



CERN Bulletin

Nos 09 & 10 – 2 & 9 March 2011

The EDIT school trains future experts in detector technologies

Rolf Heuer and Pier Oddone visit Building 154, which hosted some of the EDIT School laboratory activities.



Like many other branches of science, today's particle physics relies on very complex instruments to provide the performance that unresolved questions require. When we say 'particle physics' we actually mean a whole lot of different specializations that young researchers choose to pursue when they are at university. "In the present situation, it might very well happen that an experimental particle physicist at the end of his/her studies has never actually seen

or worked with a real detector. On the other hand, he or she might be highly specialized in data analysis and interpretation," says Ariella Cattai, a senior physicist in the ATLAS Collaboration and Director of the EDIT School. To fill this gap, the EDIT School aims to provide young researchers with a deeper knowledge of the technologies used in the field of detectors and instrumentation.

(Continued on page 2)



A word from the DG



Greening the streets of CERN

This week, CERN took delivery of bi-fuel cars for the first time. Designed to run on petrol or natural gas, these vehicles represent a cost effective way to reduce our emissions immediately. With widely distributed sites and considerable personal transport needs, this is an important step forward and another clear indication of CERN's green credentials.

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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





A word from the DG

(Continued from page 1)

Greening the streets of CERN

CERN's internal public transport service, if I can put it that way, consists of some 500 bicycles, an on-site shuttle service that has transported over 40000 people in the last 12 months, and a sizeable fleet of light vehicles numbering 866 in total.

As vehicle contracts come to an end, we are constantly on the lookout for greener solutions to our transport needs. Today, natural gas is the ideal solution, being less polluting than either petrol or diesel. Although the vehicles cost slightly more than their petrol equivalents, the difference is partially subsidised by the Swiss natural gas industry, and we consider the emissions reduction well worth the extra investment. Tomorrow's technology may be hybrids or electric vehicles, but that technology is not yet sufficiently cost-effective for us.

When we take full delivery of 100 cars, it will be the largest natural gas fleet in French-speaking Switzerland. So important does the local energy utility, SIG, consider this development to be that they have arranged for natural gas to be available close to CERN at the BP station on the *Route du Nant d'Avril*.

Each step that CERN takes for the environment makes a difference. Our new green buildings and now the fleet of bi-fuel cars are each important in their own right. Taken together, they add up to a long-term engagement by CERN to protect the environment.

Rolf Heuer

The EDIT school trains future experts in detector technologies

(Continued from page 1)

The School combines lectures with hands-on laboratory activities in six different fields of detector and instrumentation techniques. The subjects covered include calorimetry, electronics, gaseous detectors, detection of scintillation and Cherenkov light from crystals and fibres, photodetection, silicon strips and pixel detectors. "The School's rich programme was made possible by the dedication and professionalism of the School conveners and the combined efforts of all the 100 experts who tutored the 90 students," says Ariella Cattai. Tutors came from various Member State institutes, as well as Fermilab and, of course, CERN. Students came from 24 countries, underlining the high level of interest in the School among the physics community

EDIT 2011 took place over two weeks, from 31 January to 10 February. Before leaving CERN, the participants conveyed their enthusiastic appreciation to the School organizers. "It was very rewarding for all of us to receive such positive feedback," says Ariella Cattai. "One of the messages we received reads as follows: What I learned at EDIT2011 will be very useful for the development of my career. And most of all it was a very touching experience to experience the INTELLECTUAL HONESTY of teachers and tutors."

"I was extremely impressed with the way the EDIT school was set up to offer one-on-one tuition in detector technologies," said Director-General Rolf Heuer, who opened the School and dedicated it to Georges Charpak. "This is particularly important today, when the long time-scales of experiments mean that young particle physicists can go through all their graduate studies without direct hands-on detector experience. CERN has a long tradition of innovation in detector technologies, with Georges Charpak being a clear leading light in the field. It was therefore a pleasure to dedicate this School to his memory." And he was echoed by Pier Oddone, Director of Fermilab, who said: "I am hugely impressed with EDIT. The quality of the tutors, the state-of-the-art teaching set-ups and the intensity of the workshops with one tutor per student is astounding. I wanted to join the School right there and then. It is a fantastic opportunity for young scientists and engineers, and the old ones could also learn a thing or two."

The School proved so popular among all the participants that the organizers are planning a second one. Be ready to sign up!

More photos at:

<http://cdsweb.cern.ch/record/1326293>

CERN Bulletin

CERN's newest building

Construction work for the new Building 42 began in January 2009, thanks to support from the Swiss foundation FIPOI (Fondation des immeubles pour les organisations internationales). After two years of work, the building, an extension of Building 40, is ready to accommodate physicists from around the world who have come to work on the LHC. "We had more than 25 external contractors working on the construction site," explains Michael Poehler, who headed the project in the GS Department. "Despite some technical difficulties, we managed to finish the construction works on time."

Building 42 is built on the embankment south of Building 40. The two buildings are positioned back-to-back, for easy access to shared amenities such as the cafeteria and meeting rooms. The floor area is 3200 square metres, with 292 work-spaces grouped into three-desk offices. On the third floor, a large open-plan area provides approximately 30 work-spaces. In terms of building technology, Building 42 will be CERN's first building with all electronically-controlled doors, which can only be opened with an access card. The window blinds

With a growing number of users looking for offices, the shortage of space has become acute, particularly for physicists. Building 42, inaugurated on Friday 11 February, offers almost 300 new work-spaces and a particularly pleasant working environment.

open and close automatically in response to light conditions. The new building is also greener than the others. "The vegetation-covered green roof requires no main-

nance and provides a degree of retention when there is a heavy rainfall," notes Michael Poehler.

