



Switch on to sustainability



CERN's electricity consumption is considerable, equivalent to a third of Geneva's. Over 95% is used by the accelerators and other research facilities. CERN also consumes gas for heating, fuel and gas for cars, and water for sanitary use and accelerator cooling. "It's our responsibility to keep our energy consumption and hence our impact on the environment as low as possible," says Helfried Burckhart, recently appointed as CERN's Energy Issues Coordinator. "Although the scope for reducing the energy consumption of existing

Following a series of measures taken to foster a green policy for the Laboratory, CERN Management has recently appointed an Energy Issues Coordinator. While it's hard to imagine magic solutions that would substantially decrease the energy consumption of the research accelerators, it is certainly within our reach to re-use thermal "waste" energy and to optimise infrastructure to become more sustainable and eco-friendly. Real eco-projects are in the making.

installations is limited, we can certainly do a lot for new buildings and future research machines."

In addition to reducing the impact on the environment, optimising the Laboratory's energy use would, of course, reduce running costs too. "We aim to foster progress in energy-related technology," says Helfried Burckhart. "This is vital for future accelera-

(Continued on page 2)

Nos 22 & 23 – 30 May & 6 June 2012



A word from the DG



Move and eat better

CERN has many traditions, but in a week that's seen the launch of the Medical Service's 'Move & eat better' campaign, it's refreshing to note that among the oldest is a sporting one. The CERN relay race dates back to 15 October 1971 when 21 pioneering teams set off to pound the pavements of CERN. Back then, the Focus users group came in first with a time of 12 minutes and 42 seconds. Today's route is slightly different, and the number of teams has risen to over 100, with a new category of Nordic Walking introduced, as part of the campaign, for the first time.

The relay has provided some memorable events, and perhaps one of the

(Continued on page 2)

In this issue

News

- Switch on to sustainability 1
- A word from the DG: Move and eat better 1
- LHC Report: Back to record performance 3
- Puzzling asymmetries 3
- New CMS detectors under construction at CERN 4
- SESAME on track for commissioning 5
- CERN's digital library software gets smart 6
- Exhibition: Fibre optics, the future is at hand 7
- The space-traveling neutralino is back at CERN 8
- Music season coming soon 9
- 100 and counting! 10
- Creative collisions between body and mind 11
- PhD students share their work 12
- News from the Library: Looking for materials properties? Find the answer in CINDAS databases 13
- Browsing the Internet: good-bye anonymity! 13
- Ombud's corner: Social exclusion 14
- Michael DE SOUSA (1989 - 2012) 14

Official news

- Take note 15
- Academic training 16
- Technical training 18
- Seminars 19

20

Published by:

The European Organization for Nuclear Research - CERN
1211 Geneva 23, Switzerland - Tel. + 41 22 767 35 86

Printed by: CERN Printshop

© 2010 CERN - ISSN: Printed version: 2077-950X

Electronic version: 2077-9518

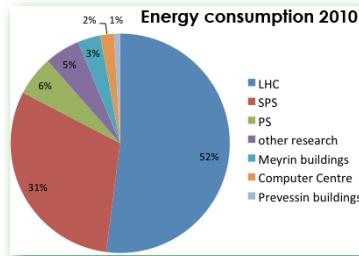


Switch on to sustainability

(Continued from page 1)

tors and could also be beneficial for society as a whole."

One of the options being explored is the use of solar panels on the roofs of new buildings. The first to be equipped with a 300 m² solar thermal collector field of the type invented as a CERN "spin-off" should be a new 4000 m² building on the Prévessin site that will house offices, technical services including some computing facilities, and an area for visitors. "The main aspect of our integrated energy approach is the way we are combining the processes which create heat and cold, i.e. feeding heating and cooling streams by the same process. In this way, thermal waste energy is kept to a minimum," Helfried Burckhart explains. "The fact that we intend to use solar energy for cooling the building shows that sustainability and comfort are not necessarily mutually exclusive." A priority scheme has been designed to use solar energy first and then to add energy from "conventional" sources like the



district heating system and compressors up to the level needed.

CERN uses water-cooling for its facilities and most of the energy is dissipated in cooling towers. Future projects include re-using this energy together with heat pumps to heat buildings at CERN and in neighbouring areas. This would reduce the energy bill for CERN and also show its willingness to support sustainability on a wider scale than just the CERN site. "After assessing CERN's overall energy needs, we explored a few ideas that would indeed contribute to making the Laboratory more sustainable. This implies some investment but will pay back

in the future, especially with ever increasing energy prices," says Burckhart. And, very significantly, he adds: "No action is as important as increasing the energy awareness of every one of us. Although we, as the Laboratory's employees and users, do not pay individual energy bills, we should not forget that saving energy is key to sustainability." In other words, each and every one of us can make a big difference! Needless to say, this implies doing things like keeping an eye on which equipment really needs to be running, avoiding unnecessary water consumption, using gas instead of petrol, etc. All suggestions for future measures are very welcome!

Antonella Del Rosso

A word from the DG



(Continued from page 1)

Move and eat better

longest-standing records in the history of sport, with the UA1 strollers' 10 minutes and 13 seconds unbeaten for thirty years. In the women's category, the UN Gazelles set the fastest time of 13 minutes and 16 seconds in 1996, while in the veterans category, you will not be surprised to learn that the Neutrinos to Gran Sasso team holds the record for the fastest time on the old course.

Yesterday's race, the 42nd, was also a memorable one, and I'd like to congratulate the winning teams along with everyone who took part. The relay provided a great opportunity to launch the 'Move & eat better' campaign, and even if you didn't take part in the race, I hope you'll take the time to act on the Medical Service's message. Our doctors are not asking everyone to run a relay every day, but they are asking us all to move a little more and eat a little better. The campaign has just begun, and it has no end date.

CERN is by no means unique, but with increasingly busy lives and screen-based working environments, the

Relay snippets

The winning team was nine seconds faster than last year. Global Hope Network International was the sponsored charity – 1CHF from each runner's fee being donated to them. In the Department ranking, the Finance Department won again, as in the previous two years, but below them there was a lot of movement, with PH and EN on the podium. PS: Two tumbles in the first 100m, and one at the finish. Otherwise medical service reported no significant issues.

average body mass index (BMI) of CERN people has gradually been creeping up towards unhealthy levels over recent years. It doesn't take much, however, to reverse the trend. Half an hour of physical activity a day, even something as simple as walking, coupled with a moderate and balanced diet, can make all the difference.

Over the coming months, there are many ways that you can get involved with the campaign. If you haven't signed up already, now's the time to commit to bike to work in June (<http://www.biketowork.ch/index.php?id=55&firma=878&L=1>).

Some 40 teams have already made that commitment. Also in June, we have a presentation from Per Bo Mahler, a renowned sports doctor, when we'll also be treated to a demonstration of the Zumba dance phenomenon that's currently taking the fitness world by storm. In September, there's a presentation from dietitian Irene Rolfo on healthy eating, and many other events will be announced as time goes by.

You can keep in touch with these

developments (<https://espace.cern.ch/bougerplus-mangermeilleur-2012/SitePages/Home.aspx>). And in the meantime, if you don't know your BMI it's time to find out. Simply take your weight (in kilograms) and divide by the square of your height (in metres). Ideally, you should come up with a number in the range of 18.5 to 24.9. Whether or not that's the case, however, it's always important to move and eat well.

Rolf Heuer



The increase in the number of people at CERN with a BMI greater than 30 over the last 30 years, taken from the campaign website.

