

NewsLine Quarterly

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Director's Corner



On July 1, I took over the management of the M-division—and I am really looking forward to this exciting and challenging task. I would like to thank my predecessor Dieter Trines very much for the well organized division that I am taking over now, and also for his kind support in helping me settle into my new role.

In the coming years, both our new large projects PETRA III and the European XFEL will have a considerable impact on the M-division and on DESY as a whole. With the current start of the machine upgrade, the PETRA III project is running at full speed. The commissioning of this new top-class light source is scheduled for 2009.

On June 5, we were able to celebrate the official launch of the European XFEL project—many colleagues have worked towards this milestone for many years. The XFEL is organized as an international project and we are looking forward to building this facility in cooperation with partner institutes that—together with DESY—have participated in the development of superconducting technology already during the early years of the TESLA collaboration.

(continued overleaf)

Building Site

The remodelling of the auditorium foyer will run from July 9 to September 21. Access to the auditorium will only be possible through the emergency door from mid-August. We will keep you inFormed!

Grid Tuning

What is the best way to use the Grid? At the DESY Computing Seminar, Johannes Elmsheuser from LMU University in Munich will report on the latest approach of distributed Grid analysis. July 9, DESY auditorium, 4 p.m.

Pointing the Way

HERA will also have an impact on particle physics in the future. A new HERA brochure presents a retrospective of 15 years of research achievements and an outlook of the results that still are to be expected. Available at PR (bldg. 1).

The End of an Era

HERA shuts down – nostalgia and celebrations

HERA, Germany's largest particle accelerator (and indeed its largest research instrument!), stopped running last Saturday. At 11:28 pm, Ferdinand Willeke, responsible for HERA operations, pressed the red button to dump the proton beam. The positrons had made their own exit a few minutes earlier because of a transmitter failure somewhere near the ZEUS experimental hall. Nineteen years earlier, on 20 August 1988, Willeke had injected the first proton beam into the machine, so the 80-strong crowd gathered in the control room had no problem deciding that he should be the one to press the button.

HERA, DESY's hadron-electron ring accelerator measuring 6.3 kilometers in circumference, has delivered 15 years worth of data from its electron-proton collisions.



In action: Albrecht Wagner and Rolf-Dieter Heuer at the cabaret



Last shift: Ferdinand Willeke (in front) pressed the red button to dump the proton beam in the control room.

"It will live on in physics text books and projects like the LHC," said DESY Director Albrecht Wagner. With data from HERA, scientists were able to examine the structure of the proton, the nature of the 'glue particles' called gluons, that act between quarks inside the proton and the unification of two of the four fundamental forces of nature. HERA is making way for the next big project PETRA III—one of the most brilliant storage ring X-ray sources in the world, planned to start operating in 2009. Until Saturday, the PETRA ring was used as a pre-accelerator for HERA. The last days seemed like a never-ending and overlaying chain of festivities. All

HERA alumni received an invitation to the HERA Fest colloquium, where former spokesmen and other renowned scientists took measure of their machine and detectors. They did so with some nostalgia, but always also thanked everybody involved and stressed that the machine might be switched off, but its results will live on. At the massive party on Friday afternoon—1800 people had registered for it, which meant tricky food logistics!—the HERA team looked back on the years of construction and operation with a cabaret that had the audience in the crowded tent in tears (of laughter). (baw)

Director's Corner

With the strong DESY involvement in the XFEL project, DESY has its 'foot in the door' to take a leading role in the construction of the ILC.

FLASH, a pilot facility and a 'gold mine' with regard to the XFEL, will restart user operation after the current upgrade with higher beam energy at the end of the summer. Of great importance is also the research and development program of PITZ at Zeuthen—the performance of the XFEL is crucially dependent on the beam quality of the injector. Exciting and certainly busy years are ahead of us. Let us make a joint effort to meet this challenge and work together in this spirit!

Sincerely,
Reinhard Brinkmann

New-Check In for Visitors at the Virtual Reception DESY guests will get their own communication network

The IT group is currently working on the modification of the guest network. The service for guests who are only staying at DESY for a short time will be improved. Workshop participants, guest scientists or employees from contracted companies will still have access to a domain separated from the usual DESY network.

However, in the future access will only be possible after the guest has passed authentication. In the past, the open access has sometimes led to misinterpretations of hospitality.

"Some users participated in file sharing and for example offered copyrighted material," said Kars Ohrenberg, head of the IT communication network group. "Thus, DESY—the network owner—received unpleasant messages from external agencies because of copyright violation."

