

Calendar/Meetings

February

2-3, [PFLDnet2006: Fourth International Workshop on Protocols for Fast Long-Distance Networks](#), Nara, Japan

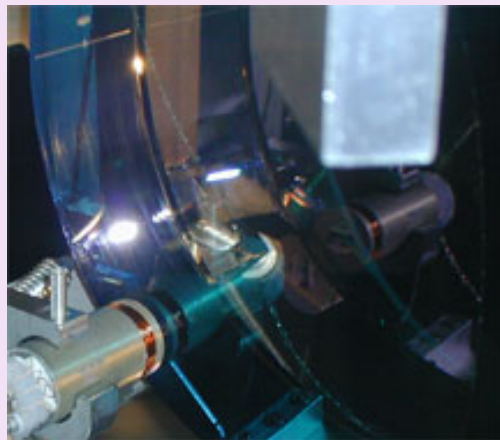
2-3, [SDSC Storage Resource Broker Workshop](#), San Diego, California

13-16, [GGF16: The 16th Global Grid Forum](#), Athens, Greece

13-17, [CHEP06: Computing in High Energy and Nuclear Physics](#), Mumbai, India

[Full Calendar](#)

Image of the Week



Portion of LIGO mirror face.
(Click on image for larger version.)

Image Courtesy LIGO Hanford Observatory

This mirror is a component of one of two interferometers at the Laser Interferometer Gravitational-Wave Observatory (LIGO) [Hanford Observatory](#) in Washington State, which operates in unison with a third interferometer at [LIGO Livingston](#)

Feature Story

From Pakistan to Pasadena



Atif Mehmood and Adeel Zafar.
Image Courtesy Michael Thomas

Over the past 18 months, five students from the National University of Sciences and Technology in Pakistan have traveled to Caltech to develop their grid computing skills. The students, who have already collaborated remotely with Caltech scientists for at least one year, spend six months in California developing grid software and services.

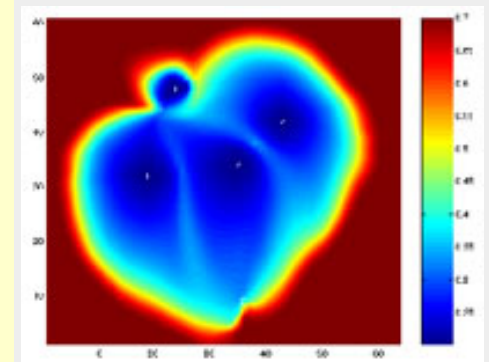
"It's a fantastic learning experience," says Adeel Zafar, one of two NUST students currently visiting Caltech. Zafar and Atif Mehmood, both research assistants preparing to apply to graduate school, started working on grids at NUST in early 2004. They deployed a grid node for the CMS particle physics experiment, then moved to developing Web services for the Grid Analysis Environment.



Tahir Azim, Ahsan Ikram and Waqas ur Rehman.

"Until recently all work with NUST had been remote, through email and occasional videoconferences," says Caltech's Michael Thomas, who has worked with NUST students for over two years. "The first student came to

Seismic Modeling and Oil Reservoir Simulations with TeraGrid



Visualization of an oil reservoir simulation during optimization.
Image courtesy of the University of Texas at Austin's Center for Sub-surface Modeling and The Ohio State University's Multiscale Computing Lab.

While oil prospecting used to rely on hunches and luck, oil companies today demand intelligent ways to surmise the geological features of the ground and choose ideal places for their equipment. Using TeraGrid resources, a multidisciplinary team—led by the University of Texas at Austin's Mary Wheeler, the Ohio State University's Joel Saltz, and Rutgers University's Manish Parashar—is at work on software tools that improve oil reservoir management.

The approach relies on subdividing a hypothetical reservoir into a mesh of blocks. Wells, pumps, and other equipment are associated with individual blocks, and an approximate model of the blocks' fluid dynamics is created. Equipment is moved in order to compare the oil recovery efficiency of different configurations. This process could yield billions of possible configurations, so a dynamic, data-driven optimization system narrows the field. Middleware tools manage the data produced from a rough sampling and identify starting points for more comprehensive searches. Dynamic steering tools allow on-the-fly searches within these subsections. Sophisticated optimization algorithms guide these searches by comparing

Laboratory in Louisiana, to search for cosmic gravitational waves. At the observatories, LIGO's 25-pound mirrors are suspended at the vertex and the ends of an L-shaped vacuum pipe 2.5 miles long on each side. Gravitational waves produce tiny changes in the mirror positions. Laser light that travels the 2.5-mile distances between the mirrors records these changes.

[Link of the Week](#)

NCSA's Cyber-features

The National Center for Super-computing Applications' Web site has a new look—and two new interactive features. Click on "Understanding Cyberinfrastructure" to learn about the key components helping cyber-infrastructure propel discovery and innovation. Visit "Cyberenvironments: Powering science" to watch a short video and read about the essentials of cyberenvironments.

[PDF Version for Printing](#)

-

[XML](#) [RSS Headlines](#)



Office of Science/
U.S. DOE

Caltech in February 2004, and it was very beneficial. Once they're here, the communication is a lot easier and their projects move along much faster."

At NUST, a team of computer science students led by Professor Arshad Ali and graduate student Ashiq Anjum collaborates remotely with Caltech, the University of Florida and CERN in Switzerland. The students develop their software engineering skills and help scientists in the U.S. and Europe enable data analysis on the grid. One or two students are then selected to travel to Caltech under a program sponsored by both institutions, the U. S. State Department and the Ministry of Science and Technology in Pakistan.

[Full article](#)

configurations.

[Read the full article on the TeraGrid Web site](#)

Grids in the News

Enter the Semantic Grid

IST Results, January 31, 2006

To allow business and people to rapidly, and easily, establish virtual organisations to share information, services and computing resources a team of European researchers are laying the technological foundations that will open the door to the era of the Semantic Grid.

[Read More...](#)

EELA Takes Off

GRIDtoday, January 31, 2006

By means of the action of a group of very skilled and highly motivated people in Europe and Latin America, the EELA Project will create a human network dedicated to work on grids, e-Infrastructures and e-Science.

[Read More...](#)