LHC Report: Back to record performance

The technical stop at the end of April was followed by a period in which increased beam losses were

observed before the beams were brought into collision, causing reduced peak luminosities. This issue was tackled by optimising the beams in the injector chain, making a fine adjustment of the orbit during the energy ramp-up and ensuring precise bunch collisions in ATLAS and CMS. These measures brought the peak luminosity at the beginning of a fill up to record levels of $6 \times 10^{33} \text{ cm}^{-2} \text{ s}^{-1}$, but the fills were short as there were still sudden

The technical issues that caused a rocky re-start after the technical stop and a relatively low performance of the machine have been tackled and resolved in the past days. The LHC is back to record collision rates and matching the 2011 data set now seems within reach for the summer conferences.

losses of some bunches that triggered the beam dump.

The lost bunches were identified as bunches that only collide in LHCb. These bunches see fewer collisions, so the "beam-beam effects" that can stabilise the beams are smaller and their collision parameters are different from those of the other bunches. It was then decided to change the filling scheme of the LHC to exclude almost all bunches

which only collide in LHCb. This proved to be a winner and there was a series of nice long fills with the record fill staying in the machine for almost 20 hours and producing an integrated luminosity of more than 0.2 fb^{-1} for each of the ATLAS and CMS experiments.

Assuming realistic machine availability with no major hardware problems, producing about 1 fb^{-1} per week seems feasible. Compare this to the 5.6 fb^{-1} produced over the whole of 2011. On Wednesday 23 May the integrated delivered luminosity were about 2.8 fb^{-1} , so we seem well on track to doubling the experiments' data-set in time for the summer physics conferences.

Jan Uythoven for the LHC Team

Puzzling asymmetries

The Standard Model is able to predict the decay rates of particles with high precision. In most cases, experimentalists con-

firm the value predicted by theory and the figure is added to the official publications. However, this time, things seem to have taken a different route.

Studying data collected in 2011, the LHCb collaboration found that in a specific decay – a B particle transforming into a K particle plus two charged muons ($B \rightarrow K\mu\mu^+$) – the branching ratio of the neutral B in the corresponding decay (i.e. $B^0 \rightarrow K^0\mu\mu^+$) was different it that of the positively charged B (i.e. $B^+ \rightarrow K^+\mu\mu^+$). Such an "isospin asymmetry"

In a recently published paper, the LHCb collaboration reported on a possible deviation from the Standard Model. Theorists are now working to calculate precisely this effect and to evaluate the implications that such an unexpected result could have on the established theory.

between the decays of differently charged B particles was not expected, as theory predicts the corresponding value to be very close to zero. "There had been hints of such an effect from previous experiments (CDF, Belle and BaBar), which agree with the new higher-precision result from LHCb," explains Pierluigi Campana, LHCb Spokesperson. "This result has been made possible by the strong and continuous support from the LHC operations team for the LHCb physics programme."

Theorists are now busy calculating the exact figure that we should expect for this specific asymmetry. If theory confirms the deviation, this new experimental result could open the way to further investigations of possible new physics in B decays.

Read more details on the LHCb website:

<http://lhcb-public.web.cern.ch/lhcb-public/>

and the LHCb scientific paper:

<http://arxiv.org/pdf/1205.3422v1.pdf>

Antonella Del Rosso

New CMS detectors under construction at CERN

"The original RPC and CSC detectors were constructed in bits and pieces around the world," says Armando Lanaro, CSC construction co-ordinator. "But for the construction of these additional chambers, we decided to unify the assembly and testing into a single facility at CERN. There, CMS technicians, engineers and physicists are taking raw materials and transforming them into installation-ready detectors."

This new facility can be found in Building 904. Once the assembly site for the straight magnet sections of the LHC, the building underwent two years of renovations to become the detector construction facility it is today. "For starters, there were severe structural issues that had to be addressed," says David Hay (EN-MEF), who co-ordinated the Building 904 construction work. "Before the building could receive CMS engineers, we had to refurbish the roof and resurface the floor, install fire detection systems and a storage platform, and modify the existing electrical and IT systems."



CMS engineers install side panels on a CSC detector in Building 904.



View of the main construction hall in Building 904.

While the LHC will play the starring role in the 2013/2014 Long Shutdown (LS1), the break will also be a chance for its experiments to upgrade their detectors. CMS will be expanding its current muon detection systems, fitting 72 new cathode strip chambers (CSC) and 144 new resistive plate chambers (RPC) to the endcaps of the detector. These new chambers are currently under construction in Building 904.

And after completing basic renovations, there were still a number of project-specific installations to construct. "The chambers have to be constructed and stored at a specific humidity and temperature, so we built four new climate-controlled semi-clean rooms," explains David. "Furthermore, as the chambers use gas to track the muons, we equipped the building with supplies of argon, nitrogen, carbon dioxide, freon and isobutane."

Specific tools were also needed in constructing and testing the new chambers.

But instead of building new machines, CMS engineers decided to recycle. "Fermilab refurbished some of the original machines used to construct the CSCs in the late 1990s," says Armando. "These were shipped to CERN, where they are now doing exactly the same job they did over 10 years ago."

Engineers and technicians from Europe, the US, China and Russia are currently at work on the new detectors, and should have them finished in time for LS1. This June, CERN access-card holders will have the opportunity to see these experts at work on the detectors. For more information, see the box below.

See a video tour of the CSC construction line at:

<https://cdsweb.cern.ch/record/1451577>

Katarina Anthony

Visit Building 904!

CERN Internal Communication is organising a visit to Building 904 on the Prévessin site – an opportunity for you to see parts of the CMS detector under construction.

If you wish to participate, you can sign up for a visit by sending us an e-mail (dates to be decided depending on the number of people interested). Note that visits are open only to CERN access-card holders.

The visit will include:

- an introduction by the experts, lasting about 5 minutes,
- a tour of the construction area, lasting about 15 minutes,
- a few minutes for questions.

How do the Cathode Strip Chambers (CSC) work?

In CMS, CSCs are used to detect muons. CSCs consist of arrays of positively charged "anode" wires wound around negatively charged copper "cathode" strips within a gas volume. The chambers are then assembled in "modules", each one containing six wire and strip layers (see picture). The chamber layers contain a gas that amplifies the signals from charged particles coming from collision events.



When muons pass through the gas, they knock electrons off the gas atoms (ionization), thus creating positively charged ions. Because of the electric field in the chamber gaps, electrons flock to the anode wires creating an avalanche, via a multiplication process, which is the signal collected by the read-out electronics. The avalanche around an anode wire from an ionization event creates an induced charge distribution on the cathode strip. Positive ions move away from the wire and towards the cathode, also inducing a charge pulse in the strips. This signal is also recorded by the read-out electronics.

Because the strips and the wires are perpendicular, physicists get two position coordinates for each passing particle, which allows them to infer their trajectory.

SESAME on track for commissioning

It reads like a page out of CERN's own history: a scientific collaboration, founded under the auspices of UNESCO, dedicated to peaceful physics research. But instead of post-war

Europe, SESAME is being built in Jordan. The project brings together partners from across the Middle East, namely Bahrain, Cyprus, Egypt, Iran, Israel, Jordan, Pakistan, the Palestinian Authority and Turkey.

The SESAME Organization held its Council Meeting at CERN last week, seizing the opportunity to fortify its relationship with CERN with a new agreement. "Under this agreement and provided that other contributions ensure the support to buy the necessary material, CERN will provide the manpower and technical knowhow needed to develop the magnet system, which forms the heart of the SESAME synchrotron," says Jean-Pierre Koutchouk, CERN's representative for the SESAME project.

