Astrophysics, wrote this week’s column.


Craig Hogan

“Inner space, outer space” is Fermilab’s term for the observation that everything in the universe is connected to everything else. Experiments have found that even the biggest and smallest things in the universe depend on each other in surprising, profound and sometimes subtle ways.

Fermilab’s Tevatron, the best operating microscope in the world, allows us to study inner space. The Dark Energy Survey, for which Fermilab is building a giant camera, will map quantum effects on the largest cosmic scales of outer space. Now interferometers, a new kind of instrument to detect gravitational waves, promise to scrutinize inner space and outer space at the same time in the same apparatus. They’ll possibly allow a glimpse of a new kind of big-small interconnectedness: quantum space.

Interferometers such as the Laser Interferometer Gravitational Wave Observatory in the U.S. and the GEO600 project in Germany use laser cavities to create a coherent quantum state that spans several kilometers. They look with extraordinary precision for tiny distortions of space--even smaller than the distances accessible by the Tevatron. Their precision is like measuring the position of Mars to within the diameter of an atom.

Interferometers were built to study gravitational radiation. But recently we realized they could also discover new physics they were not designed to detect--including phenomena at the Planck scale, the smallest fundamental interval of space and time.

Black hole physics and string theory suggest that quantum spacetime might be holographic: Our familiar three dimensions of space might

links to additional information.

Weather

Sunny
46°/25°

Extended Forecast
Weather at Fermilab

Current Security Status

Secon Level 3

Wilson Hall Cafe

Wednesday, Nov. 19
- Smart cuisine: chicken noodle
- Pizza burger
- Smart cuisine: *maple Dijon salmon
- Smart cuisine: Mongolian beef
- California club
- Assorted sliced pizza
- Chicken pesto pasta

*Carb restricted alternative

Wilson Hall Cafe Menu

Chez Leon

Wednesdsay, Nov. 19
Lunch
- Asian grilled flank steak with rice noodles and vegetables
- Coconut caramel cake

Thursday, Nov. 20
Dinner
- Steamed mussels with white wine & thyme
- Grilled marinated lamb chops
- Mushroom risotto
- Sautéed spinach
- Mocha soufflé

Chez Leon Menu
Call x3524 to make your reservation.

Archives

they could take back to their institutions.

In FY07, Fermilab consumed enough energy to power 45,000 homes for that year. Although Fermilab has already decreased its energy consumption, the laboratory will need to apply further reduction strategies in the coming years. The laboratory's 30 percent reduction goal from a 2003 baseline is part of the Department of Energy's Transformational Energy Action Management (TEAM) initiative.

"We'll need to support more scientific achievements with less energy consumption in non-scientific facilities," Ortgiesen said.

To meet the TEAM goals, which include energy and water reduction as well as renewable fuels, energy and sustainability goals, Ortgiesen said that the laboratory will need to employ a plan. It will consist of facility consolidation, environmental and energy-efficient upgrades and building designs that meet green standards.

Eve Pytel, assistant director for Clean Air Counts within the Metropolitan Mayors Caucus, said the group chose Fermilab to learn about what a federal and large-scale facility does to manage energy. Fermilab was also one of the first members of the Clean Air Counts organization.

--Rhianna Wisniewski

In the News

Quantum effects bring no solace for physicists

From ***New Scientist***, Nov. 17, 2008

One of the grandest visions of physics could be a mirage. Conventional thinking has it that all the fundamental forces of nature diverged from one single force soon after the big bang. Now it seems that quantum effects may make it impossible to prove if this idea is correct.

In the 1970s, data from the Large Electron Positron Collider at CERN near Geneva hinted that the strong, weak and electromagnetic forces were beginning to converge at the energies created during particle collisions. By extrapolating this convergence to much higher energies, physicists speculated that the forces would become indistinguishable at around 1016 gigaelectronvolts. The universe was in this energy state soon after the big bang, which suggests that all the forces may once have been unified.

be the result of a quantum theory that only has two large spatial dimensions. The third dimension emerges as time evolves: picture a two-dimensional sheet sweeping through space at the speed of light.

Such a holographic universe would have a kind of quantum blurriness in its geometry that would appear in interferometers as "holographic noise." There are hints that this excess noise might already appear in data recorded by interferometers. We may soon have the first direct evidence for the quantum geometry of our universe and obtain a precise determination of the smallest fundamental interval of time. If so, this measurement could revolutionize our understanding of the universe, similar to the measurement of "noise" that led to the discovery of the cosmic microwave background in 1965.

Announcements

Have a safe day!

Annual enrollment Nov. 17 - Dec. 10

Monthly leave sheets due today

Weekly time sheets due Nov. 20

International Folk Dancing, Nov. 20

Fermilab Singers to perform Nov. 20

Annual enrollment carrier meetings Nov. 21, Dec. 4, 9

Fermilab Arts Series presents Klezmatics Nov. 22

English Country Dancing, Nov. 23

Director's volunteer award Nov. 25

Exciting Explorations! child care program offered Nov. 24-26

No International Folk Dancing on Thanksgiving, resumes Dec. 4

Fidelity representative at Fermilab Dec. 3

Education Office holiday sale, Dec. 3 & 4

International Folk Dancing, Dec. 4

The University of Chicago Tuition

Fermilab Today

Result of the Week

Safety Tip of the Week

ILC NewsLine

Now Xavier Calmet of the Catholic University of Louvain in Belgium and his colleagues argue that it may be impossible to prove if this theory is right via any conceivable experiment in a particle accelerator.

Read more

Remission Program deadline Dec. 17

Additional Activities

Submit an announcement

Info

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