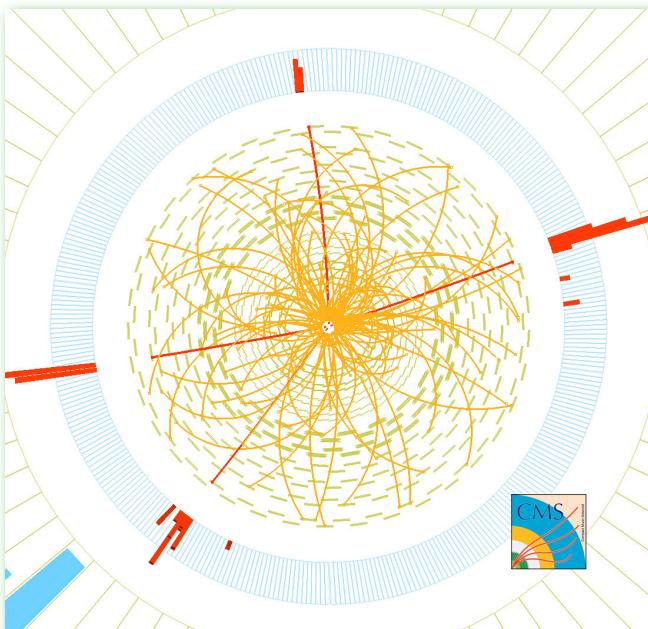


New CMS management: catching the Higgs (or non-Higgs)



With around 4,300 active members representing every continent and the task of uncovering some of the deepest mysteries of the Universe, CMS is constantly under the spotlight. The pressure is on to ensure the high performance of the detector while providing solutions for extremely accurate but quick data analysis. "The LHC machine is setting the pace for CMS," explains Joseph Incandela from UC Santa Barbara/CERN, the new CMS spokesperson. "The 2012 run will most probably go to a higher energy and intensity. The detector will face tougher pile-up conditions, and our teams have been working hard to ensure that everything works as expected

when the LHC resumes operation a few weeks from now."

Going to higher luminosity is a big technical challenge for the experiment but it's not worried concern that we observe in Incandela's look. Rather, he looks "happily challenged" and content to be leading what he calls "a fantastic collaboration" at this historic moment in time. "In 2012 we will focus on solving the Higgs "to-be or not-to-be" dilemma," says Joao Varela from LIP Portugal, one of the two new CMS

Nos 06 & 07 – 8 & 15 February 2012



A word from
the DG

Putting science on the agenda

The job of CERN Director-General comes with a lot of responsibility, and that's particularly true today. We're living through a period of unique circumstances for science. Positive indicators, such as a renewal of interest in physical sciences at the University level and unprecedented public interest in the LHC, are aligning with storm clouds in the form of a prolonged economic crisis that will put downward pressure on everyone's budgets.

(Continued on page 2)

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(Continued from page 1)

Putting science on the agenda

That means that science has to make its voice heard if it's to preserve support, and if it wants to be in a position to play the role it must in navigating the major societal challenges of our time.

For that reason, I have been a fairly rare sight at CERN of late. Last week, I was in Davos for the annual meeting of the World Economic Forum. It was my second time at Davos, and I used the opportunity to argue that science should be more closely linked to the political thread of the meeting. I think my argument was heard, and I will be taking it up again with the WEF before next year's meeting.

This week began in Brussels, with discussions on the European Research Area: CERN is a prime example of what Europe can achieve when it pools its scientific talent and resources in a common project. If it's Wednesday, it must be Copenhagen, for an informal meeting of EU Ministers for Competitiveness, organized as part of the Danish EU Presidency. The meeting discussed the next framework programme, Horizon 2020. CERN contributed to the planning stages of Horizon 2020, and our science is set to benefit. Finally, I'm ending the week in Oxford for a meeting of the International Linear Collider Steering Committee and the International Committee for Future Accelerators where the long-term future of global particle physics is on the agenda.

This has not been a typical week, but it's been an important one. The world's economy may be in the doldrums, but the rise in interest in science by young people is part of the solution. It remains for us to ensure that those who make decisions on the future role of science and technology are fully aware of what's at stake.

Rolf Heuer

Watch a video interview with Rolf Dieter Heuer, made by Edie Lush for Hub Culture at the meeting in Davos at:

http://www.youtube.com/watch?v=qpoRKQvZ_Ok

New CMS management: catching the Higgs (or non-Higgs)

(Continued from page 1)

deputy spokespersons. "However, we will also have much improved tools to look for supersymmetric particles. Last year, some people were saying that the experiments had ruled out supersymmetry. This is not true. This year's higher collision energy will vastly increase the probability of creating massive supersymmetric particles, in particular the s-top."

Interesting results are also likely to come from the 2011 ion-ion data analysis and from the new proton-ion run planned for 2012. "The heavy-ion community at CMS is relatively small but they are miracle workers," says Tiziano Camporesi, CERN, the other of the two new CMS deputy spokespersons. "The whole CMS community has benefited from their achievements, for example at the level of event reconstruction. Some of these techniques are proving particularly useful now that the event pile-up is increasing."

In a collaboration that sees a couple of new institutes joining its contingent every year, emphasis is also placed on the training of the new generations of physicists. "It is really important to develop a new generation of

young scientists who will be able to deal with detector-related issues and, at the same time, perform the data analysis. Being an experimentalist today is a challenging job that involves many different skills," underlines Joao.

The CMS management is looking forward to starting the new run. "2012 could be the annus mirabilis of particle physics. We are fortunate because we have highly professional collaborators capable of fixing huge problems in many different areas. Please write that they are all fantastic," concludes Tiziano. Delivered as requested!

Antonella del Rosso

Watch the video interview with CMS Management at:

<https://cdsweb.cern.ch/sslredirect/www.youtube.com/embed/ZSMs99luEt0>

Credits: Produced by Achintya Rao. Copyright CERN, for the benefit of the CMS Collaboration (2012).

LHC Report: Restart preparations continue

Additional work was required around Point 5 due to the discovery and repair of a problem with the RF fingers at the connection of two beam vacuum chambers in CMS. The repair has been completed successfully and the sector is now under vacuum. In order to avoid rushing the delicate final operations required for closing the detector, the restart of the machine has been postponed by one week, from 7 March to 14 March.

In the machine, the first cool-down to 1.9 K has started in several sectors, and the cool-down of the whole machine is still planned to be finished by 21 February. The time window between 22 February and 14 March will be dedicated to powering and cryogenic tests.

Since 12 December, the Radiation Protection (RP) group has been deeply involved in the work in the accelerator complex to ensure the protection of people against ionising radiation. For this purpose, the RP group determines

Maintenance and consolidation work has been progressing well in both the machine and the experiments in preparation for the March restart

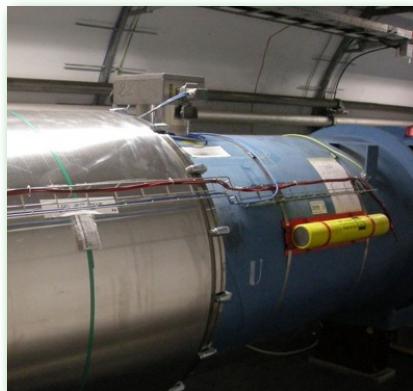
the hazards associated with prompt and residual radiation exposure and performs the radiological area classification, materials classification and risk analysis of work places.