SESAME's research facility in Jordan should be completed by late 2015 to become the first world-class physics facility to open in the Middle East. Its research programme will utilise intense synchrotron light for studies across a diverse range of research

On Thursday 16 May, ambassadors, official representatives and delegates from countries in the Middle East arrived at CERN to participate in an event supporting SESAME, which included the signing of a new agreement between CERN and SESAME. The agreement adds to growing multi-national support for SESAME – vital ingredients for the completion of the project.

areas, including the medical, material and environmental sciences (for more information on SESAME research areas, see the box below). "SESAME will attract experts from the whole area to make science in a peaceful environment, which will mix nationalities, religions and languages," said SESAME Council President and former CERN Director-General Chris Llewellyn-Smith at a talk that followed the signing ceremony.

The SESAME synchrotron is re-assembling components from the German decommissioned BESSY I machine to be used as injectors for the new facility. Other synchrotron laboratories, such as SOLEIL in France, ALBA in Spain, ELETTRA in Italy, the Swiss Light Source, Diamond in the UK and the Canadian Light Source, are also contributing materials. "Collaboration with international colleagues has been vital to SESAME and not just because it provided us with the necessary hardware," said Khaled Toukan, SESAME Director. "We had to overcome not just technical issues but also political and

networking issues and the model provided by CERN and other collaborative efforts has been instrumental to us."

All the speakers confirmed that current commitments from SESAME members and other donations look set to provide most of the capital funding needed to complete construction – allowing experiments to begin with four beamlines in late 2015.

CERN Bulletin

Science with light

The intense synchrotron light produced at SESAME can be used to study matter at an atomic scale. This depth allows the light to be used across many scientific fields. Here's how synchrotron light can be used today:

- **Study of biological functions and disorders:** Several techniques using synchrotron light, including X-ray protein crystallography, have allowed researchers to study how human organs function and examine their structure in depth. These techniques are also used to monitor how diseases progress, helping physicians develop promising new drugs. Crystallography is an established research tool in the biological field, with three crystallographers receiving the 2009 Nobel prize for Chemistry for their use of the technique to study how human cells produce proteins.
- **Analysis of materials:** The high intensity and adjustability of X-rays produced by synchrotron radiation have made them the ideal tool to probe man-made materials, including archaeological artefacts. Recent studies utilising synchrotron X-rays revealed that the ancient Egyptians were able to manufacture opaque glass – further evidence of the scientific capabilities of that civilisation.
- **Capturing and storing carbon dioxide:** Synchrotron techniques can be used to develop materials to capture and sequester CO₂. Current studies are investigating the structure of Metal-Organic Frameworks – a type of porous material that may be used to store CO₂.



SESAME Director Khaled Toukan and CERN Director General Rolf Heuer signing the joint agreement. They are accompanied by (left to right): Seyed Mahmoud Reza Aghamiri, co-Vice President of the SESAME Council; Chris Llewellyn Smith, former CERN Director General and current SESAME Council President; and Mohamed Tarek Hussein, co-Vice President of the SESAME Council.

CERN's digital library software gets smart

"This is the first time we've held such a big workshop," explains Jean-Yves Le Meur, head of Digital Library Services. "There was a lot of demand for an event like this, and bringing

out version 1.0 of Invenio was an obvious time to do it." Ask him what's new in version 1.0 and he opens his eyes wide. "There's so much, it's hard to summarise. One key improvement is that the code and the database are stable, well tested and optimised, which makes the software more efficient."

The participants, on the other hand, highlight new features coming up in Invenio 1.0, such as faceted searching. "It's just what we've been waiting for," says Alexander Wagner from the Jülich Research Centre. "It's a bit like on Amazon where, based on your previous choices, suggestions are generated for other items you might be interested in. But instead of basing it on bestseller lists, Invenio makes an intelligent selection based on indexing. It makes queries much more transparent for users."

The participants at the workshop represent about half of the 40 known user institutes which are at various stages of implementing Invenio. Many of the users, such as SLAC, Desy and Fermilab, are from the high energy physics community, and arXiv is in the process of migrating its service using Invenio as the underlying software.

The huge flexibility of the software means that it has attracted users in areas outside

To mark the release of Invenio 1.0, the first User Group Workshop was held last week, with more than 40 developers, system administrators and librarians from 14 different countries attending. The participants were able to catch up on developments in CERN's digital library software and get a glimpse of where it's going next.

high energy physics too, from general university libraries to the new Museum of the 20th Century in Venice, due to open in 2014. The workshop had the added value of bringing users with varying needs together. "We are in regular contact with the developers of the software at CERN, which is great, but this is the first time that I've met other users who are dealing with the same specific issues as we are," says Gregory Favre from EPFL's institutional repository Infoscience. Fama Diagne Sene from Bambe University in

Senegal agrees: "Now we can work together to solve common problems, and it's reassuring to feel part of a community of users."

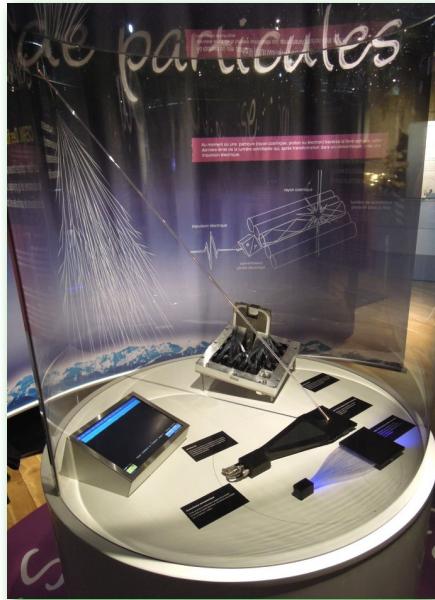
The CERN Invenio team has worked hard to make the workshop happen. "We put a lot in, but we got a lot out of it too," underlines Jean-Yves Le Meur. "I'd like to say a big thank you to my four colleagues who led the sessions: Jérôme Caffaro, Samuel Kaplun, Ludmila Marian and Tibor Simko. Their excellent presentations were not only useful to the participants, but they allowed us to significantly improve our documentation too. It's also been great to meet people we've been corresponding with for years. I think the workshop has really reinforced the Invenio community."

Joannah Caborn Wengler



Exhibition: Fibre optics, the future is at hand

The Services industriels genevois (SIG), who are in the process of deploying an optical fibre network in Geneva, have decided to showcase this technology with an exhibition entitled "Fibre optique – Le futur à portée de main." The exhibition, which will be open to the public



The CERN module, designed for the SIG's fibre optics exhibition. Visitors can discover a cosmic ray detector (on the right) and its oscilloscope (on the left), as well as one of the ALFA detector modules (at the back).

Until 20 June, the *Pont de la Machine* in Geneva will host an exhibition on fibre optics, sponsored by SIG. CERN, a major user of this technology, was invited to take part with a presentation of some of its scintillating fibre detectors.

from 26 April to 20 June, is being held at the Espace ExpoSIG, at the *Pont de la Machine* in the centre of Geneva.

"CERN's Physics Department was approached by SIG at the start of this year to design one of the five modules that make up the exhibition," explains François Vasey of PH. "The Department's PH-DT and PH-ESE Groups decided to build a cosmic ray detector with detection electronics, a photomultiplier and an oscilloscope, specially for this occasion. In this way, people can witness cosmic rays being detected, live, as they visit the *Pont de la Machine*, showing them that those rays are constantly passing through all of us!" The date was well chosen: exactly one hundred years ago, the Austrian American physicist Viktor Francis Hess discovered cosmic rays.

