

Calendar

Tuesday, Jan. 6
3:30 p.m.
 DIRECTOR'S COFFEE
 BREAK - 2nd Flr X-Over
4 p.m.
 Accelerator Physics and
 Technology Seminar - One
 West
 Speaker: Alexey Burov,
 Fermilab
 Title: Head-Tail Modes for
 Strong Space Charge (Part 1)

Wednesday, Jan. 7
11 a.m.
 Traffic Safety Seminar - One
 West
 Speaker: John Denofrio, Green
 Light Driving School
 Title: Winter Driving Skills

3:30 p.m.
 DIRECTOR'S COFFEE
 BREAK - 2nd Flr X-Over
4 p.m.
[Fermilab Colloquium](#) - One
 West
 Speaker: John Sarrao, Los
 Alamos National Laboratory
 Title: Achieving
 Transformational Materials
 Performance in a New Era of
 Science

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

Weather

 **Snow**
 34°/24°

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

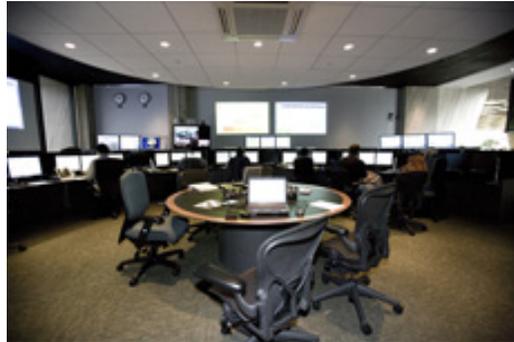
Current Security Status

[Secou Level 3](#)

Wilson Hall Cafe

Feature

CMS detector completes cosmic practice runs



CMS staff take a shift in the Remote Operations Center.

Experimentalists at the CMS detector are using the downtime before the Large Hadron Collider is back up and running to get in some exercise.

Researchers used the detector to record data from more than 355 million cosmic events during four weeks in October and November. This was the longest test run with the magnetic field on.

“Since everything was in place, we could really show the whole detector working together,” said Ian Fisk, deputy manager for CMS software and computing. “It’s a very complicated system, and what you’re looking for is to understand its behavior.”

Cosmic rays that constantly pass through the earth activate triggers in the detector’s sensors just as particles scattered by a collision would do. By tracing their paths and noting the amount of energy the detector records without the presence of beam, researchers can calibrate the detector and better learn how to read it.

“You look for the same things you would if you had beam,” said Dave Mason, a Fermilab postdoc.

But, if you see peaks without the beam operating, you know you need to work on eliminating background interference, Mason said.

Researchers used the test run to find and fix foibles in the detector, said Kaori Maeshima, U. S. CMS operations coordinator working at Fermilab.

“There was nothing really bad, no show-stoppers,” she said. “But we learned lots of

Director's Corner

Resolutions

The new year brings about new resolve. It is customary to make resolutions that promise to bring about improvements in how we live our lives. These resolutions are easy to make and often quite difficult to keep. It is a good thing that the score keeping is pretty sloppy.



Pier Oddone

In this atmosphere of increased resolve brought by the new year, it is useful to think of all that we want to accomplish at Fermilab in 2009. For us, it is a more serious affair since a lot of planning goes into setting our goals for 2009; they are public and the DOE will surely keep score.

The Tevatron is breaking new records constantly. Maintaining this trajectory through 2009 will support our case for running the Tevatron at least through 2010. The doubling time for collected data is only two years, even after 20 years of running because the machine has improved constantly. The neutrino program with MiniBooNE and MINOS will continue to produce world-class results and set the stage for future neutrino projects at the lab. The LHC will turn on and hopefully will show some spectacular early results. The particle astrophysics program in dark matter, dark energy and ultra-high-energy cosmic rays is again poised for important results.

While the physics program through 2009 will be vital, probably the most important task in front of us is to develop the future projects that will sustain the laboratory and the community through the next decade, after the Tevatron shuts down. NOvA, MINERvA, MicroBooNE, DES and JDEM, larger COUPP and CDMS detectors, the DUSEL Beamline and detector, the mu2e experiment, Project X, the LHC and its upgrades, the ILC R&D and the muon collider R&D constitute a huge agenda for the laboratory. It would tax us even if we were not running a full physics program. These programs will be lean during the next couple of years so they will be in a position to benefit from the staff that will roll off the Tevatron. All of them will involve national and international

Tuesday, Jan. 6

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

[Wilson Hall Cafe Menu](#)

Chez Leon

Wednesday, Jan. 7 Lunch

- Chicken enchiladas
- Refried beans
- Spanish rice
- Pineapple flan

Thursday, Jan. 8 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](#)

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www.fnal.gov/today/

Send comments and suggestions to:

today@fnal.gov

useful things.” They discovered, for example, that ambient light in the collision hall affected one component of the detector. This was fixed.