"The radiation dose to carbon-based materials (cable and magnet coil insulation) used in the accelerator complex is recorded. Since last year, the LHC has been equipped with 550 radio-photoluminescent (RPL) dosimeters," explains Julia Trummer from the Radiation Protection group. "RPL dosimeters are tiny glass cylinders of 6mm in length and 1mm in diameter. Radiation creates luminescence and colour centres in the glass. The luminescence centres are excited by a UV source and the intensity of the emitted light is related to the radiation dose. The doses that can be measured range from a few Gy up to MGy."

"In order to prepare for future interventions – especially those during the next long shut-

down – material samples are being placed in selected areas," adds Cristina Adorisio, also an RP group member. "These samples contain materials used in the connections between the magnets. An activation measurement of these samples will help to estimate dose values to workers."

Katy Foraz for the LHC team and Julia Trummer for the RP Group



A sample carbon-based material is attached to the LHC beampipe (the white bag taped to the green line), for later measurement of radiation doses.

Swimming against the tide: explaining the Higgs

So what is the Higgs? Something fundamental. Something to do with mass. If your interest in physics is more than simply passing, you may find that rooms full of chattering politicians or the use of different footwear when walking through snow just don't do the job in convincing you why the Higgs is so important. And if images of fish make you feel like a fish out of water - or at least one swimming against a strong current - then perhaps you would appreciate a different approach.

The need for the Higgs

Whilst gauge theories and their dense mathematical formulae are only within the reach of a few, the motivations that led to the development of Higgs theory have a more familiar start. Indeed, at the root of the problem are the masses of particles very well known to CERN: the W and the Z. Not only were they discovered here, but most of the LEP programme was devoted to making precision measurements of their properties. Whilst photons, the carriers of the electromagnetic force, have no mass at all and are free to zip along at the speed of light, W and Z particles, carriers of the weak force, are massive and travel more slowly. This single fact posed an enormous problem to physics.

Theoretical descriptions of forces are governed by fundamental symmetries which dictate that the particles carrying the forces must have no mass. The fact that the W and Z are massive breaks this symmetry and, without correction, leads to nonsensical predictions - for example of interactions with probabilities greater than 100%. Nature

"Never before in the field of science journalism have so few journalists understood what so many physicists were telling them!" tweeted the UK Channel 4's Tom Clarke from last December's Higgs seminar. As a consequence, most coverage focused on debates over the use of the label "god particle" and the level of excitement of the physicists (high), whilst glossing over what this excitement was actually all about.

therefore must have a way of correcting the inconsistency. And by far the most promising candidate is the Higgs field¹⁾.

How the Higgs works

The Higgs field fills all space and it is through their interaction with this field that the W and Z acquire their mass. Other force-carrying particles – the photon for the electromagnetic force and the gluon for the strong force – do not feel any interaction with the Higgs field and remain massless. The existence of such a field preserves the underlying symmetry of the theory, whilst explaining the broken symmetry we observe in our experiments. As such, it underpins the entire Standard Model, the rulebook governing all particles and their interactions.

The Higgs mechanism, through which force carriers obtain different masses, also has as a direct consequence the different reaches of forces – very short for the weak force, infinite for the electromagnetic. With the presence of the Higgs field, these forces can cohabit in one unified electroweak theory.

Interactions with the Higgs field are not just reserved for force-carrying particles. The theory can also explain how all other fundamental particles acquire their rest mass. But don't make the mistake of thinking the Higgs field is responsible for all mass. Interaction with the field actually contrib-

utes less than 1 kg to the mass of an average person²⁾. Your remaining mass comes from the energy of the various forces holding your bodies together – mainly the strong force binding quarks inside nucleons, with a tiny contribution from the electromagnetic force that reigns over the atomic scale.

That's for the Higgs field, but what about the Higgs boson? Well, it's just the detectable manifestation of the field. Just as the electromagnetic field is communicated via photons, the Higgs field also has its boson. Using energy to stir up a field and produce a boson will be covered in a future Bulletin article. Suffice it to say here that evidence for the Higgs boson in the LHC experiments would prove the existence of the field.

The end is just the start

Reading some articles, it can seem like the Higgs solves nearly all problems in physics. The boson has certainly survived 40 or so years at the top of physicists' most-wanted list. However, in its most basic form, incorporation of the Higgs field into the Standard Model is not completely satisfying. It does the job of explaining how the symmetry between electromagnetic and weak force carriers is broken and it accounts for how particles acquire their mass. But it does not predict or explain the degree of interaction with the field and hence the relative masses of particles. Moreover, it does not explain why symmetry is broken in this way. It seems we are looking at just the visible tip of an iceberg – hidden below must be a deeper, more fundamental theory that gives reason to what we see on the surface.

Be it some form of a Higgs field, or another mechanism altogether, the theoretical problems posed by the symmetry breaking need to be solved. And once we know the secret Nature employs, the story doesn't end there. On the contrary, this is just the start. Exploration of the Higgs field will commence with the discovery of its boson. A new chapter in physics is only just beginning.

Emma Sanders

¹⁾ What is today known as the Higgs field was independently proposed in 1964 by Robert Brout and Francois Englert; Peter Higgs; and Gerald Guralnik, Carl Richard Hagen, and Tom Kibble.

²⁾ A Zeptospace Odyssey, A Journey into the physics of the LHC, by Gian Giudice.



All aboard!

This train doesn't take people, it takes pictures. Its purpose? To save CERN's surveyors from having to take the alignment measurements manually, particularly in areas where operators are subject to constraints due to radioactivity (in line with the ALARA principle of keeping radiation exposure to a level that is "as low as reasonably achievable").

The surveyors' train, over four years in development, is the joint brain-child of several groups from the EN and BE Departments. The result is a state-of-the-art device which, as Thierry Feniet, the EN-HE Group member who designed the vehicle, explains, "can be controlled from the surface using a network of optical fibres and WiFi antennas".

Let's step on board for a virtual tour of this train, fitted out with ultra-modern surveying equipment (see photo). Suspended from a monorail attached to the ceiling of the LHC tunnel, the engine pulls its four wagons (two containing the measuring

Every year, CERN's surveyors take detailed measurements to check the alignment of the LHC components. This year, from 16 to 18 January, they took some of those measurements for the first time using a brand-new remotely controlled train in one of the long straight sections.

equipment, one for the controls, and one for the batteries) in the direction of Point 7 and its 38 collimators, clocking up speeds of up to 6 km/h.

"The measuring wagon is equipped with four photogrammetric cameras and two moveable arms," says Patrick Bestmann, the surveyor in the BE-ABP Group who designed the measurement system. "The arms have sensors that are used to track a reference wire which is strung along the section being measured. When the train pulls up next to a component whose alignment is to be measured (e.g. a collimator or a magnet), it halts and triggers simultaneous read-out of the different sensors including the four cameras. The data serve to reconstruct the precise coordinates in three dimensions for collimators and magnets." By combining the 3-D data for a section, the surveyors can calculate the relative positions of all of the components.