Fibre optics are in very wide use at CERN, not just for transferring data but also for particle detection. "This exhibition gives us a chance to demonstrate CERN's expertise in developing and applying fibre optics in particle physics," adds François Vasey. "That's why we decided to show one of the modules of the ALFA detector (Absolute Luminosity for ATLAS), which is also based on this technology. After the exhibition, it will revert to its role as a spare module."



Espace ExpoSIG
Pont de la Machine 1
1204 Genève
0844 800 808
exposition@sig-ge.ch

Monday to Friday 9 am to 6 pm
Saturday and Sunday
10 am to 5 pm

Admission free

Anaïs Schaeffer

The space-traveling neutralino is back at CERN

"The neutralino is a symbol of the link between particle physics and the science of the Universe," said Rolf Heuer in his Word from the DG published in the Bulletin on that occasion. "Neutralinos are theoretical particles that the LHC will be looking for, and if they exist, they're strong candidates for the Universe's dark matter."

Today, the space-traveling neutralino from the Particle Zoo is back at CERN. At the colloquium he gave on 24 May, Christer, who is in charge of ESA's scientific programme onboard the International Space Station, gave a detailed overview of the experiments that astronauts are currently carrying

During his visit on 24 and 25 May, former CERN Fellow and ESA astronaut Christer Fuglesang gave a soft-toy neutralino back to CERN's Director for Research Sergio Bertolucci. In 2009, CERN's Director-General Rolf Heuer had given Christer the neutralino to be part of his official flight kit, just before the astronaut began his second mission on space shuttle STS-128.

out. In particular, he presented the ALTEA experiment, which uses silicon strip detectors to measure the flux of ions inside the station; ACES (Atomic Clock Ensemble in Space), which will provide unprecedented global time accuracy and perform tests of Einstein's general theory of relativity; and SpaceQUEST, which is proposed to test Bell inequalities for distances over 1000 km and a possible "decoherence" effect due to gravity.



ESA astronaut Christer Fuglesang (right) returns the neutralino to CERN Director for Research Sergio Bertolucci (left).

During his two-day stay, Christer visited the ATLAS visitor centre, the CERN control centre and the AMS control room. He also gave a talk at the Lycée International de Ferney-Voltaire. "I was very happy to once again enjoy CERN's nice atmosphere," he said just before leaving CERN. "You can breathe science everywhere here! I would be very happy to have the opportunity to come back to CERN and - who knows? - to be able to carry out a common research programme here. I've discussed the possibility of joint ESA-CERN activities with the CERN Management with a view to strengthening the relationship between the two organisations."

Welcome back neutralino, and we hope to again welcome back Christer!

For further information about this topic, please read:

1. Recording of and material on Christer's talk at CERN (<https://indico.cern.ch/conferenceDisplay.py?confId=187351>)
2. Previously published Bulletin articles (CERN Bulletin 37/2009, CERN Bulletin 35/2009 36/2009, CERN Bulletin 26/2007, CERN Bulletin 51/2006)
3. The Courier Viewpoint (<http://cerncourier.com/cws/article/cern/28798>)
4. Video interviews (<https://cdsweb.cern.ch/record/1200735>, <https://cdsweb.cern.ch/record/1193108>, <https://cdsweb.cern.ch/record/1209884>, <https://cdsweb.cern.ch/record/1451588>)
5. Quantum Diaries (<http://www.quantumdiaries.org/2012/05/25/cern's-prodigal-neutralino-comes-back-from-outer-space/>)

Antonella Del Rosso

Music season coming soon

Summer is coming, and along with it comes the music season. CERN will be hosting its two annual rock music concerts: Music on the Lawn and the Hardronic Festival.

The two events are organised by the CERN Music Club, which has been sharing the enjoyment of good

On 16 June, CERN's music season will open with Music on the Lawn. The event is the CERN Music Club's contribution to the Fete de la Musique and will take place on the terrace of Restaurant 1 from 2 p.m. to 8 p.m. The Hardronic Festival, CERN's long-running rock festival, will be held on the evenings of 20 and 21 July in Prévessin, on the terrace behind Restaurant 3. If you would like to help with the organisation, please contact the Music Club by e-mail: music.club@cern.ch.

music with its numerous fans for many years. "Music on the Lawn was originally cre-

ated so that the members of the Music Club could meet and hear each other's songs," recalls Simon Baird, the club's president. "The club has around 20 bands, and they never get to meet each other because the rehearsal room can only be used by one at a time. So this event is regarded mostly as "a day for the club", but still, it's open to everyone. It has some great music and, of course, it's free."

The Hardronic Festival is usually a bigger event, which welcomes a large public every year, including a large contingent from the ranks of the Summer Students. "The festival's attractions include children's entertainment, food, drinks and two nights of music from many different bands, all from the CERN Music Club," says Simon. "This year we might even succeed in bringing back together "Les Horribles Cernettes", CERN's legendary band that formed back in 1990."

Everybody is welcome at the popular summer festivals, in which other clubs also usually take part to present their activities. And, of course, they are welcome to help! Even if you are not a member of a CERN club, the organisers will welcome your participation and help with the organisation. So go ahead and volunteer!

*CERN Bulletin
in collaboration with Julio Rosenfeld*



The Canettes Blues Band during the 2011 Hardronic Festival. (© Christoph Balle, 2010).

100 and counting!

The working group on administrative procedures, set up in 1993 as a kind of discussion forum, held its 100th meeting on 26 April. Chaired by Gabriele Thiede, the group comprises departmental administrative officers (DAOs), a representative of the Users Office, a representative of the GS-AIS group and members of the Administrative Processes Section of the DG RPC Group (see box).

"The working group meets five times a year to discuss measures to simplify and improve CERN's administrative procedures," explains Gabriele Thiede, head of the Administrative Processes section. "We also use these meetings to share our experience of administrative practices, which may differ from one department to another."

Since its first meeting 20 years ago, the group has taken on an important role in ensuring the smooth running of CERN's administration, as current and past members attending the 100th meeting testified. "I would like to thank everyone who has been involved in the work of the GTPA for

The CERN working group on administrative procedures (GTPA) held its 100th meeting last month. Here we take a look at the activities of this valuable and important administrative body.

their support," says Gabriele. "They have made an important contribution to improving CERN's administrative procedures."

To mark the event, she also presented a summary of the group's major achievements over the years, drawing attention to important projects that owe their existence to its work. These include the Admin e-guide (<https://admin-eguide.web.cern.ch/admin-eguide/accueil.asp>), the EDH Personal Action Form (PAF), the new personalised departure formalities, salary advances and the arrival procedure.

CERN Bulletin

The Administrative Processes Section

The Administrative Processes Section plays a key role in CERN's administration. It is staffed by three staff members and has been part of the DG-RPC Group since 1 January 2012.

The section performs the following tasks:

- analysing, simplifying and standardising the administrative procedures currently in use at CERN,
- proposing improvements, deletions and additions to new administrative procedures, particularly those relating to new computerised applications introduced at CERN,
- ensuring that new procedures are implemented in a standardised and efficient manner, following discussion with the GTPA,
- checking and authorising the implementation of all new administrative forms.

The mandate of the Administrative Processes Section covers all of CERN's administrative procedures, with the exception of internal procedures implemented by individual departments.



Current and past members of the GTPA celebrate the group's 100th meeting.