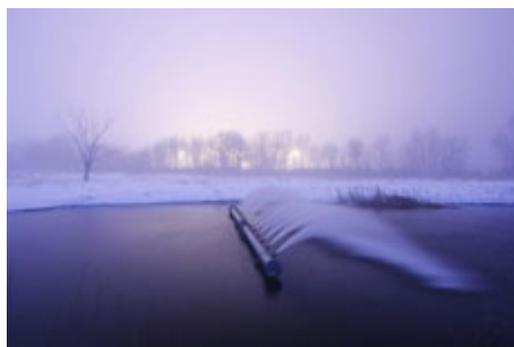
The run also exercised the LHC Computing Grid, which will process and distribute the vast amount of data that the LHC will collect once at full power. All of CMS’s Tier-1 centers, including Fermilab, received the data, along with some Tier 2s and at least one Tier 3.

The CMS collaboration plans to conduct more cosmic runs in the next several months.

-- *Kathryn Grim*

Photo of the Day

Winter serene



AD’s Marty Murphy took this photo at the Main Injector (MI50) pond on the evening of Friday, Dec. 26. The thick snow on the ground, plus the day’s warm temperatures caused a dense fog.

In the News

For a big view of inner Earth, catch a few...Geoneutrinos

From *Science News*
Jan. 17, 2009

Were the Earth a crystal ball, you might gaze 2,900 kilometers down to its outer core with a telescope. The Earth, though, is frustratingly opaque — to light. Most knowledge of the planet’s internal structure comes from studying seismic waves, which give a kind of ultrasound image. Inferences about Earth’s internal chemistry rely on the elements found in near-surface rocks, meteorites and the sun.

Recently, geoscientists have developed a new tool for probing the Earth’s innards. Borrowing a page from astrophysics, they are using the curious subatomic particles known as neutrinos. Astrophysicists have used neutrino telescopes for decades to study neutrinos originating in the sun and elsewhere in the cosmos. Now earth scientists are taking a neutrino telescope and looking down, to illuminate the Earth’s interior by detecting “geoneutrinos” — neutrinos

collaborations since they collectively exceed the capacity of our laboratory.

High on our list is to maintain and even improve our performance in safety. Last year we lowered our injury rates to an unprecedented low level, a rate that is hard to measure with any statistical precision. We must maintain this focus on safety. This achievement is its own reward because it keeps all of us safe.

We also have a large agenda of improvements in the operational side of the house. We will implement the integrated quality assurance system for the lab, make a transition to uniform practices across divisions in engineering and start to move to more coherent IT integrations in support of laboratory functions. This will happen in addition to the myriad small improvements that take place in our everyday operations.

To accomplish all this is a tall order and will require many skills that we must deploy efficiently. And we need a budget! Stay tuned.

Accelerator Update

Dec 29 to Jan 5

- Seven stores provided ~124.25 hours of luminosity
- A3 harmonic filter repaired
- Pelletron VME problems continue
- Recycler and MI have kicker problems
- Store 6698 aborted due to C0 shunt trip
- Pbar water-skid LCW leak fixed
- Stash lost due to beam valve failure

**The integrated luminosity for 12/29/08 to 1/5/09 was 56.04 inverse picobarns.

[Read the Current Accelerator Update](#)

[Read the Early Bird Report](#)

[View the Tevatron Luminosity Charts](#)

Announcements

produced within the planet itself.

[Read more](#)

[Have a safe day!](#)

[Science Chicago hosts Mythbusters](#)

[Scottish country dancing, Jan. 6](#)

[Python Programming - Jan. 6 - 8](#)

[Winter Driving Skills Seminar - Jan. 7](#)

[International Folk Dancing, Jan. 8](#)

[English Country Dancing, Jan. 11](#)

[Outlook 2007 New Features classes
scheduled Jan. 15 and Feb. 3](#)

[Intermediate / Advanced Python
Programming - Jan. 27 - 29](#)

[Submit an announcement](#)

[Additional Activities](#)