"While measurements are being taken, the calculations are performed inside the control wagon and forwarded in real time to operators on the surface," says EN-ICE Group member Cédric Charrondière, who developed the measurement software. "This allows us to verify the measurements on a continuous basis, and to compare them with earlier measurements so as to detect any movement that may have taken place."

Given that the train's payload and operating régime can be customised easily, it is likely to be joined by others like it in the near future. Thierry Feniet is gratified: "The Radiation Protection Service already has plans to order three trains for the purpose of radiation monitoring. Civil Engineering has also shown a keen interest. They have demonstrated that it is possible to do a tunnel inspection very easily using a special camera fitted to the train." As for the surveyors, they are already looking at the idea of using this kind of train in the future to measure the alignment of the magnets in the LHC arc sections.

Anaïs Schaeffer

Watch a video about this "Lone Wagon" at:

<https://cdsweb.cern.ch/record/1421578>



From left to right: Thierry Feniet, Patrick Bestmann and Cédric Charrondière in the arms of the measuring wagon.

Studying antimatter with laser precision

The ALPHA collaboration has been working to trap and study antihydrogen since 2006. Using antiprotons provided by CERN's Antiproton Decelerator (AD), ALPHA was the first experiment to trap

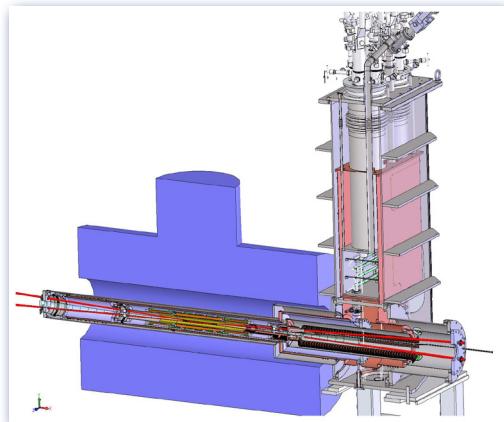
antihydrogen and to hold it long enough to study its properties. "The new ALPHA-2 experiment will use integrated lasers to probe the trapped antihydrogen," explains Jeffrey Hangst, ALPHA spokesperson. "The use of lasers for precision measurements will complement the microwave spectroscopic studies that we initiated in 2011."

Unfortunately, laser spectroscopy cannot simply be incorporated into the existing set-up. "ALPHA was designed before we had even proved that trapping antimatter was possible," says Hangst. "It is a very compact experiment – catching and mixing charged particles to make antihydrogen in a single unit. ALPHA-2 will split these two processes, allowing us to store antiprotons when the

The next generation of antihydrogen trapping devices, ALPHA-2, is moving into CERN's Antiproton Decelerator (AD) hall. This brand-new experiment will allow the ALPHA collaboration to conduct studies of antimatter with greater precision. ALPHA spokesperson Jeffrey Hangst was recently awarded a grant by the Carlsberg Foundation, which will be used to purchase equipment for the new experiment.

AD is off-line and making the installation of lasers possible."

The Carlsberg Foundation grant will finance one of the largest parts of the new ALPHA-2 experiment: the superconducting solenoid magnet. While Carlsberg may be more widely known for its beers, its foundation has been supporting the sciences since the late 1800s. "In Denmark, the Carlsberg name is readily associated with the funding body," says Hangst. "They have provided funding to postgraduates in a variety of disciplines and grants for experimental equipment. In the case of ALPHA-2, the Foundation just happens to be funding one of the largest parts of the experiment."



A 3-D view of the new magnet (in blue) and cryostat. The red lines show the paths of laser beams. LHC-type current leads for the superconducting magnets are visible on the top-right of the image.

With ALPHA-2 currently scheduled for installation within the next few months and results from the 2011 AD run under analysis, expect to hear more from the collaboration...

Katarina Anthony



Authors or signatories?

Next week, the Conceptual Design Report (CDR) for CLIC Physics and Detectors will be published, and it will be fronted by a signatory list of over 1000 people. A volume describing the CLIC accelerator will follow soon after. CLIC, the Compact Linear Collider, is an international study for a possible future particle physics research facility, and one of several options on the table for the post-LHC era. Keeping future options open has been part of the normal run of things since particle-physics-time-immemorial: several technologies are studied and developed in parallel so that when the physics results from operating facilities point the way forward, the community can choose the best option for the physics, and for the available resources.

"Long-term R&D is essential in particle physics," explains Steinar Stapnes, Linear Collider Study Leader at CERN, "and the CLIC project is part of a broad global effort to develop options for the future. These include energy upgrades to the LHC and a superconducting linear collider as well as CLIC. We believe very strongly that having these options

Over recent years, the traditional author list has been joined by a new kid on the block: a signatory list, used by projects ranging from TESLA to SuperB, and soon to be joined by CLIC. What's the difference?



available as real implementation possibilities is very important."

Like many formal documents, a Conceptual Design Report is usually authored and signed by a group of people. But it's not always obvious who should be on the author list. Sometimes formal collaborations prepare the various types of design reports. This was the case, for example, with the LHC experiments. But for TESLA, SuperB and now CLIC Physics and Detectors, there's no formal collaboration structure, which makes the author list less obvious. Furthermore, the work has been carried out over a long timescale, and sometimes jointly with other projects worldwide that have common technical challenges, making it virtually impossible to define an up-to-date and representative author list.

The solution adopted by the TESLA linear collider study, spearheaded by DESY, was to invite anyone who supports the project

to sign, and this is the approach that the CLIC study has adopted for its Physics and Detectors CDR, a document drawn from a very diverse range of sources and building on the work of scientists from all over the world over a period of decades. The process was initiated for the CLIC CDR in September 2011 and presented at the Linear Collider workshop in Grenada last October. Signing it shows support for CLIC as one of a range of possible options for the future of particle physics.

The approach is not without difficulties, however. Responsibilities are harder to identify, major contributions must be also published elsewhere to ensure recognition, and it's important to avoid the perception that signatory lists equate to competition between projects.

"Signatory lists should only be used when other options are not well suited, as in the case of very long-term, global projects that overlap with others," explains Lucie Linssen, leader of CERN's Linear Collider Detector project. "Signing up should be seen as an inclusive action, and doesn't exclude support for other options as well. It's a vote for developing options for pursuing the high-energy frontier."

James Gillies

The Metaphoros metamorphosis

"Metaphoros" is the name of the winning project submitted by the Ticino architects' office Studio Bürgi in the competition for the design of the sections of the CERN site adjacent to the route de Meyrin. "Metaphoros is derived from the Greek," explains Paolo Bürgi, the landscape architect who heads the project. "It conveys the idea of transport, travel and communication, which are some of CERN's defining characteristics!"