At the beginning of August,



DESY guests will be greeted with a form similar to this one when they open their browsers.

the new guest network will take up operation to close the security gap. Just like at a hotel reception, transient guests first have to check in with an online form. When they open their browser, the access request of the external PC is transferred to a DESY website. Basic information is required for authentication. After clearance, a guest may use the guest network for up to 90 days, having access to the inter-

net, to emails and to local printers. Moreover, the guest is protected by a personal firewall.

If somebody enters nonsense specifications, the hardware address of this computer will immediately be blocked for the network. Only after contacting UCO, the access will be restored with the correct data. (she)

New Chair for the Administrative Council

Introducing Bärbel Brumme-Bothe

The 107 meeting of the DESY Administrative Council on June 14 and 15 in Zeuthen started with a premiere: Bärbel Brumme-Bothe introduced herself as the new chairwoman of the DESY committee. Brumme-Bothe is a meteorologist and has worked at the Federal Ministry of Education and Research BMBF for many years, where she led the office of minister Schavan until recently. She has now inherited the management of the "Provision for the Future-Cultural, Basic and Sustainability Research" department in the BMBF from Herbert Diehl. Therefore, she is now also the head of DESY's highest



Frau Bärbel Brumme-Bothe auf der Veranstaltung zum XFEL-Startschuss am 5. Juni im Elysée-Hotel

supervisory committee. In the first meeting under the leadership of Bärbel Brumme-Bothe, the Administrative Council was very pleased with the development at

DESY in the past six months: among others, there was a great acknowledgement for the XFEL launch or the start of the Helmholtz Alliance with German universities. (tz)

CFEL

A home for photon scientists

Research at the free electron lasers FLASH and XFEL is promising; the first results from FLASH have already attracted interest worldwide. In order to tap the full scientific potential of these facilities, DESY, the Max Planck Society and the University of Hamburg are currently setting up a Center of Free Electron Laser Studies (CFEL). The site for the future 8000 square meters building was chosen mid-June. It will be erected between the new PETRA III experimental hall and the Luruper Chaussee. The City of Hamburg will be responsible for the construction of the building so that it is ready for occupancy middle of 2010. (she)

Bags full of enthusiasm

ILC community makes great progress during their meeting at DESY

Participants to the combined LCWS and ILC 2007 workshops (remember the big tent in front of building 1?) left in a get-up-and-go mood. Motivation within the community of people working on the International Linear Collider (ILC) is high: the next milestones of the project are in sight, new structures point to changes in the project, and a recent international cost review brought positive results.

At their last meeting in Beijing in February, things looked different—the ILC community was in a state of exhaustion from nights spent crunching numbers, writing and editing the Reference Design Report (RDR) and day-long meetings and videoconferences marked the phase before the publication of the ILC's technical snapshot.

The meeting in Hamburg brought the two families of the ILC community together:



Some of the more than 600 participants of the workshops gathered behind building 7 for a group photo.

those responsible to get the machine up to the high standards required for the ambitious scientific goals of the future accelerator, and those designing and building the detectors for the ILC. More than 600 people listened to talks and discussed progress and problems, sometimes in as many as 19 parallel sessions!

Three major achievements emerged from the big white tent. The RDR, published in

draft form in Beijing, has been reworked after feedback and is now ready to be presented to international funding agencies. This means that the ILC is entering its next phase: by 2010, an Engineering Design Report is supposed to be ready that defines the machine in detail and can be used for construction proposals and the site selection process. Many sites, including shallow ones, will get a close

examination. A new management structure with three project managers—one of which is DESY's Nick Walker—marks this transition. The project managers will be the interface between the organization's Executive Committee and the scientists and engineers working at the base, managing the projects R&D, monitoring cost and prepare for industrialisation.

The detector experts have defined clear goals for the future in a roadmap document that will bundle all R&D efforts and ensure that they get the best possible—and most exciting—physics out of it. The community will appoint a new Research Director to coordinate efforts and prepare Letters of Intent for detectors next year.

"You can really feel the excitement," said Director Barry Barish during the workshop dinner. "We're looking forward to this next phase."

(baw)

Junior Scientists Do It

Doctoral initiative at DESY

At DESY, more than 450 PhD and diploma students are investigating, screwing, measuring and programming every day and sometimes at night. The new Dolt group (doctoral candidates' or PhD students' initiative at DESY) wants to represent the interests of these junior scientists. "We are no official representation but we know the problems and interests of our colleagues from our own experience," said Matthias Janssen, PhD student at FLC and one of the founders of this initiative.