Creative collisions between body and mind

"I'm really in an exploratory phase of what I'm calling "The Metaphor Dance Project" at the moment," Gilles Jobin explains. "And I'm learning so much. For example, I didn't

know that gravity is one of the weakest forces, and that the force which holds matter together and therefore which holds

Gilles Jobin, an internationally renowned dancer and choreographer from Geneva, is just starting his three-month residency at CERN. It's the Organization's first Collide@CERN dance and performance residency and is funded by the City and Canton of Geneva. Freshly installed in his new office, he's just starting to get to grips with the combination of dance and high energy physics.

us together is much stronger. Just knowing this is making me experience my body in a different way."



Jobin's 2011 piece "Spider Galaxies" was in part inspired by a visit to CERN and its music incorporated LHC data. © Cie Gilles Jobin 2011 – Photograph: Grégory Batardon.

For a dancer, that's quite a fundamental statement. And Gilles Jobin is not just any dancer, but an internationally renowned choreographer. He has been commissioned by the *Paris Théâtre de la Ville* and the Ballet Gulbenkian in Lisbon, and he lived and worked in London for seven years. His dance pieces have been produced all over the world, yet he remains a local in Geneva, his native city. "That's one of the things I appreciate about the residency at CERN," he says. "It gives me a chance to get to know the 'city outside the city,' which is how some people in Geneva see CERN. Also, because I will still be in Geneva after the end of the residency, I will easily be able to follow up any promising activities and connections that emerge from it."

His first step, after the success of the official launch event which took place on 23 May in the Globe, is to reach out to people working at CERN. "Scientists use different metaphors to explain the abstract ideas they work with, and they use their bodies to make gestures and illustrate what they are talking about," he explains. "So as well as working with my inspiration partner João Pequenão I want to meet more people at CERN and discover more about how the metaphors connect with movement as well as with science." So keep your eyes peeled for the announcements of the various activities that Gilles is preparing. Who knows, your contribution to "The Metaphor Dance Project" might just be the essential creative impulse for the next Jobin masterpiece.

Joannah Caborn Wengler

PhD students share their work

On 9 May, 24 students who are completing their PhD under the CERN Doctoral Student Programme were joined by their CERN supervisors and some of their university supervisors at an event organised by HR and the Technical Students Committee (TSC). After an address by the

Last week, the second Doctoral Student Assembly gave students in the final stages of their PhD at CERN the chance to meet and present their work.

Director-General Rolf Heuer and short presentations by Ingrid Haug from HR and TSC Chair Stephan Russenschuck, the students presented their work in a poster session.

Held in a packed Council Chamber, the event was a great opportunity for the doctoral students to get to know each other and to share their work in fields as diverse as radiation protection, computing, physics and engineering.

Joannah Caborn Wengler





Browsing the Internet: good-bye anonymity!

When you are connected to the Internet, you give away a variety of information: your PC's IP address, some browser settings like language or screen size, and, probably, your login information. So how private is private?

You might argue that your current IP address has been picked from a pool of addresses and therefore regularly changes, so it does not necessarily always pinpoint you. On the other hand, with the dawn of IPv6 there is no need any more for shared IP addresses as the pool of IPv6 addresses is considered non-exhaustive. With IPv6, you might get a permanent IP address assigned. Privacy... game over. The best chance regarding this will be legislation. Already today, IP addresses are considered to be personally identifiable information (PII) in some European countries, which means that storing IP addresses for profiling purposes is illegal. However, to be sure, your best option is to use so-called "anonymisation services", but this depends how much you trust them!

Then there is the too talkative browser. Depending on which browser you use,

Do you consider browsing the Internet to be your private business? When visiting random web-sites, how far do you assume you are anonymous? Would it matter to you that Google or Facebook can profile your browsing behaviour in order to better target you with advertisements? Did you notice that you already get targeted ads when you are logged on to Google or Facebook even if you are visiting completely different websites? If matters to you, note that browsing anonymously on the Internet is far from easy.

it already exposes lots of information: the local language, time zone, screen size, installed plugins, available system fonts, etc. As these settings can vary a lot, it means that the probability of you and I having exactly the same settings is very low. Ergo, this information can be used to pinpoint your browser and uniquely identify you when browsing the web... If you don't believe it, check out Panopticlick (<http://panopticlick.eff.org/>) and note that some browser plug-ins like "Stealthier" (<https://addons.mozilla.org/en-US/firefox/addon/stealthier/>), or security settings like "In Private" browsing might change the odds in your favour.

Finally, your login. If you are logged in with your Google or Facebook account, they can profile your activity even outside their domains. This is mainly due to the wide usage of Google Ads/Analytics and Facebook's "Like"-button: the embedded code directly feeds back into your Google and Facebook profile... For a bit more privacy here, log out whenever you don't need

to be logged in, and consider installing something like the "Ghostery" plug-in in your browser (<http://www.ghostery.com/download>).

So what else can you do? Not much, as I am not suggesting that you change your browsing habits. There is no silver bullet. I just wanted to take away the illusion that you browse the Internet anonymously. You don't and you hardly can.

For further information, please check our web site or contact us at Computer.Security@cern.ch.

If you have any questions, suggestions or comments, please contact the Computer Security team or visit us at <http://cern.ch/security>.

Computer Security Team



Looking for materials properties? Find the answer in CINDAS databases

News from the Library

The Center for Information and Numerical Data Analysis and Synthesis (CINDAS) at Purdue University produces several databases on the properties and behaviour of materials. The databases include:

- ASMD (Aerospace Structural Metals Database) which gives access to approximately 80,000 data curves on over 220 alloys used in the aerospace and other industries;

Materials properties databases are a crucial source of information when doing research in Materials Science. The creation and regular updating of such databases requires identification and collection of relevant worldwide scientific and technical literature, followed by the compilation, critical evaluation, correlation and synthesis of both existing and new experimental data.

- the Microelectronics Packaging Materials Database (MPMD), providing data and information on the thermal, mechanical, electrical and physical properties of electronics packaging materials, and
- the Thermophysical Properties of Matter Database (TPMD), covering the properties of over 5,000 materials with approximately 50,000 data curves.

Trial access to these resources is available until 31 August 2012, so you are very welcome to try these databases and send us your feedback at library.desk@cern.ch.

Online access to the databases:

[https://cindasdata.com/Applications/
loginUser](https://cindasdata.com/Applications/loginUser)

CERN Library



Ombuds' Corner Le coin de l'Ombuds

In this series, the Bulletin aims to explain the role of the Ombuds at CERN by presenting practical examples of misunderstandings that could have been resolved by the Ombuds if he had been contacted earlier. Please note that, in all the situations we present, the names are fictitious and used only to improve clarity.

Social exclusion

In this special video edition of the Ombuds' Corner, Vincent Vuillemin takes a look at a social exclusion at CERN. Please note that the characters and situations appearing in this work are fictitious, and any resemblance to real persons or events is purely coincidental.

<https://cdsweb.cern.ch/record/1451582>

Contact the Ombuds early!

<http://cern.ch/ombuds>

Vincent Vuillemin

Michael DE SOUSA (1989 - 2012)

We are deeply saddened to announce the death of Mr Michael De Sousa on 13 May 2012. Mr De Sousa, who was born on 02.09.1989, was working as an apprentice in the TE Department and had been at CERN since 24.08.2009.

The Director-General has sent a message of condolence to his family on behalf of the CERN personnel.

Social Affairs - Human Resources Department

We will always remember Michael as a good friend. We not only worked with him but shared our cares and our joys and celebrated special occasions together. We will remember his good humour, his friendliness, his generosity and the happy times we spent together.