The new work-spaces in Building 42 have already been made available to over 200 contented physicists, who will soon be settling into their very comfortable new surroundings.

Anaïs Vernède



Mauro Dell'Ambrogio, the Swiss State Secretary for Education and Research (left), Rolf Heuer, CERN Director-General (centre), and Mark Muller, President of the Government of the Republic and Canton of Geneva and Head of the Department of Construction and Information Technology (right) at the opening of Building 42 on 11 February, 2011.

LHC Report: Beams are back in the LHC

Following the cool-down, the last few weeks have seen an intense few tests of the magnets, power supplies and associated protection systems. These tests, referred to as hardware commissioning, have been completed in record time. At the same time the other accelerator systems have been put through the preparatory machine checkout.

In parallel, the injectors (LINAC2, Booster, PS and SPS) have also come out of the technical stop in order to prepare to deliver beam to the LHC very early in

The LHC has shaken itself awake after the winter break, and, as the snow melts on the lower slopes, the temperature in the magnets has dropped to a chilly 1.9 K once more.

the season. Of particular note here was the remarkably seamless transition to POPS, the PS's new power supply system.

All this work culminated in the LHC taking beam again for the first time in 2011 on Saturday, 19 February. The careful preparation paid off, with circulating beams being rapidly re-established. There then followed a programme of beam measurements and re-commissioning of the essential subsystems such as RF, beam dumps, beam

instrumentation, feedback systems, etc. Initial measurements show that the LHC is in good shape and magnetically little changed from last year.

Low intensity beams were taken back up to 3.5 TeV on Monday night and then through the squeeze. The squeeze reduces the beam size at the collision point inside the experiments and thus increases the collision rate. This year the beam sizes at the collision point are being pushed to lower values than those of 2010 and the first test of 2011 was very encouraging.

CERN Bulletin

Roger Bailey takes over as head of CAS

After 8 years of successful growth in popularity for the School, Daniel Brandt has handed on the baton to Roger Bailey. "The success of the CERN Accelerator School has been the result of a fantastic team effort," says Brandt.

"Along with my assistant - initially Suzanne von Wartburg and then Barbara Strasser - I had help from an advisory committee to decide both on the specialist topic and the venue for each workshop, and dedicated programme committees to help find the expert lecturers for the courses. Their support has allowed us to meet all the objectives I set out when I joined the School in 2003."

"Daniel has left the CERN Accelerator School in great shape," says his successor, Roger Bailey. "In the short term, I see no reason to make any significant changes to the way that the regular schools are run. We

Established at the beginning of 1983, the CERN Accelerator School has developed to include two courses per year offered to hundreds of students from all over the world. Following the successful management of Daniel Brandt, Roger Bailey joins the newly formed Office of the Director of Accelerators and Technology (DAT) and becomes the new Head of the CERN Accelerator School (CAS).

are, however, looking into the possibilities of offering courses on accelerator physics to an even wider community in the not too distant future." Roger is the former head of LHC Operations and joins the DAT group after almost 30 years at CERN.

CAS was established in 1983 as a way to share new knowledge of particle accelerators. The school has grown from a yearly course to two courses per year: a general accelerator physics course held in the autumn, and a spring course on a more specialised topic. Courses are held in CERN

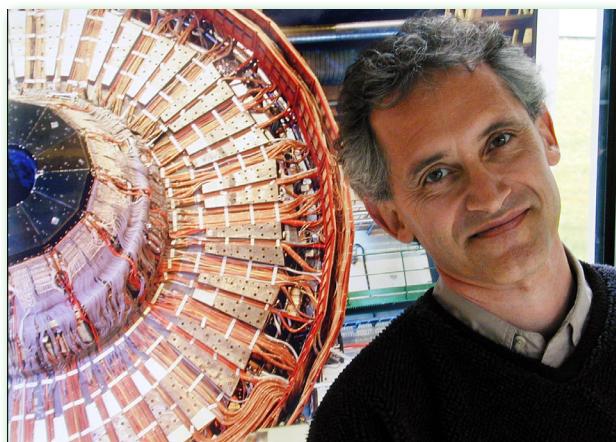


Daniel Brandt visited the famed Rigi steam train (Brunnen, Switzerland) while attending his first CAS course as director in 2003.

Member States and are taught by physicists from CERN and other institutions. Students worldwide are welcome to participate, although the popularity of the School has meant places are often limited.

The next CAS course will be held in the framework of the Joint US-CERN-Japan-Russia School on Particle Accelerators (JAS) on the subject of Synchrotron Radiation & Free Electron Lasers, to be held in Erice, Italy, from 5 to 16 April. It will be followed by the first specialised CAS course of the year, on the subject of High Power Hadron Machines. This course will take place in Bilbao, Spain, from 24 May to 2 June.

Katarina Anthony



Roger Bailey, the new Head of the CERN Accelerator School.

The LHC babies

With the LHC running around the clock, LHC operations engineers have high-pressure jobs with unsociable working hours. These past two years, which will undoubtedly go down in the annals

of CERN history, the LHC team had their work cut out, but despite their high-octane professional lives, several female members of the team took up no less of a challenge in their private lives, creating a mini-baby-boom by which the LHC start-up will also be remembered. "Working hard for the success of a challenging project like the LHC creates an especially inspiring environment that is also personally satisfying. It's fantastic to see that modern women can participate in such a demanding atmosphere. Both CERN and society have made big steps towards estab-

With the machine restart and first collisions at 3.5 TeV, 2009 and 2010 were two action-packed years at the LHC. The events were a real media success, but one important result that remained well hidden was the ten births in the LHC team over the same period. The mothers – engineers, cryogenics experts and administrative assistants working for the LHC – confirm that it is possible to maintain a reasonable work-life balance. Two of them tell us more...

lishing equal opportunities," states former Equal Opportunities Officer, Doris Burckhart.