The aim of the Metaphoros project is primarily to convey the creative and dynamic atmosphere of CERN. With this in mind, the core of the design is a large "Place des particules" which will extend from the Globe to the future new Main Building (this

In the last issue of the Bulletin, the Director-General announced the name of the winner of the architectural competition for the design of the sections of the CERN site adjacent to the route de Meyrin. In this issue, we invite you to take a detailed look at the winning project.

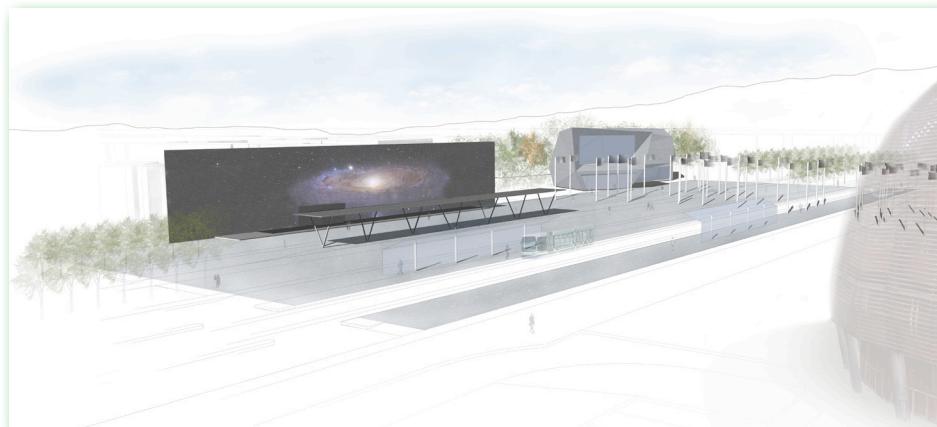
building is scheduled to be the subject of a subsequent architectural competition and, in principle, will be built in the area between the Reception Building and Gate B). The line of flags, which is currently consigned to the car park adjacent to the Reception Building, will link the Globe and the new Main Building. "We wanted to underline the international character of the Organization," adds Paolo Bürgi. "And this is precisely the message that will be conveyed by the Place des particules. There will be a huge screen in front of the Reception Building parallel to the tramline on which images and videos

will be projected illustrating the huge implications of the work that CERN is engaged in."

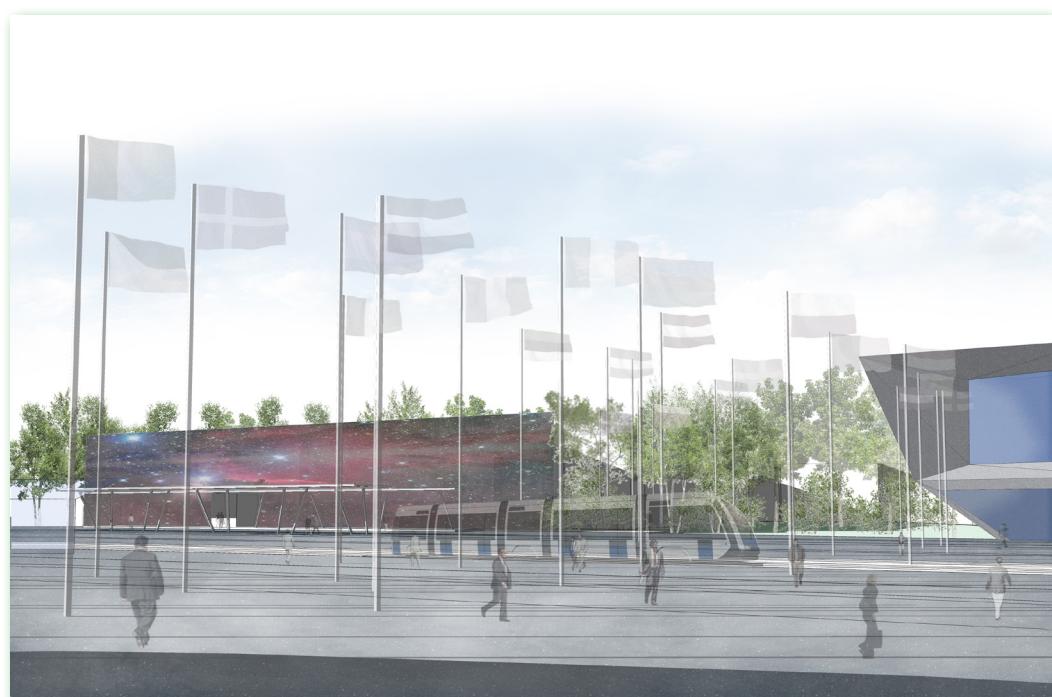
On a larger scale, the Metaphoros project also pays tribute to the LHC: "This huge 27 km facility runs beneath villages, forest and agricultural land," enthuses Paolo Bürgi. "Each intersection between the tunnel and a main road, a street or a track could be marked with a sign. Walkers would then know that the LHC is just under their feet. Then it's for them to imagine what it's like."

The CERN stretch of the route de Meyrin, the main road between Geneva and CERN, will also be getting a facelift. It will be lined with pyramid-shaped trees and a myriad of multicoloured varieties of plants. In a few years' time it should be quite a show.

Anaïs Schaeffer



The route de Meyrin, between the Globe (on the right) and the Reception (behind the giant screen), as designed by Studio Bürgi. (Photo: Studio Bürgi sis - Camorino).



The line of flags will link the Globe and the new Main Building (on the right in the picture). (Photo: Studio Bürgi sis - Camorino).

Growing expertise in Africa: CERN-UNESCO's 3rd Digital Library School

After Rwanda and Morocco, this time it was Senegal's turn to host the Digital Library School, the third of its kind, held from 21 to 25 November 2011. Participants from seven African French-speaking countries met at the Université Cheikh Anta Diop in Dakar to learn about digital libraries and the importance of new technologies in the dissemination of knowledge by libraries. The School outlined the principles of digital information management and showcased the Invenio software, developed by CERN to manage digital libraries and freely available as Open Source software.

The series of Schools, which combine informative lectures with hands-on sessions where librarians and IT experts work

The third in the series of CERN-UNESCO African Schools on Digital Libraries took place in Dakar, Senegal, in November last year. The School represents an important opportunity for CERN to contribute to a global exchange of knowledge, skills and culture.