His colleagues, friends and trainers from the apprenticeship centre



It is with great emotion and deep sadness that we learn of the tragic loss of our colleague and friend Michael De Sousa. Michael was a hard working colleague, cordial and considerate. Within a few months, he marked his presence by the implementation of the instrumentation benches for gas permeation measurement in polymers, and the calibration of high technology gas analyzers, necessary for vacuum technology. His last contribution will enable us to measure pressures in the extreme high vacuum range for the ELENA project. With the continuation of this activity, his memory will remain.

His accomplishments will remain with us for many years; the memory of his good humour and his energy, will remain engraved in our memories forever.

From colleagues of the TE-VSC group



Michael celebrating Christmas with CERN apprentices in December 2009.



Members of the personnel shall be deemed to have taken note of the news under this heading. Reproduction of all or part of this information by persons or institutions external to the Organization requires the prior approval of the CERN Management.

ANNUAL REPORT 2011 FROM THE HUMAN RESOURCES DEPARTMENT

Annual Report 2011 from the Human Resources Department concerning the settlement of disputes and discipline under Chapter VI of the Staff Rules and Regulations.

1) Introduction

The 2011 Annual Report under Chapter VI ("Settlement of Disputes and Discipline") of the Staff Rules and Regulations (SRR) serves to report:

- cases of submission of requests for review,
- internal appeals,
- appeals to the ILOAT, and
- cases in which disciplinary action was taken.

2) Disciplinary Action

Under Article S VI 2.01 of the SRR, the Director-General may take disciplinary action against members of the personnel who, whether intentionally or through carelessness, are guilty of a breach of the SRR or of misconduct that is to the detriment of the Organization.

Article S VI 2.02 of the SRR stipulates that depending on the gravity of the breach or misconduct involved, the disciplinary action may be:

- a warning,
- a reprimand,
- suspension without remuneration or pay for a period not exceeding six months,
- loss of one or more steps, or
- dismissal.

The Joint Advisory Disciplinary Board (JADB) shall be consulted by the Director-General prior to taking any disciplinary action other than a warning or a reprimand (Article S VI 2.04).

In cases of particularly serious misconduct, the Director-General may decide to dismiss without notice and without consulting the JADB (Article S VI 2.05).

From 1 January 2011 through 31 December 2011, there were four cases of misconduct.

1. A case of late declaration regarding a change in personal status resulted in the issuance of a warning.

2. A case of driving while intoxicated on the CERN site resulted in the issuance of a reprimand.
3. A case of fraud with respect to unemployment benefits resulted in a suspension of contract without pay for a period of six months. The JADB was consulted by the Director-General prior to taking disciplinary action.
4. A case of fraud and misappropriation of the assets of the Organization resulted in a dismissal. The JADB was consulted by the Director-General prior to taking disciplinary action.

3) Requests for Review and Appeals

Under Article S VI 1.01 of the SRR, members of the personnel may challenge an administrative decision by the Director-General where it adversely affects the conditions of employment or association that derive from their contract or from the SRR.

If permitted by the SRR, a decision may be challenged:

- internally within the Organization through a review procedure or,
- through an internal appeal procedure. In this, the Joint Advisory Appeals Board (JAAB) shall be consulted by the Director-General prior to taking any final decision on the merits.

A decision may be challenged externally by the filing of a complaint with the ILOAT:

- when internal procedures have been exhausted and the decision is final or,
- when an internal challenge is not permitted by the SRR.

Requests for review

From 1 January 2011 through 31 December 2011, there was one submission of a request for a review of an administrative decision taken by the Director-General. The staff member concerned challenged the rating of his performance as meritorious and the related decision of periodic advancement, e.g. the granting of one periodic step. The administrative decision was maintained following consultation of the hierarchy and the department head concerned.

Internal appeals

From 1 January 2011 through 31 December 2011, there was no internal appeal of an administrative decision by the Director-General.

Appeals to the ILOAT

From 1 January 2011 through 31 December 2011, there was no appeal filed with the ILOAT.

HR Department

REMINDER: SWISS AND FRENCH CARDS

Communication from the HR Department to members of personnel holding an employment or association contract, above 50% and for more than 3 months, with the Organization.

The HR Department would like to remind all members of personnel concerned that they are obliged to:

- **hold a valid Swiss Légitimation card AND a valid French card** ("Titre de séjour spécial" or "attestation de fonctions") at all times during the exercise of their functions in the Organization;
- return these documents as soon as their functions in the Organization cease.

Not following these rules could be prejudicial to the Organization and appropriate measures may be taken towards the member of personnel concerned.

Information and procedures concerning Swiss and French cards (first application, renewal, theft/loss, etc.) are available in the Admin e-guide (https://admin-eguide.web.cern.ch/admin-eguide/cartes/proc_cartes_home.asp).

Users and Unpaid Associates must contact the Users Office at:

<http://ph-dep-usersoffice.web.cern.ch/ph-dep-UsersOffice>Welcome.html>

HR Department
Tel.: 72967 or 79494



Take note

SEVENTH INTERNATIONAL ACCELERATOR SCHOOL FOR LINEAR COLLIDERS

We are pleased to announce the Seventh International Accelerator School for Linear Colliders. This school is a continuation of the series of schools which began six years ago. The first school was held in 2006 in Sokendai, Japan, the second in 2007 in Erice, Italy, the third in 2008 in Oakbrook Hills, USA, the fourth in 2009 in Huairou, China, the fifth in 2010 in Villars-sur-Ollon, Switzerland, and the sixth in 2011 in Pacific Grove, USA.

The school is organized by the International Linear Collider (ILC) Global Design Effort (GDE), the Compact Linear Collider (CLIC) and the International Committee for Future Accelerators (ICFA) Beam Dynamics Panel. The school this year will take place at the Radisson Blu Hotel, Indore, India from November 27 to December 8, 2012. It is hosted by the Raja Ramanna Center for Advanced Technology (RRCAT) and sponsored by a number of funding agencies and institutions around the world including the U.S. Department of Energy (DOE), the U.S. National Science Foundation (NSF),

Fermilab, SLAC, CERN, DESY, INFN, IN2P3, CEA, CPAN, KEK, IHEP, RRCAT and India Department of Atomic Energy (DAE).

We will offer an 11-day program, including an excursion, a site visit and an examination. There will be 8 half days of lectures. The first three days will be an introductory course with an overview of proposed future lepton colliders (ILC, CLIC and the muon collider) as well as introductions to linac basics, damping ring and circular lepton collider subjects and beam instrumentation. This will be followed by two elective courses, one on accelerator physics and the other on RF technology to run in parallel for 6 days. Each student is required to take the introductory course and one of the two electives. A complete program can be found on the school web site:

<http://www.linearcollider.org/GDE/school/2012---Indore>

There will be homework assignments and a final examination but no university credits.

We encourage young physicists (graduate students, post doctoral fellows, junior

researchers) to apply. In particular we welcome those physicists who are considering changing to a career in accelerator physics. This school is adopting an in-depth approach. Therefore, former students are welcome to apply if they have a compelling reason to do so. The school will accept a maximum of 70 students from around the world. Students will receive financial aid covering their expenses for attending including travel (full or partial). There will be no registration fee. Each applicant should complete the online registration form (which can be found on the school web site) and submit a curriculum vita as well as a letter of recommendation from his/her supervisor (in electronic form, either PDF or MS WORD). The application deadline is July 20, 2012.