One of the happy mothers, Reyes Alemany, a physicist working as an LHC operations engineer, has now had her third child: "I'm really happy because my pregnancy went very well," she says. "I was even able to work up until term, and surprisingly enough I didn't find the night shift so tiring during my pregnancy." Her two daughters, aged 7 and 9, welcomed a baby brother into their lives on 7 June 2010. Reyes has been a CERN staff member for 16 years, having started her career as a physicist working on the DELPHI detector before moving on to CMS. She joined the accelerator team in 2006.

On 29 December 2009, a couple of months after the LHC restart, Verena Kain gave birth to her first child. Verena has been working at CERN for nine years, the last four as operations engineer at the LHC. She obtained her doctorate in the LHC interlock team and then carried on as a Fellow at the SPS. "Everything



Verena Kain (left) and Reyes Alemany (right) in the CERN Control Centre.

went very well for me. I gave birth only two weeks after the start of my maternity leave," Verena tells us. "After the birth, I wanted to stay in touch with work and have something else to do in addition to being a mother, breastfeeding and changing nappies." For Verena, the most stressful part of having a baby was trying to find child care when she had to return to work. "Crèche vacancies are few and far between, so you have to be very patient. In the end, I hired a nanny to look after my child," she recalls.

As their careers are more or less put on hold during their sixteen-week maternity leave, mothers can find it difficult to strike a balance between motherhood and professional life when they return to work. According to Reyes: "I do manage to marry both roles but I admit it would be much harder without my husband's precious help. Having said that, I think that if you really love your work, the problems aren't insurmountable." Hats off to all these women who contribute to operating these two unimaginably complex devices - families and the LHC!

Laëtitia Pedrosa

A new video studio for CERN

Almost all international organisations have a studio for their audio-visual communications, and now it's CERN's turn to acquire such a facility. "In the past, we've made videos using the Globe audiovisual facilities and sometimes using the small photographic studio, which is equipped with simple temporary sets that aren't really suitable for video," explains Jacques Fichet, head of CERN's audiovisual service. Once the decision had been taken to create the new 100 square-metre video studio, the work took only five months to complete.

On Monday, 14 February 2011 CERN's new video studio was inaugurated with a recording of "Spotlight on CERN", featuring an interview with the DG, Rolf Heuer.

The studio, located in Building 510, is equipped with a cyclorama (a continuous smooth white wall used as a background) measuring 3 m in height and 16 m in length, as well as a teleprompter, a rail-mounted camera dolly for tracking shots, a boom for overhead shots and a video mixing console with inputs for up to eight HD video cameras. "In the future, we could also install optical fibre cables allowing us to be connected directly to all of the meeting rooms and

auditoriums at CERN or even to Eurovision for direct satellite feeds," explains Jacques. "It will also be possible to conduct live webcasts of major events. Furthermore, we will be able to do multi-camera work using virtual sets with green screen backdrops, which will allow us to have several sets in just one studio. This capability is quite rare in the Geneva region." The video mixer is broadcast-quality, which means that it complies with professional standards for high-quality broadcasting on global television networks.

The Visual Media Office team, comprising approximately ten people from the IT-UDS-AVC and DG-CO groups, will work on projects such as CERN News and other information broadcasts, including Spotlight on CERN. The latter, as its name suggests, is intended to provide focussed reports on CERN. It will deal with topics of a general nature and will be broadcast every six weeks. It was for a Spotlight on CERN broadcast that Rolf Heuer was invited to the studio for its inaugural production.

You can find all the videos on CDS:
<http://cdsweb.cern.ch/collection/Videos>

or by clicking on the "video" link on CERN's public web page:

[http://cdsweb.cern.ch/
record/1331792?ln=fr](http://cdsweb.cern.ch/record/1331792?ln=fr)

Anais Vernède



CERN's new video studio.

The LHC at the AAAS

As the world's largest popular science meeting, the AAAS meeting is a major event in the calendar of science journalists. At this year's LHC session, CERN's coordinator for international relations, Felicitas Pauss, opened the discussion, paving the way for Tom LeCompte of ATLAS, Joe Incandela of CMS, Yves Schutz of ALICE and Monica Pepe-Altarelli of LHCb to report on the status of the first year's analysis from their experiments.

CERN Bulletin

The American Association for the Advancement of Science held its annual meeting in the Walter E. Washington Convention Center in Washington D.C. last week.



Veteran science writer Tim Radford introduces LHC scientists during a media briefing at the AAAS annual meeting. Left to right: Felicitas Pauss, Tom LeCompte, Yves Schutz and Nick Hadley.



News from the Library

"Ancient stargazers interpreted comets and eclipses as omens of doom. They all sought insights into the mystery of The Origin, seeking answers to eternal questions such as: Why are we here? What is the meaning of it all?" This is what Arthur I. Miller, emeritus professor of History and Philosophy of Science at University College London, says in the preface to "The Origin".

This book has been created for the homonymous itinerant exhibition, The Origin: A Journey between Science and Art, which started its tour last year in Frascati (Rome) and will soon be in Geneva. The exhibition has been realized by the non-profit association Nairucu Arts with the support of different institutions, including CERN. Its aim is to create an Art School at Rapale (Nampula) in Northern Mozambique. Beatrice is one of the several artists and scientists who decided to support this goal through their voluntary contribution.