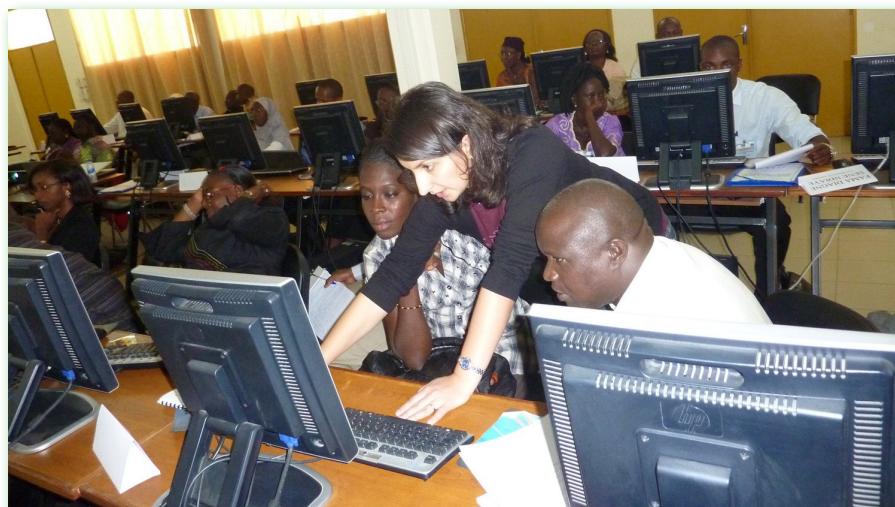
together to install digital library software, is proving to be a success in several ways. Not only are participants putting what they've learnt into practice in their home institutions, but they are able to pass their expertise on to others. Two of the teaching staff in Dakar were graduates from previous Schools, meaning that the project creates an independent capacity for further training without outside intervention from CERN. True to the Chinese proverb "Give a man a fish and he'll live for a day. Teach him how to fish and he'll eat for the rest of his life," real capacity building is taking place. To further enhance participants' ability to disseminate their knowledge, a few selected students

will be invited to come to CERN for several weeks to get more in-depth training.

A further benefit of the Schools is the networking possibilities. "We encourage the participants to build their own international networks so that they become more and more independent of support from CERN," says Ludmila Marian from the Digital Library Services section of the IT Department. She is one of the four people from CERN who organised and taught at the School, led by the head of the CERN Library, Jens Vigen. The participants in the Schools are indeed active members of the Invenio mailing list, on which all users can post and reply to questions. "In fact, African participants have already been able to respond to queries from other members of the Invenio community on the mailing list and make a really positive contribution," says Nikos Kasioumis, also from IT.

This international cooperation, at both an individual and an institutional level, is a good example of how CERN is spreading and sharing the knowledge and innovation it creates. "The Schools are an opportunity for CERN to get into contact with countries where we don't have any cooperation right now," says Annette Holtkamp from the CERN Library, "and then we hope that this cooperation will spread to the physics community." The next Digital Library School will hopefully take place in Ghana, subject to obtaining the necessary funding, at the same time as a major school on fundamental physics, to create precisely this kind of synergy.

Joannah Caborn Wengler



Ludmila Marian assisting participants during a hands-on computer session. More photographs available at <https://cdsweb.cern.ch/record/1420067>.



News from the Library

... Pietro only knows that, for the past few days, someone has been discreetly following him and his family, and that his wife Emilia, a CERN researcher, vanished from home a few days before..."

Would you like to know what happens next? The Library, in cooperation with the association "Cultura Italia", is organizing a

Book Presentation: "*L'Energia del vuoto*" by Bruno Arpaia

"It is nighttime on a Swiss highway. A car travels at high speed, heading to Marseilles. Pietro Leone, UN Geneva civil servant, is at the wheel. His son Nico is asleep next to him. The two are fleeing from something unknown..."

presentation of "*L'energia del vuoto*". A brief introduction to this book will be followed by a debate among the participants.

Bruno Arpaia, journalist, writer and translator, has written 3 novels and 4 political

essays. "*L'energia del vuoto*" is his latest novel, inspired by a visit he paid to CERN.

"*L'energia del vuoto*" by Bruno Arpaia, Guanda, 2011.

Tuesday 7 February at 7pm in the Library, Building 52-1-052.

CERN Library

"I can't wait to find out what Nature has in store for us"

It's been a good start to the year for Guido Altarelli. After receiving two prestigious prizes in the space of a few weeks for achievements during his long career, all he's waiting for is the Higgs boson!

"I can't wait to find out what Nature has in store for us!", he smiles. Hardly surprising when you think that Altarelli has been looking for the answers since the very start of his career in particle physics. As a theorist at CERN for over twenty years, he has always worked closely with the experiments, first at the SPS, then at LEP and now at the LHC. Today, following the significant progress in 2011, he can hardly contain his excitement: "Whatever happens, there's going to be a big shake-up, that's for sure! Certain theories that have taken the back seat up to now will be thrown into the spotlight, while others will be relegated to the history books. It remains to be seen who's bet on the winning horse."

Although Guido is delighted by the constraints placed on the Higgs mass range in 2011, he is impatient for 2012's results to tell us, once and for all, whether or not the Standard Model Higgs exists in the narrow

Professor Guido Altarelli, a physicist at CERN and the University of Rome, has received two prizes since the beginning of the year: the Julius Wess prize awarded by the Karlsruhe Institute of Technology (KIT) and the Sakurai prize awarded by the American Physical Society.

low-energy mass region indicated by the experiments. "On the other hand," he jokes,

"if the experiments end up finding a Higgs with a mass of more than 600 GeV, it will be proof of a conspiracy by new physics to make us think that the Higgs was a light Standard Model Higgs!" A joke that some physicists certainly wouldn't find very amusing...

Anaïs Schaeffer



Guido Altarelli (left), receiving the Julius Wess prize in Karlsruhe on 16 January.

Collide@CERN: sharing inspiration

When we arrive to interview German artist Julius von Bismarck, he's being given a presentation about antiprotons' ability to kill cancer cells. The whiteboard in the room contains graphs and equations that might easily send a non-scientist running, yet as Julius puts it, "if I weren't interested, I'd be asleep". Given his numerous questions, he must have been fascinated.

"This 'introduction' week has been exhilarating," says Julius. "I've been able to interact with scientists in ways I had never considered possible – discussing their research, their experiences, and even their opinions on art. I've spent my entire visit writing

Late last year, Julius von Bismarck was appointed to be CERN's first "artist in residence" after winning the Collide@CERN Digital Arts award. He'll be spending two months at CERN starting this March but, to get a flavour of what's in store, he visited the Organization last week for a crash course in its inspiring activities.

down ideas, so I can only imagine what my actual residency is going to be like!"

Julius will use his two-month residency at CERN to create a work inspired by science. While not the first artist to seek inspiration from CERN's scientific activities, he is taking a rather challenging and intriguing approach to his project: "I want to create something that is more than just an art work illustrating science, something that might inspire CERN scientists as much as I've been inspired by them." Stay tuned.



Julius von Bismarck, taking a closer look...

Katarina Anthony

CERN exhibition wins yet another design prize

Not only do tens of thousands of people visit the "Universe of Particles" exhibition each year, but juries for design prizes are crossing its threshold more and more frequently too. In 2011 alone it claimed 8 awards, including winning outright the 2011 Annual Multimedia award, the iF Communication Design for Corporate Architecture award and the Modern Decoration Media award (the Bulletin already reported on some of these in July 2011). The FAMAB award is the latest to join the prestigious list.

The jury of FAMAB's "ADAM 2011" award was particularly impressed by the hands-on nature of the exhibition, which encourages visitors to get interested in science. They also appreciated the way that the space in the Globe is not just a container for the

The "Universe of Particles" exhibition in CERN's Globe wins the silver design prize from the German direct business communications association FAMAB.

CERN exhibition, commented proudly on their prize: "This is an important award in German design circles. We had a lot of fun!"

Joannah Caborn Wengler

exhibits, but itself becomes a major part of the exhibition during the main show.

