Fermilab Today

Monday, September 27, 2004

Calendar

Monday, September 27

2:30 Theoretical Astrophysics Seminar - Curia II

Speaker: E. Kolb, Fermilab

Title: The Effect of Inhomogeneities on the Expansion Rate of the Universe

3:30 p.m. Director's Coffee Break - 2nd Flr X-Over

4:00 p.m. All Experimenters' Meeting - Curia II

Tuesday, September 28

3:30 p.m. Director's Coffee Break (Free cake will be served in honor of CERN's 50th birthday!) - 2nd Flr X-Over

THERE WILL BE NO ACCELERATOR PHYSICS AND TECHNOLOGY SEMINAR TODAY

Wilson Hall Cafe

Monday, September 27

Wisconsin Cheese

Corned Beef Reuben $4.75

Chicken Provencale $3.75

Shepherd's Pie $3.75

BBQ Panini with Pepper Jack Cheese $4.75

Meat Lovers Pizza $2.75

Kung Pao Chicken with Peanuts & Scallions $4.75

Wilson Hall Cafe Menu

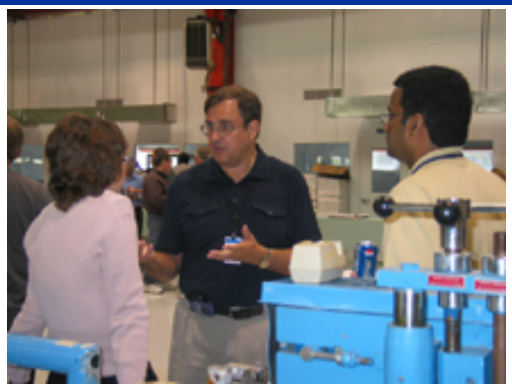
Chez Leon

Weather

Sunny **80º/50º**

Extended Forecast

Weather at Fermilab



The Technical Division celebrated the successful magnet tests on Friday. (Click on image for larger version.)

New Dipole Magnet Test: A Technical Division Success

The Technical Division celebrated the successful tests this month of two new magnets. In tomorrow's issue, we discuss the super-ferric, low-field magnet developed by Henryk Piekarz's team; today we talk about the new, 10-Tesla dipoles.

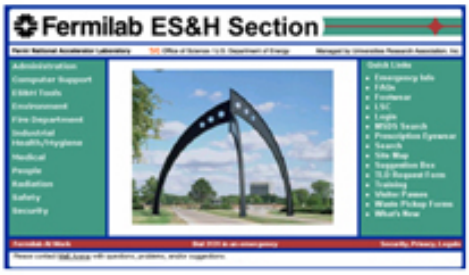
Capping a two-year effort, Sasha Zlobin and his collaborators have achieved a significant milestone this month with the successful testing of a new 10-Tesla magnet.

The magnet is a superconducting dipole based on niobium-tin (Nb_3Sn). The Nb_3Sn technology, which could eventually produce fields of more than 15 Tesla, is being developed for future LHC upgrades and, in the longer run, for a possible Very Large Hadron Collider (VLHC). Current superconducting accelerator magnets, based on niobium-titanium, are limited to fields below 9 Tesla.

"The magnet worked as well as it possibly could--100% of the performance limit.

Safety Tip of the Week

ES&H Section Web site



The ES&H Section Homepage (Click on image for larger version.)

The ES&H Section's Web site has had more than 2.4 million "hits" over the past six years. The links for TRAIN and Medical have been the most frequently used with 1.4 million and 0.5 million hits, respectively. This makes sense since these are repeatedly accessed in order to administer ES&H training and medical qualifications.

This Web site, however, contains more than just qualification information. Here are some links containing key information that have been accessed rather infrequently:

FAQ

This is a good place to start when you don't know where to go or who to ask. There are 16 topics that capture the questions that are asked most frequently. The answers are simple and direct. Links are provided to additional detail.

Manuals

This is the lab's primary ES&H guidance document. The Fermilab Radiological Control Manual and ES&H Handbook can also be found here.

Current Security Status

Secon Level 3

Search

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Info

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Previous tests had only reached 60% of the performance limit," said TD head Bob Kephart.

At first, Nb_3Sn posed a serious problem: It produced excessive heat. Zlobin's team figured that the heat might come from instability in the magnetic field.