Like the exhibition, this book is composed of three sections: from the origin of the

A Poet in the Laboratory: Meet the Author Beatrice Bressan

Beatrice Bressan, outreach coordinator of the TOTEM experiment, will present her poetry book "The Origin". The presentation will be followed by a reading of her poems.

Universe, to the origin of humankind and the origin in art and myths. It represents an example of how creative thinking belongs to many domains and goes towards a multi-disciplinary approach.

"By the 20th century the task of understanding the heavens had become quite a bit more complicated. (...) With help from Einstein's relativity theory and quantum physics, scientists began to understand how stars were born, lived and died." Miller continues: "But we must look beyond physics in order to understand the aesthetics of the heavens as well as that most human of attributes: consciousness. This is what Bressan means when she writes of the need to feel the vibrations of the Universe. (...) We have to enlarge our scientific world-picture to include physics, biology, psychology and cognitive science, along with not-yet-imagined branches of knowledge."

About the author:

Beatrice Bressan, born in Rome in 1967, is a member of EUSJA (European Union of Science Journalists' Associations). After a degree in Mathematical Physics (La Sapienza University, Rome) and a Masters in Science Communication (ISAS, International School for Advanced Studies, Trieste), she completed a Ph.D. in Knowledge Management and Technology Transfer for the Department of Physical Sciences at Helsinki University within the research programmes at CERN. She has worked several years in these areas as a researcher, writer and head of communications.

**"The Origin", by Beatrice Bressan
will be presented on Tuesday,
8 March 2011 at 4.00 p.m.
in the CERN Library (Bldg. 52 1-052).
Tea and coffee will be served.**

CERN Library

DESERTEC : energy for the planet

The first stage of the project is to install solar power stations in the deserts of the North Africa and Middle East (MENA) region. Deserts are incomparable sources of clean energy and might hold the key to the planet's energy problem. The DESERTEC concept, presented at CERN on 3 February 2011, is quite simple - producing "clean" electricity by exploiting the massive quantities of solar power that beat down upon the deserts. "Our planet's deserts receive more energy in six hours than the whole of humanity consumes in one year! The idea of harnessing this is not new, but we now have the technologies to make it happen," explains Gerhard Knies, a retired German scientist with a long career in particle physics behind him.

The collaboration which founded the project was set up in 2003. Its members come from various fields of activity in many countries and are now united under the banner of the DESERTEC Foundation. "International cooperation is essential," he stresses. "We would also like to forge partnerships with major industries. If you can persuade leading industrialists to invest in a project, the politicians will follow suit."

The initial aim is to install concentrating solar power stations (CSPs, see box) in the

The DESERTEC project, launched in 2007, aims to enable the countries of Europe, North Africa and the Middle East to cover a large part of their energy needs through the use of renewable energies by 2050. One of the instigators of this project is Gerhard Knies, former particle physicist at DESY (Deutsches Elektronen-Synchrotron). On several occasions he also took part in experiments at CERN, and on 3 February he returned to the Laboratory to present DESERTEC at a special colloquium.

deserts of North Africa and the Middle East. Power stations of this kind have been used since the late 1980s in California and, more recently, in Nevada and Spain, and have already proved their worth. If a mere 0.3% of our planet's 40 million square kilometres of desert were equipped with them it would be enough to cover all mankind's present power needs! On the question of transportation, Gerhard is confident: "With a loss rate below 3% per 1,000 km, the technological advances being made today in the field of high-voltage DC power lines make it possible to transport electricity at low cost over long distances."

The DESERTEC Foundation is a non-profit organisation in which everyone can take part. Additional information is available at :

<http://www.desertec.org/en/what-you-can-do/>

Anais Schaeffer

How the DESERTEC project evolved

In 2003, Gerhard Knies and Prince El-Hassan bin Talal of Jordan set up TREC, the Transmediterranean Renewable Energy Cooperation, an international network of researchers, economists and politicians which elaborated the DESERTEC concept and, several years later, set up a foundation of the same name. Supported by renewable energy research institutes from many countries (Morocco, Algeria, Libya, Egypt, Jordan and Yemen), by the German Aerospace Centre and by the Club of Rome, the DESERTEC project has since gone from strength to strength.

In 2008, the DESERTEC Foundation supported the creation of the EU's Mediterranean Solar Plan and in 2009 it launched the industrial initiative Dii GmbH, which brings together partners from the industrial and financial sectors with a view to promoting the DESERTEC concept throughout Europe, North Africa and the Middle East. Subsequently, as a complement to Dii, the French government set up Medgrid (formerly Transgreen), a company dedicated to the construction of power lines in the Mediterranean region.

Finally, last year, the DESERTEC university network (DUN) was born, an alliance of 18 universities and research centres in North Africa and the Middle East, whose purpose is to develop the concept in Europe, North Africa and the Middle East and, ultimately, throughout the world.

Concentrating solar power stations (CSPs)

Heliothermal power plants operate according to the same principle as solar furnaces, using an array of mirrors. The sun's rays are focussed onto a receiver and used to super-heat water. As in a conventional power station, the resulting steam is used to feed electricity-generating turbines, but without the slightest carbon dioxide emission. With their additional heat-storage capability, CSPs can also produce electricity at night or when the sky is overcast and thus ensure a power supply perfectly matching society's needs.