The other prizewinners demonstrate the high overall level of the competition. The gold-prize winner was the "Audi Qube3" in Barcelona, Spain, a stunning die-shaped building entirely covered in mirrored tiles. Deutsche Bank's headquarters in Frankfurt, Germany, won the bronze prize, using ingenious ways of integrating the bank's logo into the interior architecture.

The prizes were distributed at a lavish ceremony held on 24 November 2011 in Mannheim, Germany, attended by 1,500 guests. Atelier Brückner, designers of the



How neutrons and neutrinos translate into crotches and quavers

There seems to be a natural affinity between music and science. How else can it be that CERN has inspired so many different musicians to be creative? From amateurs composing in their bedrooms to professional musicians, from rock stars like Incubus to classical composers like Philip Glass, CERN's huge-scale science and technology researching the tiniest of particles have again and again stirred artists into creative action.

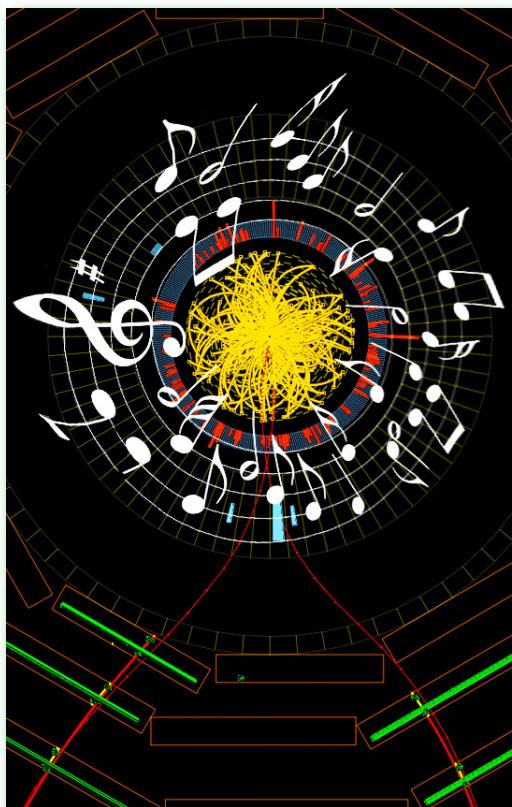
Electromusician Bernd Kistenmacher from Berlin, Germany is no exception. In his case, his interest in CERN goes back to a wider philosophical question: "Where do we come from?" Having composed two albums looking at the origins of the Universe in astronomy and in the depths of the sea, for him it was a natural progression to turn to particle physics with the release of his latest album entitled "Antimatter," which has a foreword by CERN's Rolf Landua. "The stretch from looking at the planets, the largest things in the sky, to considering elementary particles

What unites The Strokes, Gilbert and Sullivan, Brian Eno and Alpine Kat? All of them have in some way been musically connected with CERN. German composer of electronic music, Bernd Kistenmacher, is the latest in the long list of musicians to have been inspired by CERN.

which are the smallest thing we can conceive of, is like a journey through the Universe itself," he says.

The son of an engineer, Kistenmacher is also fascinated by the technology developed and used by CERN. "Who couldn't be?" he says, adding: "Every technical process has its own form of beauty. This type of beauty can't be invented, it just exists, and this is what I try to recreate in my music."

If you would like an mp3 file of Kistenmacher's "Antimatter" CD and you have a CERN e-mail address, you can write to Antimatter@mellowjet.de and ask for the free download available exclusively to CERN employees and users.



Joannah Caborn Wengler



Computer Security
Sécurité informatique

Is your Android running a temperature?

Some apps available from your favorite app store are malicious and try to steal your private data once installed or auto-dial expensive premium phone numbers.

Unfortunately, the open model for Android apps employs neither quality control nor an approval process. Several Android apps, e.g. wallpaper apps and sound clips, have already been identified as being malicious. Symantec recently reported at least 13 different malicious apps which are suspected to span up a Botnet of thousands of mobile phone. If you run apps from "iApps7 Inc." (e.g. "Counter Elite Force" or "Heart Live Wallpaper"), from

You might have heard about Botnets, i.e. networks of infected (Windows) computers which are unwittingly under control by a malicious party. Public examples of botnets-in-action are attacks against the FBI, the U.S. Department of Justice, or against Universal and Warner Music as a retaliation for the shutdown of Megaupload.com. But have you ever heard of a Botnet made of Android phones?

"Ogre Games" (e.g. "Balloon Game", "Deal & Be Millionaire", or "Wild Man"), or from "redmicapps", then beware as your phone might have been compromised.

For further details and mitigations, please check the corresponding advice from Symantec. iPhones, iPads etc. are less affected since Apple tightly controls their app store. But the risk remains high for those who have jailbroken their iOS

devices. Generally, be aware that mobile phones must be protected like normal computers: keep your system up-to-date, enable the regular automatic installation of updates/patches, and do not install untrusted software from untrusted sources. Check out our guidelines for protecting your PC here. There is lots which can be directly applied to your mobile phone, too.

For further information, please check our recommendations (https://security.web.cern.ch/security/recommendations/en/how_to_secure_your_pc.shtml) or contact us at Computer.Security@cern.ch.

Computer Security Team

Model UN comes to CERN

The members of the MUN/MFNU association at the Lycée international in Ferney-Voltaire spent several months preparing for their first "Model United Nations" (MUN), a simulation of a UN session at which young "diplomats" take on the role of delegates representing different nations to discuss a given topic. And as their chosen topic was science, it was only natural that they should hold the event at CERN.

For three days, from 20 to 22 January, no fewer than 340 pupils from 12 international schools* in Switzerland, France and Turkey came together to deliberate, consult and debate on the importance of scientific

From 20 to 22 January pupils from international schools in Switzerland, France and Turkey came to CERN for three days of "UN-type" conferences.

progress for society. 120 delegates and 14 moderators took part in General Assemblies held in CERN's Main Auditorium, at which they tackled specialist topics ranging from nuclear energy to the funding of scientific institutions and the brain drain and adopted a series of resolutions.

"There can be no better illustration of CERN's education and science-dissemination missions than the discussion of science and its future by the future citizens of Europe," says Sascha Schmelting of the Physics Department, who was in charge



The MUN organisers, who are all pupils at the Lycée international in Ferney-Voltaire, worked tirelessly for weeks to make the event a real success.

of the project on CERN's side. "The pupils from the Lycée international School in Ferney-Voltaire, which was founded in the 1970s with support from CERN, have taken up these missions in an enthusiastic and exemplary way."

"It means a lot for us to come to CERN for this Model United Nations," says Céline, one of the pupils from the Ferney school, who acted as a UN press officer for the event. "CERN is a very international organisation that holds a special place for us since many of us have parents or other family members who work here or worked here in the past."

Éric, another pupil from the Ferney school, who took on the role of Japanese delegate, enthused about the success of the project: "The Model UNs are great from the human perspective. You get to meet lots of people from other schools, but you're also required to engage in critical enquiry as you're representing a country and its interests."