Vadim Kashikin demonstrated that hypothesis theoretically, and to check it, one year ago the team adopted "powder-in-tube" filaments. "They have the best stability, because the filaments can be made very thin," said Zlobin, and thinner filaments produce stabler fields. This month's test of the redesigned magnet was a success.

In addition to creating very strong fields, Nb_3Sn magnets can operate at up to 4.5 Kelvin, compared to the 1.9 Kelvin of current LHC magnets. This could be a significant advantage especially near the interaction region, where "most of the heat produced by particle collisions ends up in the magnets," said former TD head Peter Limon.

Now the team plans to switch to other kinds of thin Nb_3Sn filaments that could eventually produce even stronger fields. "Our goal is to reach 15 Tesla for quadrupole magnets," Zlobin said.

Search
This function allows you to search all the contents of the ES&H Section's Web site with results scored by relevance. Searches can easily be refined using special operators.

MSDS Search
The lab's collection of Material Safety Data Sheets can be searched from this link. MSDSs are the primary source of information about the hazardous properties of products. Scans of individual documents can be viewed onscreen or printed.

Ergonomics
As "wear and tear" injuries become more prevalent, it is increasingly important to do a good job of "fitting" tasks to workers. This link contains information, guides and checklists that can be used to minimize ergonomic problems.

Have a great day and let's work safely all week!
Safety Tip of the Week Archive

Announcements

Upcoming Power Outages

Antiproton Source
September 27, feeder 24 work will begin around 7:30 AM and end around 3:00 p.m. on Monday; no power to Pbar for up to seven and a half hours, but probably less

Transfer Gallery
October 2, feeder 43 work will begin at 7:30 AM and end around 3:00 PM on Saturday; no power to the Transfer Gallery for up to seven and a half hours, but probably less

Upcoming Classes

Academics And More In UEC Career Night

More than 140 young physicists attended the UEC's annual Career Night on September 9 at Fermilab. From industry to academics, the evening's speakers covered the range of careers a physicist can pursue. "All three speakers were very dynamic and enthusiastic," said Sharon Hagopian, who was one of the organizers for the event.

Mark Bregman was one of the three speakers at the Career Night.

Tom Junk, an Assistant Professor at University of Illinois, Urbana-Champaign, spoke about academic careers and provided interview tips for young physicists. Another speaker, Mark Bergman, a member of the Fermilab Board of Overseers, focused on careers physicists can pursue outside of academics. Phil Koehn, from the Institute for Defense Analysis, talked about careers in government and public service. Many attendees stayed after the presentations to ask questions and obtain more information from the speakers. "The Career Night went very well," Hagopian said. "We already have our speakers lined up for next year."

In the News

October 5 - Excel Intermediate
October 19 - Word Advanced
more information

Free Cake at Director's Coffee Break Tomorrow

In honor of CERN's 50th birthday, stop by the Director's Coffee Break tomorrow at 3:30 p.m. on the Second-Floor Crossover for a piece of cake. We may or may not make you sing....

Brown Bag Seminar Tomorrow
HR Q&A Session

Human Resources presents a Brown Bag Seminar tomorrow from 12:30 p.m. to 1:30 p.m. in FCC 3 East. Bring your lunch and ask questions of:
Kay Van Vreede - Section Head
Borys Jurkiw - Compensation/Visa
Dianne Engram - EOO
Wilma Cardona - Benefits
Tom McMahon - Employment
This is not a presentation, but is an opportunity for you to ask general questions. If you have questions of a private or personal nature, you should see the Human Resources group on the 15th floor.

Scottish Country Dancing

Scottish Country Dancing will be held at 7:30 p.m., Tuesday, Sept. 28, at the Geneva American Legion Post. Newcomers are always welcome. Info at 630-584-0825 or 630-840-8194 or folkdance@fnal.gov.

Wilson Hall Warden Training

It's time for the annual WH Emergency Warden Training again! Training is available on September 27 at 1:30 p.m. and September 28 at 10:00 a.m. Class is not expected to last more than an hour.

From *Science Magazine*, September 24, 2004

A Positron Map of the Sky

Astronomers have produced a startling new sky survey, based not on matter that shines but on antimatter that annihilates. The sources of the particles aren't yet known, but a European-led team reported that the antimatter clusters around the home of the Milky Way's most ancient stars.

Read more