By combining different sources of renewable energy, the DESERTEC project could supply the energy needs of the EU-MENA countries. The red squares represent the total CSP surfaces needed to provide the present day electricity demands of the world, Europe and the MENA region. Source: DESERTEC Foundation, www.desertec.org

Playing with particles

When he was only 17 years old, Hungarian student Csaba Török came up with the idea for the Quark Matter cards. "I wanted people to think of the Standard Model as fun – not just a serious, scientific theory," says Csaba. "The cards can turn everyone into a pseudo-physicist." He shared the idea with his friend Judit Csörgő and her physicist father, Tamás Csörgő, and together they went on to develop Quark Matter into the game it is today. Csaba and Judit were both members of the Science Club that Tamás re-organized and mentors at the Berze Secondary School in Gyöngyös, Hungary, and they are now both studying science at the ELTE University, Budapest.

Playing Quark Matter is an original way of teaching non-physicists about sub-atomic particles and the Standard Model. Every

Could the principles of particle physics ever be explained by a game? Could a deck of cards teach the Standard Model the way Monopoly teaches economics? According to players of the Quark Matter card game, the answer is an easy "yes!".

card in the deck represents a particle or antiparticle. They can be used in four different games: Quark Matter, Anti, Cosmic Showers, and Let's Detect. Anti is similar to the card game "Speed" and teaches about particle-antiparticle relationships. Cosmic Showers is modeled on the development of cosmic showers. Let's Detect is the most advanced game, based on the rules of semi-leptonic decays of hadrons. Finally, Quark Matter involves mixing the cards on the table to simulate quark-gluon plasma and then extracting the particles as they would emerge from a collision.

The Quark Matter cards received an honorary mention in the 19th Hungarian Contest for Junior Innovators, where they proved

popular with every age. "It's a nice feeling to have elementary particles in your hands or in your pocket! As part of the contest, we had to test out the cards on a variety of groups, from schoolchildren to grandmothers, truck drivers and particle physicists," says Tamás Csörgő, who is also the principal investigator of the Hungarian TOTEM team. "A student who is quick on the draw will often out-play a trained researcher." On 23 February, the cards were also awarded the second prize (pictured) at the Eotvos University of Budapest Innovation Contest.

The cards have just reached their first milestone: selling over 120 decks in the USA.

You can purchase your own set of cards online, along with an e-book of instructions for the different games. The book is currently available in English and Hungarian, and a German edition will soon be released.

Katarina Anthony



Csaba Török and Judit Csörgő (second and third from left) at the award ceremony for the Eotvos University Innovation Contest.

A Brief History of CERN

In her comic book, which she entitled "L'accélérateur de paix" (the Accelerator of Peace), Marie traces CERN's history back to its creation, explaining how the needs of post-war Europe led to the construction of an international scientific laboratory.

Marie's four grandparents are all former CERN employees, so the Organization has been part of her life ever since she was small. "I'd always been familiar with the word CERN," she tells us. "But I'd hardly ever been there and knew very little about it." Hence the choice of subject for her project, which offered an excellent opportunity to find out more about a place that had fascinated her for a long time and had brought her grandparents to Geneva from Italy.

CERN's fascinating history, from the period preceding its creation right up to the present day, has inspired many people to take up pen and paper over the years. Recently, Marie Mazzone, a 19-year old student at Geneva's Collège Sismondi, chose it as the subject for her "travail de maturité", which she presented in the form of a comic book.

Having found the subject, all that remained was to decide how to present it. With her love of art and drawing, a comic book seemed an ideal medium. Happy to be able to combine her research with her passion, she set out to answer a host of questions, such as why Geneva had been chosen to host the Organization. She was also curious to know how a laboratory like CERN had come into being. "I realised that after the war, when it came to rebuilding what had been destroyed, Europe was keen to make a fresh start and build new projects," says Marie. She began her research on the Web and then in June 2009, to find out more,

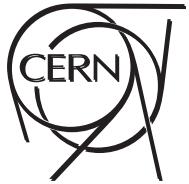
she visited CERN with her grandmother. At that point she had all the information she needed for her comic book. After several months of work, she rounded it off at the point where everything had started: 1954, when the foundation stone of CERN was laid.

After obtaining her "maturité" diploma in June 2010, Marie decided to take a sabbatical to give her time to decide what she wanted to study in the future. We wish her a long and successful career.

Laëtitia Pedroso



Cover of "the Accelerator of Peace" comic book by Marie Mazzone.



Lunchtime Film Presentation

TV programme presentations:

Bang Goes the Theory by BBC (2010) and Beyond the Atom with John Ellis by Redes and Science Networks (2010)

BBC's Bang Goes the Theory explores various aspects of science. In this episode, presenter Dallas Campbell travels to CERN to meet physicist Tara Shears and learn more about antimatter. Other topics include breath-holding techniques such as free diving, and what exactly is horsepower and how is it measured?

In addition, Redes and Science Networks have produced "Beyond the Atom with John Ellis", a TV programme presented by Eduard Punset and featuring CERN theorist John Ellis. The aim of this programme is to understand more about what matter is and what the physicists working on the LHC experiments hope to discover, including the Higgs boson, dark matter and supersymmetry. This programme is in English and Spanish with English subtitles.

**Bang Goes the Theory will be presented on
Friday 11 March from 13:00 to 13:30
Language: English**

**Beyond the Atom with John Ellis will be presented on
Friday 11 March from 13:30 to 14:00**

Language: English and Spanish with English subtitles

Both will be shown in the Council Chamber

Carolyn Lee



FEDERAL CENSUS OF THE POPULATION IN SWITZERLAND

A federal census of the 2010 population has been underway since January 2011. The objective is to provide important insights into the composition of the resident population, households and families in Switzerland and identify trends.