Although this was not the first MUN for some of the young "diplomats" taking part, it may well have been one of the most successful they've attended: "The first few sessions are not usually quite as lively as they were here," says Céline. "But we soon felt very much at home at CERN!" The youngsters took the exercise very seriously, getting into the skin of UN delegates right down to their smart suits and footwear. But the corridors of the real Palais des Nations are still a long way off and we hope that they won't leave their adolescence behind too quickly.

Anaïs Schaeffer

* The International Schools of Ferney-Voltaire, Geneva, Grasse, Grenoble, Istanbul, Lyon, Montpellier, Nantes, Paris and Saint-Etienne took part in the MUN at CERN.

A place in the sun for EXPLORER

After 20 years of continuous operation, the gravitational-wave detector Explorer has reached the end of its long career at CERN. On 23 January it set off for a new life at the European Gravitational Observatory (EGO) in Cascina, near Pisa.

See the video at:

<https://cdsweb.cern.ch/record/1419184>

Find more information about EXPLORER in the March issue of the CERN Courier.

Evacuation drill at CMS

Evacuation drills are required by law and have to be organized periodically in all areas of CERN, both above and below ground. The last drill at CMS, which took place in June 2007, revealed some desiderata, most notably the need for a public address system. With

Training personnel, including evacuation guides and shifters, checking procedures, improving collaboration with the CERN Fire Brigade: the first real-life evacuation drill at CMS took place on Friday 3 February from 12p.m. to 3p.m. in the two caverns located at Point 5 of the LHC.

this equipment in place, it is now possible to broadcast audio messages from the CMS control room to the underground areas..

The CMS Technical Coordination Team and the GLIMOS have focused particularly on preparing collaborators for emergency situations by providing training and organizing regular safety drills with the HSE Unit and the CERN Fire Brigade. This Friday, the practical training course involved more than 100 people from different personnel categories and from nearly all CERN departments (PH, EN, GS, TE, BE, DG, Unite HSE, etc).

The next drill will be based on a realistic scenario involving a major accident and will require rescue teams from inside and outside CERN. The CMS collaboration and the various safety teams at CERN are looking forward to meeting this challenge!



CERN personnel during the evacuation drill at CMS.

*Niels Dupont-Sagorin and Christoph Schaefer,
Deputy GLIMOS and GLIMOS at CMS*

More information about safety at CMS is available at:

cms-safety.web.cern.ch



Milla Baldo Ceolin 1924-2011

At the end of November the particle physics community lost one of its most inquisitive, enthusiastic and active members when Milla Baldo Ceolin, emeritus professor at the University of Padua, passed away after several months of disabling illness.

After graduating from Padua in 1952, Milla began her scientific career in research with balloon-borne nuclear emulsions exposed to cosmic rays in the high atmosphere. Using a pion beam from the Bevatron at Berkeley, in 1958 Milla and D J Prowse discovered the first antihyperon: the anti-lambda. At the beginning of the 1960s she decided to change detection technique and began experiments with bubble chambers at Argonne, CERN and the Institute for Theoretical and Experimental Physics (ITEP) in Moscow to investigate selection rules and conservation laws in the kaon system with higher statistics. In the meantime, her group in Padua grew steadily, working in international collaborations.

The main field of her investigations changed to neutrino physics after the discovery of neutral currents in 1973. At CERN, she took part in the NUE experiment that measured, for the first time, both neutrino and anti-neutrino elastic-scattering cross-sections of electrons and provided a value for the



Weinberg angle. Using bubble chambers with liquid deuterium, Milla and colleagues performed in a large collaboration (Italy, France, Norway and Netherlands) systematic investigations at CERN's Super Proton Synchrotron on neutrino neutral and charged currents on (quasi) free protons and neutrons. Finally, she led the Italian contingent of the NOMAD collaboration whose detector studied the oscillations in the 1990s.

After becoming a full professor in 1964, Milla was appointed director of the Padua Section of INFN a few years later and then became director of the Department of Physics. She was a member of several academies and was awarded the Feltrinelli Prize by the Accademia dei Lincei, as well as the Gold Medal for Education and Arts, the Gold Medal for Science and the Enrico Fermi Prize of the Italian Physical Society.

In 1988 she started the world-renowned series of Workshops on Neutrino Telescopes at the Istituto Veneto di Scienze, Lettere ed Arti in Venice. These gathered hundreds of scientists to discuss neutrino properties, astrophysics and cosmology; her quest for perfection was manifest both in the scientific programmes and in the cultural and social events.

Milla's students and colleagues were always stimulated by her non-conventional approach to scientific, academic and cultural issues. We are grateful to her and will miss her.

Her friends and colleagues in Padua



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.

CERN HEALTH INSURANCE SCHEME (CHIS) CONTRIBUTIONS – CHANGES FOR 2012

Following the 2010 five-yearly review of financial and social conditions, which included the CERN Health Insurance Scheme (CHIS), the CERN Council decided in December 2010 to progressively increase the level of contributions over the period 2011-2015.

For 2012, the contribution rate of active and retired CHIS members will be 4.41%. The amounts of the fixed premiums for voluntarily insured members (e.g. users and associates) as well as the supplementary contributions for spouses with income from a professional activity increase accordingly:

1. Voluntary contributions

The full contribution based on Reference Salary II is now 1094 CHF per month. This fixed amount contribution is applied to voluntarily affiliated users and associates with normal coverage. Half of this amount (547 CHF) is applied to apprentices as well as to voluntarily affiliated users and associates with reduced coverage. Finally, an amount of 438 CHF is applied to children maintaining their insurance cover on a voluntary and temporarily basis.

More information on the web at:

hr-services.web.cern.ch/hr-services/Ben/chis/contrib.asp

2. Supplementary contributions

The supplementary contribution for the spouse or registered partner of a staff member, fellow or pensioner is now as follows, depending on the spouse's monthly income:

- up to 2'500 CHF (inclusive): none
- more than 2'500 CHF and up to 4'250 CHF: 147 CHF
- more than 4'250 CHF and up to 7'500 CHF: 257 CHF
- more than 7'500 CHF and up to 10'000 CHF: 404 CHF
- more than 10'000 CHF: 541 CHF

More information on the web at:

cern.ch/chis/contribsupp.asp

More information : Human Resources Department (tel. 74719).

HR Department

"LES GRANGETTES" NO LONGER APPROVED HOSPITAL AS OF 1.1.2012

The negotiations for a new tariff agreement with "Les Grangettes", conducted jointly by CERN and partner international organizations, did not reach a positive conclusion. As a result, "Les Grangettes" ceased being an approved hospital on 31 December 2011.

This means that for hospitalizations in "Les Grangettes" as of 1 January 2012 the conditions applicable to unapproved hospitals will apply. In particular:

1. no third-party payment (i.e. you will be charged directly);
2. reimbursement at a fixed 80% rate, whatever the expenses incurred; and
3. expenses incurred will not contribute towards increasing FCA.

CHIS members looking for an alternative are invited to consider "Clinique Générale Beaulieu" (located in the same area of Geneva and with which the existing agreement has been extended for 2012 and 2013) or another approved hospital (see the list on the CHIS web site).