For more information, please contact: Dr. Satish C. Joshi, Raja Ramanna Centre for Advanced Technology, Indore, M. P. – 452013, India, telephone: +91-731-2442244, fax: + 91-731-2442200, email: lcs2012@rrcat.gov.in

Organizers of the Seventh International Accelerator School for Linear Colliders

CONFERENCE: DIVERSITY IN THE WORKPLACE - HOW TO CAPITALISE ON DIFFERENCES TO FOSTER INNOVATION

by Cristina Bianchi.

Tuesday 19 June 2012 – 12 noon to 2 p.m. Brasserie Restaurant 2

Diversity Lunch : Lunchtime conference organised by the CERN Diversity Programme.

Diversity is an acknowledged source of creativity and innovation that can improve performance and ultimately create a definite advantage for the Organization. However, if not managed well both at team and individual level, it can become a source of misunderstanding, interpersonal tensions and conflict. The speaker will share concrete strategies and approaches to capitalise on a diverse workforce and create the right environment where differences become an asset that leads to creativity, idea generation and, ultimately, innovation.

Cristina Bianchi is specialised in conflict management, cross-cultural relations and effective communication and has

acquired valuable experience working in sensitive areas such as Palestine and Kosovo. Her services as a trainer, facilitator and certified coach focus on management and leadership development both in the private and public sector. Cristina Bianchi gives public presentations on diversity, culture in business, the role of women in leadership, and coaching as a management style.

This presentation will be given in English; questions and discussions will be handled in both official languages.

'Diversity Lunch' – Main course, dessert and coffee 22 CHF.

Everyone working on the CERN site is welcome!

There are a limited number of places available so please sign up as soon as possible at:

<https://espace.cern.ch/event-Diversity/Lists/Diversity%20Lunch/overview.aspx>

CERN Diversity Programme



Take note



LECTURE - PHYSICAL ACTIVITY FOR HEALTH AND WEIGHT LOSS?

Lecture organised by the Medical Service in the framework of the campaign "Move! Eat better", by Dr Per Bo Mahler.

Thursday, 21 June, 6.30 p.m., Main Auditorium

Physical activity plays a vital role in human evolution and is one of man's most important basic needs. However, it was not until the 1990s that scientific literature started to take a real interest in it. World Health Day in 2002 helped to raise awareness of the impact of physical activity on health in industrialised and developing countries alike.

The benefits of moderate physical activity are universally recognised. Today a sedentary lifestyle is known to be a risk factor on a par with or even greater than smoking. The recommendations are an hour of moderate physical activity per day for children and at least 150 minutes of moderate exercise or 75 minutes of vigorous exercise per week for adults. Nevertheless, a large proportion of the population continues to be insufficiently active.

Substantial differences can be observed according to age, region and country and are attributable to various factors (biological, psycho-social, behavioural, social and environmental). Making a significant change in the habits of a population requires efforts to be made at all levels. Health promotion measures are essential to encouraging regular physical activity.

About the speaker

Per Bo Mahler is a specialist in sports medicine and holds a masters degree in public health. For twenty years he has been chief medical officer at the Unité alimentation et mouvement of the Geneva Youth Health Service. The unit is responsible, among other things, for promoting health in schools. Per Bo Mahler is also a sports doctor at the La Tour hospital.

For more information:

www.ge.ch/ssj/
www.la-tour.ch



Language training



SUMMER FRENCH COURSES FOR BEGINNERS (9 JULY TO 23 AUGUST)

We are now offering a French course for beginners. If you are interested in following this course, please contact Kerstin Fuhrmeister : Tel. 70896.





Academic training

30 & 31 May 2012

ACADEMIC TRAINING LECTURE

Regular Programme

from 11:00 to 12:00

Main Auditorium, Bldg. 500

Cloud Computing

by Belmiro Rodrigues Moreira / LIP
Laboratorio de Instrumentacao e Fisica
Experimental de Part.

Cloud Cloud computing, the recent years buzzword for distributed computing, continues to attract and keep the interest of both the computing and business world. These lectures aim at explaining "What is Cloud Computing?" identifying and analyzing its characteristics, models, and applications. The lectures will explore different "Cloud definitions" given by different authors and use them to introduce the particular concepts. The main cloud models (SaaS, PaaS, IaaS), cloud types (public, private, hybrid), cloud standards and security concerns will be presented. The borders between Cloud Computing and Grid Computing, Server Virtualization, Utility Computing will be discussed and analyzed.

6, 7 & 8 June 2012

ACADEMIC TRAINING LECTURE

Regular Programme

from 11:00 to 12:00

Bldg. 80-1-001 - Globe 1st Floor

How Large-Scale Civil Engineering Projects Realise the Potential of a City

In this series of three special lectures, leading experts from AECOM would explore the impact of a trio of major projects on a single city.

In common with every metropolis, London has run-down districts and infrastructure in need of upgrading. The lectures propose to cover three of the biggest challenges: regenerating run-down areas; reducing congestion and transporting people more efficiently; and improving water and wastewater systems.

Each project contributes to a collective public aim - to realise the potential of a growing city, and ensure its healthy, sustainable and competitive future.

Lecture 1:

Into the lecture series and The London 2012 Olympic Games

by Bill Hanway / Executive Director of Operations, AECOM Europe

Most cities share a group of common complex challenges – growing populations, ageing infrastructure, and mitigating the effects of climate change. These require similar responses to find the most appropriate solutions to make sure that all urban dwellers can have the basics of food, warmth, clean water and shelter. In addition, they must have the ability to lead full and productive lives being able to travel around easily and effectively, that they have homes, jobs and places to enjoy their leisure time. To achieve all of this requires a holistic vision and collaborative approach involving all stakeholders from local, regional and national government and utility companies, to private business and local communities.

To provide an example of the holistic approach to reworking old cities, this series begins with a dynamic first-hand account from a key player in one of Europe's largest regeneration projects. The Lower Lea Valley in East London was a rundown and melancholic place in 2000, but its radical transformation has created an exemplary setting for the 2012 Olympic Games. In the spirit of previous London developments based around green spaces, the parkland

created for the Games (the setting for 35,000 homes) is designed to act as a catalyst for improvement. The legacy masterplan is crucial for this and the speaker's team has gone on to win the Olympic masterplan competition for Rio 2016.

Lecture 2:

The Crossrail Project(2/3)

by Nicholas Lawton (Director of Programme Management, AECOM, Europe)

The fascinating story behind the most significant addition to the UK's transit system for 50 years. When completed in 2017, this 118 km rail network will traverse the city from west to east via a 21km tunnel connected to the Underground. As well as improving the transport system for the entire city, Crossrail will stimulate the economy of east London and ensure easy access to the Olympic legacy site.

Lecture 3:

The Thames Tideway Tunnel (3/3)

by Steve Woodrow (Head of Tunnelling, AECOM, UK)

Insight into a pioneering project at the cutting edge of engineering: the upgrade to London's failing sewerage system. With a growing population and heavier rainfall, the River Thames is regularly polluted in breach of European Directive requirements. Two new storage and transfer tunnels will run up to 85m deep under the river and will intercept and divert sewer overflows to a treatment facility in east London. The challenges faced by constructing a tunnel project of this size under the river and through London's historic urban environment will set a new UK record for this type of tunnelling.



ORACLE SUPPORT PROVIDES A RANGE OF NEW TUTORIALS

The IT DB is pleased to announce a new series of Oracle tutorials, with the proposed schedule. Note that these tutorials will take place in the Filtration Plant (Building 222) and that no registration is required.