The census methods have been modernised so that it covers only information that is not already contained in Federal, Cantonal and municipal registries of persons; the information will be gathered via questionnaires issued to approximately 3% of the population residing in Switzerland.

In order to obtain representative information about the local population, the Canton of Geneva has requested that questionnaires be issued to international civil servants and members of their families aged 15 and over who live in the Canton. They will be invited to respond to the questionnaire on a strictly voluntary basis. If they choose not to respond to the questionnaire, they will not be contacted again.

The Permanent Swiss Mission to the International Organizations in Geneva wishes in advance to thank those members of the personnel of CERN who choose to participate in this census.

We wish to remind you that international civil servants of Swiss nationality and members of their families have the same obligation to respond as the rest of the population.

*Relations with the Host States Service
Tel. 72848*

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.

ENTITLEMENT TO VOTE IN THE CANTON OF GENEVA AND ENTITLEMENT TO VOTE AND ELIGIBILITY FOR ELECTION IN THE CANTON OF VAUD

You are reminded that, at commune level, certain international civil servants and their family members:

1. are entitled to vote in the Canton of Geneva
2. are entitled to vote and are eligible for election in the Canton of Vaud.

For further information, in particular regarding the special procedure to be followed to apply to exercise these entitlements, you are invited to consult the information published, in French only, on the Swiss Mission's website (topic « Privileges and immunities (Manual) ») :

- * <http://www.eda.admin.ch/eda/fr/home/topics/intorg/un/unge/gepri/manvot/manvt1.html> (for the Canton of Geneva),
- * <http://www.eda.admin.ch/eda/fr/home/topics/intorg/un/unge/gepri/manvot/manvt2.html> (for the Canton of Vaud).

The dates of the forthcoming ballots are available on the official websites of the cantonal administrative authorities :

- * for Geneva: <http://www.ge.ch/votations-elections/prochains-scrutins/>;
- * for Vaud: <http://www.vd.ch/fr/themes/etat-droit-finances/votations-et-elections/prochains-scrutins/communaux-2011/>

In this context, please note, especially with regard to the eligibility for election, that:

- * in accordance with Articles S I 3.05 and I 3.06 of the Staff Rules "*Members of the personnel wishing to take part in the public and political life of a State shall comply with the relevant legislation*" and shall refrain from "*any act or activity which is incompatible with their functions*" or "*would be morally or materially prejudicial to the Organization*";
- * Article R I 3.03 of the Staff Regulations stipulates that : "*Employed members of the personnel wishing to engage in a political activity shall first notify the Director-General in writing (...). Political activity shall include the exercise of a public function, conducting an election campaign and public participation in the life of a political party.*"

*Relations with the Host States Service
Tel.: 72848*

TAXATION IN SWITZERLAND

Memorandum concerning the 2010 internal taxation certificate and the 2010 income tax declaration forms issued by the Swiss cantonal tax administrations

You are reminded that the Organization levies an internal tax on the financial and family benefits it pays to the members of the personnel (see Chapter V, Section 2 of the Staff Rules and Regulations) and that the members of the personnel are exempt from federal, cantonal and communal taxation on salaries and emoluments paid by CERN

I - Annual internal taxation certificate for 2010

The annual certificate of internal taxation for 2010, issued by the Finance and Procurement Department, will be available from 1st March 2011. It is intended exclusively for the tax authorities.

1. If you are currently a member of the CERN personnel you will receive an e-mail containing a link to your annual certificate, which you can print out if necessary.
2. If you are no longer a member of the CERN personnel or are unable to access your annual certificate as indicated above, you will find information explaining how to obtain one at the following link: https://cern.ch/admin-eguide/impots/proc_impot_attestation_interne.asp.

In case of difficulty in obtaining your annual certificate, send an e-mail explaining the problem to helpdesk@cern.ch.

II - 2010 income tax declaration forms issued by the Swiss cantonal tax administrations

The 2010 income tax declaration form must be completed in accordance with the indications available at the following address:

https://cern.ch/admin-eguide/impots/proc_impot_decl-ch.asp

IF YOU HAVE ANY SPECIFIC QUESTIONS, PLEASE CONTACT YOUR TAX OFFICE DIRECTLY.

This information does not concern CERN pensioners, as they are no longer members of the CERN personnel and are therefore subject to the standard national legal provisions relating to taxation.

HR Department
Contact: 73903



Take note

TO ALL MEMBERS OF THE PERSONNEL

Summer work for children of members of the personnel

During the period from 13 June to 16 September 2011 inclusive, there will be a limited number of jobs for summer work at CERN (normally unskilled work of a routine nature), which will be made available to children of members of the personnel (i.e. anyone holding an employment or association contract with the Organization). Candidates must be aged between 18 and 24 inclusive on the first day of the contract, and must have insurance coverage for both illness and accident. The duration of all contracts will be 4 weeks and the allowance will be 1717 CHF for this period. Candidates should apply via the HR Department's electronic recruitment system (E-rt):

https://ert.cern.ch/browse_intranet/wd_pds?p_web_site_id=1&p_web_page_id=8886&p_no_apply=&p_show=N

Completed application forms must be returned by 11 April 2011 at the latest. The results of the selection will be available by the end of May 2011.

For further information, please contact:

Virginie.Galvin@cern.ch

HR Department
Tel. 72855

BLOCKING OF CERN ACCOUNTS AFTER 28 FEBRUARY 2011

Since last year, all persons owning a CERN computer account must follow the compulsory CERN Computer Security Course. This course usually takes less than 15 minutes and is available online from inside and outside CERN at <http://cern.ch/computersecuritycourse>.