A core group of seven PhD students has already organized an information meeting with the human resources

department and created a website. Now they are expecting many interested diploma and PhD students to join them. Another project will be the establishment of a mentoring program for PhD students.



Six of the seven initiators of Dolt

The initiative is also planning to organize a job exchange and job application trainings for future careers. An exchange of ideas also takes place with colleagues from other Helmholtz research centers at the annual meet-

ing of the Helmholtz juniors. A planned official survey from the juniors will inform about working conditions of PhD students at the different centers. (baw)

Any questions?
Contact
doit@desy.de
or check
<http://doit.desy.de>

PETRA III

At a Glance

The old chimney at building 17 may not smoke any more, but it is useful all the same. A webcam is now installed up high which will provide up-to-date construction pictures of the new PETRA III experimental hall from the beginning of July. The camera will document the progress from ground-breaking to the finished hall.

If you want to be up to date with what's going on in PETRA III construction works you'll only have to visit the PETRA III website. From Monday to Friday from 6 a.m. to 8 p.m., the pictures are updated every 10 minutes. The real start is scheduled for July 2—from then on there will be continuous truck traffic. (she)

<http://petra3.desy.de>

Thirst for Knowledge

2nd Science Night with fascinating and exciting experiments

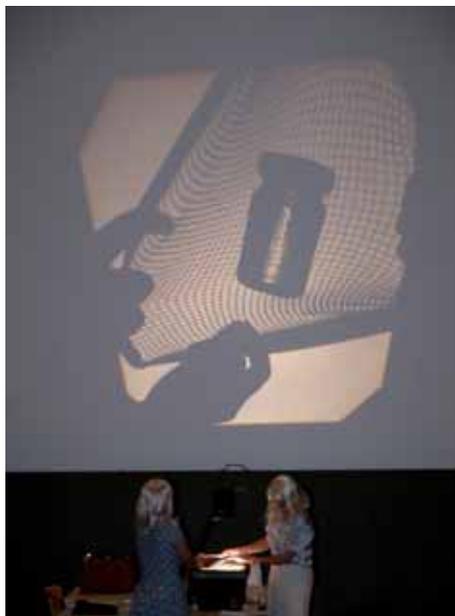
by *Katja Poppenhäger*

The "Science Night" at DESY in Hamburg and the "Long Night of Science" in Berlin are real crowd pullers. Attractive physics again attracted thousands of visitors this year. At the Physics Institute of Humboldt University in Berlin, Zeuthen showcased itself with the focus on particle and astroparticle physics. In

In Hamburg, the youngest visitors had no difficulty choosing their favorite attraction at DESY's Science Night: the vacuum experiment that made a tea cake blow up to several times its original size. They were allowed to take it home afterwards in a preserving jar. There were lots of hands-on activities and crowds of people gathered around them:

children were building a detector, the superconducting train was miraculously floating on the rails while visitors were amazed that they could pull a piece of paper underneath a mug that floated as well. In the mechanics workshop, visitors had the opportunity to admire creative handiwork. On the visitor's hit list was waterjet cutting, a machine that specialists use to cut

exact single components from metal or plastic. Visitors immediately tested the fitting accuracy when assembling the recently made plastic insect assembly kit. On top of all that, the glorious history of physics also fascinated the visitors. In two shows, with



How to explain the curvature of space with a pair of stockings.

the foyer of Lise-Meitner-Haus in the Adlershof district, an exhibition showed hot topics of particle physics and young visitors were especially fascinated by the ball linear accelerator. There was much excitement among spectators and helpers because it required considerable skill become one of the top entries on the velocity measurement list.



Visitors at the Zeuthen exhibition tried their luck with linear accelerator.

people and horses as actors, they staged historic Magdeburg hemisphere experiment by Otto von Guericke. The attempt to separate the hemispheres by tug-of-war failed. Afterwards, twelve heavy draught horses made a great effort to pull apart the two metal hemispheres held together by a vacuum—in vain.

The lectures were also well attended. While speaker in Hamburg explained how DESY makes insight possible, listeners in Berlin, together with the Zeuthen colleagues, went on a neutrino hunt at the South Pole.



An absolute favorite with the crowd: the historical vacuum experiments.

Imprint

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