4 June (Monday)

09:00 Oracle Architecture, Przemyslaw Adam Radowiecki

The objective is to go through Oracle database physical and logical structures, highlighting the consequences of some of Oracle's internal design choices for developers of database applications. The presentation defines Oracle-related basic terms and illustrates them based on the database architecture.

The following topics will be discussed:

- Database with its physical and logical structures (tablespace, segment, extent, block, database user, schema, user's quota)
- Single instance (significant memory structures: buffer cache, shared pool)
- Real Application Cluster (RAC)
- Connecting to the database (TNS, database service)
- SQL statement processing (hard and soft parsing, cursor, cursor sharing, execution plan)

10:00 Database and Application Design, Katarzyna Maria Dziedziniewicz-Wojcik

The primary goal of this presentation is to show how to design a scalable application using Oracle that performs. We will start with schema design that allows storing the data in a way that is efficient, scalable and makes those data easily retrievable. In that part focus will be put on ER model and best practices in schema design. Later we will explain in detail SQL statement processing, with a number of tips/and tricks. The last part will talk about building a robust application using privileges, different connection types and a number of other features.

11:00 Database Security, Szymon Jozef Skorupinski & Daniel Gomez Blanco

During the Database Security Tutorial we will focus on Oracle Database security from the developers' point of view. We'll cover a few topics, including authentication, roles and privileges, auditing, encryption and SQL injection attacks.

5 June (Tuesday)

09:00 SQL and Advanced SQL, Marcin Blaszczyk

SQL (Structured Query Language) is a programming language designed for managing data in relational database management systems. The aim of the tutorial is to provide an overview of the SQL language basic capabilities and several selected advanced SQL features available in the Oracle Database Management System. The main part of this tutorial will focus on the use of advanced SQL such as: complex queries, analytical functions, set operators, views and temporary tables, materialized views, indexes and partitioning.

10:30 PL/SQL, Zbigniew Baranowski & Stephan Petit

PL/SQL is Oracle's procedural extension of SQL. In this tutorial we will present the basic concepts behind PL/SQL and the general appearance of a PL/SQL program, covering general structure, control statements and basic units of the PL/SQL language.

We will then focus on best scripting practices -things that each developer should know in order to write efficient code and avoid common traps.

8 June (Friday)

09:00 Tuning, Luca Canali & Dawid Wojcik & Eric Grancher

In this session, you will learn how to understand what prevents your application from running as fast as you would like (wait event, SQL monitor, Oracle Enterprise Manager, etc.). In the second part, we will share some indications on how to improve the performance (execution plan, table and index statistics, hinting, SQL baseline, etc.).

You will also learn the key points of how to address complex performance issues in a systematic way and to address performance issues in a quantitative way. A few examples and common pitfalls will be presented.

10:30 Oracle tools and Bindings with languages, Mariusz Piorkowski & Others

This tutorial provides an introduction to common Oracle database administrative tools: how they work, how to install and configure them, how efficiently we can use them. We'll also provide some practice examples of usage. We will cover the following tools: PL/SQL Developer, rlwrap, Benthic Software – (Golden 6.0) and SQL Developer.

The second part of this presentation will address the topic of language bindings, including OCI, OCCI, JAVA, Perl and Python, for example.





Seminars

TUESDAY 29 MAY

LHC SEMINAR

11:00 - Main Auditorium, Bldg. 500

Jet physics in ATLAS

C. DOGLIONI / UNIVERSITE DE GENEVE (CH)

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

The Resurgence of Instantons in String Theory

I. ANICETO

WEDNESDAY 30 MAY

ACADEMIC TRAINING LECTURE

REGULAR PROGRAMME

11:00 - Main Auditorium, Bldg. 500

Cloud Computing (1/2)

B. RODRIGUES MOREIRA / LIP LABORATORIO DE INSTRUMENTACAO E FISICA EXPERIMENTAL DE PART

TH COSMO COFFEE

11:00 - TH Auditorium, Bldg. 4

The XENON100 exclusion limit without considering Leff as a nuisance parameter

C. BOEHM / IPPP DURHAM & LAPTH ANNEXY

TH THEORETICAL SEMINAR

14:00 - TH Auditorium, Bldg. 4

Learning about Inflation and Gravity from Large-Scale Structure

R. SCOCCHIMARRO / NEW YORK UNIVERSITY

THURSDAY 31 MAY

ACADEMIC TRAINING LECTURE

REGULAR PROGRAMME

11:00 - Main Auditorium, Bldg. 500

Cloud Computing (2/2)

B. RODRIGUES MOREIRA / LIP LABORATORIO DE INSTRUMENTACAO E FISICA EXPERIMENTAL DE PART

COLLIDER CROSS TALK

11:00 - TH Auditorium, Bldg. 4

Direct dark matter searches: Mono-jets at ATLAS and CMS TH common room

D. BERGE / CERN, P. SRIMANOBHAS / CHULALONGKORN (TH)

FRIDAY 1 JUNE

INDUCTION SESSIONS

8:30 - Bldg. 593-R-011

INDUCTION PROGRAMME - 1st Part

MONDAY 4 JUNE

CONFERENCES & WORKSHOPS

8:00 - TH Auditorium, Bldg. 4

pA@LHC TH Conference Room

TUESDAY 5 JUNE

CONFERENCES & WORKSHOPS

9:00 - TH Auditorium, Bldg. 4

pA@LHC TH Conference Room

LHC SEMINAR

11:00 - Main Auditorium, Bldg. 500

Recent results from LHCb on W, Z and low mass Drell-Yan production

K. MUELLER / UNIVERSITAET ZUERICH (CH)

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

Unravelling Mathieu Moonshine

S. GOVINDARAJAN / INDIAN INSTITUTE OF TECHNOLOGY MADRAS

WEDNESDAY 6 JUNE

CONFERENCES & WORKSHOPS

9:00 - TH Auditorium, Bldg. 4

pA@LHC TH Conference Room

ACADEMIC TRAINING LECTURE

REGULAR PROGRAMME

11:00 - Bldg. 80-1-001 - Globe 1st Floor

How Large-Scale Civil Engineering Projects Realise the Potential of a City (1/3)

B. HANWAY / EXECUTIVE DIRECTOR OF OPERATIONS, AECOM EUROPE

TH THEORETICAL SEMINAR

14:00 - TH Auditorium, Bldg. 4

Scattering Amplitudes: from QCD to Strings

T. TAYLOR / NORTHEASTERN UNIVERSITY

WEDNESDAY 6 JUNE

ISOLDE SEMINAR

14:30 - Bldg. 26-1-022

Nuclear Physics in India

A. CHATERJEE / BARC

THURSDAY 7 JUNE

CONFERENCES & WORKSHOPS

9:00 - TH Auditorium, Bldg. 4

pA@LHC TH Conference Room

ACADEMIC TRAINING LECTURE

REGULAR PROGRAMME

11:00 - Bldg. 80-1-001 - Globe 1st Floor

How Large-Scale Civil Engineering Projects Realise the Potential of a City (2/3)

B. HANWAY / EXECUTIVE DIRECTOR OF OPERATIONS, AECOM EUROPE

FRIDAY 8 JUNE

CONFERENCES & WORKSHOPS

9:00 - TH Auditorium, Bldg. 4

pA@LHC TH Conference Room

ACADEMIC TRAINING LECTURE

REGULAR PROGRAMME

11:00 - Bldg. 80-1-001 - Globe 1st Floor

How Large-Scale Civil Engineering Projects Realise the Potential of a City (3/3)

B. HANWAY / EXECUTIVE DIRECTOR OF OPERATIONS, AECOM EUROPE