Failure to pass this course by February 28th 2011 will lead to the corresponding account being blocked.

If you haven't taken it yet, do it NOW!

Accounts of users who have not followed this course yet will be blocked during the first weeks of March. As a consequence, these users will no longer be able to log into any CERN computing resources with their primary account. Affected users

PROTECTING YOUR FILES ON THE AFS FILE SYSTEM

The Andrew File System is a world-wide distributed file system linking hundreds of universities and organizations, including CERN. Files can be accessed from anywhere, via dedicated AFS client programs or via web interfaces that export the file contents on the web. Due to the ease of access to AFS it is of utmost importance to properly protect access to sensitive data in AFS. As the use of AFS access control mechanisms is not obvious to all users, passwords, private SSH keys or certificates have been exposed in the past. In one specific instance, this also led to bad publicity due to a journalist accessing supposedly "private" AFS folders (SonntagsZeitung 2009/11/08). This problem does not only affect the individual user but also has a bad impact on CERN's reputation when it comes to IT security.

Therefore, all departments and LHC experiments agreed in April 2010 to apply more stringent folder protections to all AFS user folders. The goal of this data protection policy is to assist users in protecting their data on AFS. In order to apply this policy, the AFS Service has started to perform regular compliance checks by scanning all AFS home directories at CERN (group, project and scratch folders are not affected). The access rights of these folders will be automatically and regularly reviewed and corrected in order to enforce the corresponding policy:

- * Access to "~/"(home)-folders will be limited such that anonymous users can only list the contents;

- * Access to "~/private"-folders will be fully blocked to anonymous users;
- * Access to "~/public"-folders can be opened to be readable for anonymous users;
- * Simultaneous read and write rights to any folder are prohibited for anonymous users;
- * Special care will be taken with "~/www"-folders.
- * (Anonymous users are defined to be any potentially very large group of people, for example all CERN or AFS users.)

The deployment has already started for the IT Department and will subsequently address all other departments during Spring 2011. Prior to any automatic action, users will receive an e-mail notification about upcoming corrections. A script in line with the aforementioned rules has been made available. It allows interactive correction of AFS ACLs on home folders:

[/afs.cern.ch/project/afs/etc/correct_acls](http://afs.cern.ch/project/afs/etc/correct_acls)

Yours,

the AFS Service and the Computer Security Team

P.S. For the experts, note that AFS access protections are configured differently than for the Linux/Posix file system.

CERN SHUTTLE

As of Monday 21 February, a new schedule will come into effect for the Airport Shuttle (circuit No. 4) at the end of the afternoon:

- * Last departure at 7:00 pm from Main Building, (Bldg. 500) to Airport (instead of 5:10 p.m.);
- * Last departure from Airport to CERN, Main Building, (Bldg. 500), at 7:30 p.m. (instead of 5:40 p.m.).

Group GS-IS



Take note



ACCU MEETING

DRAFT Agenda

for the meeting to be held on

Wednesday 9 March 2011

At 9:15 a.m. in room 60-6-002

- | | |
|--|--------------------------------------|
| 1. Chairperson's remarks | 7. Update on Safety at CERN |
| 2. Adoption of the agenda | 8. The new account management system |
| 3. Minutes of the previous meeting | 9. Users' Office news |
| 4. Matters arising | 10. Any Other Business |
| 5. News from the CERN Management | 11. Agenda for the next meeting |
| 6. Report on services from GS department | |

Anyone wishing to raise any points under item 10 is invited to send them to the Chairperson in writing or by e-mail to

Michael.Hauschild@cern.ch

Michael Hauschild (Secretary)

ACCU is the forum for discussion between the CERN Management and the representatives of CERN Users to review the practical means taken by CERN for the work of Users of the Laboratory. The User Representatives to ACCU are (CERN internal telephone numbers in brackets):

| | | | |
|----------------|---|-------------------|---|
| Austria | G. Walzel (76592) | Norway | J. Nystrand (73601) |
| Belgium | C. Vander Velde (Chairperson) (71539) | Poland | M. Witek (78967) |
| Bulgaria | | Portugal | P. Bordalo (74704) |
| Czech Republic | S. Nemecek (71144) | Slovak Republic | A. Dubnickova (71127) |
| Denmark | J.B. Hansen (75941) | Spain | I. Riu (76063) |
| Finland | K. Lassila-Perini (79354) | Sweden | K. Jon-And (71126) |
| France | N. Besson (75650) A. Rozanov (71145) | Switzerland | M. Weber (71271) |
| Germany | H. Lacker (78736) I. Fleck (73593) | United Kingdom | M. Campanelli (72340) T. Berry (76291) |
| Greece | D. Sampsonidis (77979) | Non-Member States | D. Acosta (71566) E. Etzion (71153) |
| Hungary | V. Veszprémi (72318) | | C. Jiang (71972) |
| Italy | G. Passaleva (75864) N. Pastrone (78729) | CERN | N. Zimine (75830) E. Auffray (75844) |
| Netherlands | G. Bobbink (71157) | | R. Hawkings (78432) |

CERN Management is represented by S. Bertolucci (Director for Research and Computing), S. Lettow (Director for Administration and General Infrastructure) and J. Salicio Diez/PH with M. Hauschild/PH as Secretary. Human Resources Department is represented by J. Purvis, the General Infrastructure Services Department by M. Tiirakari, the Occupational Health Safety and Environmental protection Unit by E. Cennini, and the CERN Staff Association by M. Goossens. Other members of the CERN Staff attend as necessary for specific agenda items. Anyone interested in further information about ACCU is welcome to contact the appropriate representative, or the Chairperson or Secretary (73564 or Michael.Hauschild@cern.ch).

<http://cern.ch/ph-dep-ACCU/>





Take note



Save lives
Give your blood

***On Thursday 17 March 2011
From 9.00 to 17.00***

BLOOD DONATION

CERN
RESTAURANT 2

Organized by the Cantonal Hospital of Geneva

Number of donations during the last blood donations:

- 104 donors in July 2010
- 119 donors in November 2010

Let's do better in 2011 !!!
Give 30 minutes of your time
to save lives...





Training & Development

CCM - UNDERSTANDING AND WORKING WITH COMPETENCIES

Find out what competencies are, make them come to life by sharing your experience with colleagues, and understand what they represent in our work environment. All staff members are encouraged to attend.

For sessions in March and April, register at:

[https://aislogin.cern.ch:443/aislogin/
Login?REFER=https://aismisc.cern.ch/
aismisc/f%3Fp%3D119:1](https://aislogin.cern.ch:443/aislogin/Login?REFER=https://aismisc.cern.ch/aismisc/f%3Fp%3D119:1)



External meeting

Geneva University
Physics Department
24, quai Ernest-Ansermet
CH-1211 Geneva 4

Lundi 28 février 2011

17h00 - École de Physique, Auditorium
Stückelberg

Theory of the spin wave Seebeck effect in magnetic insulators
Prof. Gerrit Bauer
Delft University of Technology

The subfield of spin caloritronics addresses the coupling of heat, charge and spin currents in nanostructures. In the center of interest is here the spin Seebeck effect, which was discovered in an iron-nickel alloy. Uchida et al. recently observed the effect also in an electrically insulating Yttrium Iron Garnet (YIG) thin magnetic film. To our knowledge this is the first observation of a Seebeck effect generated by an insulator, implying that the physics is fundamentally different from the conventional Seebeck effect in metals. We explain the experiments by the pumping of a spin current into the detecting contacts by the thermally excited magnetization dynamics. In this talk I will give a brief overview over the state of the art in spin caloritronics and describe the theoretical developments to understand the spin (wave) Seebeck effect. The reported results have been obtained in collaboration with J. Xiao, K. Xia, K. Uchida, E. Saitoh, and S. Maekawa and support by the Dutch FOM foundation.

Une verrée en compagnie du conférencier sera offerte après le colloque.

Prof. Markus Büttiker



Seminars

MONDAY 28 FEBRUARY

TH JOURNAL CLUB ON STRING THEORY

14:00 - TH Auditorium, Bldg. 4

TBA

TBA

COMPUTING SEMINAR

14:00 - IT Auditorium, Bldg. 31 3-004

Application Lifecycle Management - HP's approach

Y. KEREN / HP

TUESDAY 1 MARCH

HR SEMINAR

08:30 - Bldg. 593 / Room 13

INDUCTION PROGRAMME - 1st Part

N. DUMEAUX, S. LYNNE HOBSON / CERN, E. MACARA,
D. SERAFINI

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

String Theory and The Velo-Zwan-ziger Problem

R. RAHMAN / PISA

WEDNESDAY 2 MARCH

TH COSMO COFFEE

11:00 - TH Auditorium, Bldg. 4

Aidnogenesis via Leptogenesis and Dark Sphalerons

E. FERNANDEZ-MARTINEZ / CERN

THURSDAY 3 MARCH

TH SEMINARS: COLLIDER CROSS TALK

11:00 - TH Auditorium, Bldg. 4

Two recent topics on jet substructure: Classification of energy flows in narrow jets and the N-subjettiness jet shape observable

M. PAPUCCI / CERN, J. KIM / SEOUL NATIONAL UNIVERSITY

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA (Note Unusual Day!)

S. HELLERMAN / IPMU

FRIDAY 4 MARCH

TRAINING AND DEVELOPMENT

09:00 - Bldg. 593

Post Induction day training on popular IT and GS services

TH INFORMAL LATTICE MEETING

11:00 - TH Auditorium, Bldg. 4

TBA

M. PANERO / UNIVERSITY OF HELSINKI

MONDAY 7 MARCH

TH JOURNAL CLUB ON STRING THEORY

14:00 - TH Auditorium, Bldg. 4

TBA

J. GOMIS / PERIMETER INSTITUTE

TUESDAY 8 MARCH

JOINT EP/PP/LPCC SEMINAR

11:00 - CERN

SUSY searches at the LHC with the ATLAS experiment

M. D'ONOFRIO / UNIVERSITY OF LIVERPOOL

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA

SHEER EL-SHOWK

WEDNESDAY 9 MARCH

A&T SEMINAR

11:00 - Kjell Johnsen Auditorium, Bldg. 30 7-018

Study of nuclear fuel element materials by advanced techniques

C. DEGUELDRÉ / LABORATORY FOR NUCLEAR MATERIALS,
NUCLEAR ENERGY AND SAFETY DEPT., PSI

TH THEORETICAL SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA

R. GODBOLE / CERN AND INDIAN INSTITUTE OF SCIENCE,
BANGALORE, INDIA

THURSDAY 10 MARCH

TH SEMINARS: COLLIDER CROSS TALK

11:00 - TH Auditorium, Bldg. 4

The non-perturbative parameters in Higgs cross sections at the LHC

S. MOCH / DESY

FRIDAY 11 MARCH

TH INFORMAL LATTICE MEETING

11:00 - TH Auditorium, Bldg. 4

TBA

S. NECCO / CERN