Note that, as a transitory measure, hospitalizations which were arranged prior to the publication of this information will be handled as if "Les Grangettes" were still an approved hospital.

More information : Human Resources Department (tel. 74719).

HR Department



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PROCEDURE FOR OBTAINING VISAS FOR SWITZERLAND AND FRANCE SIGNATURE RIGHTS

In accordance with the Status Agreements with CERN, Switzerland and France facilitate the entry of members of the Organization's personnel on to their territories. Where relevant, detailed procedures for obtaining visas apply.

Within the framework of those procedures, only the following individuals are authorised to initiate the note verbale procedure as well as to sign the Official Invitation Letters and the *Conventions d'accueil*.

1. Kirsti ASPOLA (PH – CMO)
2. Oliver BRÜNING (BE – ABP)
3. Michelle CONNOR (PH – AGS)
4. Patrick FASSNACHT (PH-ADO)
5. David FOSTER (IT – DI)
6. Nathalie GRÜB (PH – AGS)
7. Tjitske KEHRER (DG-DI)
8. Tadeusz KURTYKA (DG – PRJ)
9. Markus NORDBERG (PH – ADO)
10. Cécile NOELS (DG – PRJ)

11. Maria QUINTAS (HR – SPS)
12. Kate RICHARDSON (PH-AGS)
13. Jeanne ROSTANT (PH – AGS)
14. José SALICIO-DIEZ (PH – AGS)
15. Ulla TIHINEN (PH – AGS)
16. Emmanuel TSESMELOS (DG)
17. Rüdiger VOSS (PH – ADE)

The French and Swiss Authorities will reject any request signed by a person who is not on this list.

We would like to remind you that in accordance with the memorandum of 7 December 2000 issued by the Director of the Administration, (ref. DG/DA/00-119), "the Organization shall not request any legitimisation document (or residence permit) or visa from the Host States for persons registered as EXTERNAL" (people who do not hold a contract of employment, association or apprenticeship with CERN).

We would also like to remind you that those coming to CERN should find out in good time about the conditions of entry to

Switzerland and France applying to them and ensure that they obtain the requisite visas, where applicable, in the country in which they are habitually resident.

Useful information can be obtained from the Swiss and French diplomatic representations abroad, as well as from the following Web pages :

- http://www.bfm.admin.ch/content/bfm/en/home/dokumentation/rechtsgrundlagen/weisungen_und_kreisschreiben/visa/liste1_statsangehoerigkeit.html (Swiss Federal Office for Immigration);
- http://www.diplomatie.gouv.fr/en/france_159/coming-to-france_2045/getting-visa_2046/general-information-for-foreign-nationals-with-ordinary-passeports_1559.html (French Ministry of Foreign and European Affairs).

The Authorities of the Host States have informed the Organization on a number of occasions that they insist upon scrupulous compliance with visa legislation.

Relations with the Host States Service
<http://www.cern.ch/relations/>
relations.secretariat@cern.ch



Take note

CERN OPENLAB SUMMER STUDENT PROGRAMME



CERN openlab is currently taking applications for its summer student programme. The closing date for applications is 30 March 2012.

The openlab Summer Student Programme is open for applications from bachelor, master and PhD students in computer science and physics. Successful applicants will spend 8 weeks at CERN, during the period June to September 2012, to work with some of the latest hardware and software technologies.

The programme is more than just a summer at CERN: it can lead to follow-on projects at the home institute and may even inspire the students to become entrepreneurs in cutting-edge computing technologies. A series of lectures will be given by experts in various domains of CERN related high-throughput computing. Study tours to external companies and universities as well as to CERN facilities are also part of the programme.

Please visit:

www.cern.ch/openlab-students

for more information.

Language training

ENGLISH COURSE

Oral Expression:

The next sessions will take place from 27th of February to 22nd of June 2012.

This course is intended for people with a good knowledge of English who want to enhance their speaking skills.

There will be on average of 8 participants in a class.

Speaking activities will include discussions, meeting simulations, role-plays etc. depending on the needs of the students.



SAFETY TRAINING: PLACES AVAILABLE IN FEBRUARY

There are places available in the forthcoming Safety courses. For updates and registrations, please refer to the Safety Training Catalogue.

If you are interested in attending any of the below courses, please talk to your supervisor, then apply electronically via EDH from

the course description pages, by clicking on SIGN-UP.

Registration for all courses is always open – sessions for the less-requested courses are organized on a demand-basis only. Depending on the demand, a session will be organised later in the year.

FEBRUARY 2012

Alphabetical order (original course titles are maintained)

Conduite de Plates-Formes Elevatrices Mobiles de Personnel (PEMP) / Cherry-picker driving :

09-FEB-12 au 10-FEB-12, 08.00 – 17.30, in French (with possibility to have handouts in English)

Magnetic Fields :

03-FEB-12, 9.30 – 12.00, in French

Self-rescue mask :

02-FEB-12, 8.30 – 10.00, in French

02-FEB-12, 10.30 – 12.00, in English

07-FEB-12, 8.30 – 10.00, in French

07-FEB-12, 10.30 – 12.00, in English

14-FEB-12, 8.30 – 10.00, in French

14-FEB-12, 10.30 – 12.00, in English

16-FEB-12, 8.30 – 10.00, in French

16-FEB-12, 10.30 – 12.00, in English

21-FEB-12, 8.30 – 10.00, in French

21-FEB-12, 10.30 – 12.00, in English

28-FEB-12, 8.30 – 10.00, in French

28-FEB-12, 10.30 – 12.00, in English

Radiological Protection :

03-FEB-12, 13.30 – 17.30, in English

07-FEB-12, 08.30 – 12.30, in English

07-FEB-12, 13.30 – 17.30, in French

10-FEB-12, 13.30 – 17.30, in English

24-FEB-12, 08.30 – 12.30, in English

24-FEB-12, 13.30 – 17.30, in French

28-FEB-12, 13.30 – 17.30, in English

Risques liés aux interventions en espace confiné / Confined spaces:

10-FEB-12, 09.00 – 17.30, in French

Isabelle Cusato (HSE Unit)

a good level of spoken English who wish to improve their writing skills.

There will be an average of 8 participants in a class.

For registration and further information on the courses, please consult our Web pages or contact Kerstin Fuhrmeister, tel. 70896.

For registration and further information on these courses, please consult our Web pages: <http://cern.ch/Training> or contact Kerstin Fuhrmeister: Tel. 70896.



CERN TECHNICAL TRAINING: AVAILABLE PLACES IN FORTHCOMING COURSES

The following course sessions are scheduled in the framework of the 2012 CERN Technical Training Programme and places are still available. You can find the full updated Technical Training course programme in our web catalogue (<http://cta.cern.ch/cta2/f?p=110:9>).

Software and system technologies

Object-Oriented Analysis and Design using UML	07/02/2012	09/02/2012	English
CERN openlab/Intel Computer Architecture and Performance Tuning Workshop	15/02/2012	16/02/2012	English
Python - Hands-on Introduction	20/02/2012	23/02/2012	English
ITIL Foundations (version 3)	22/02/2012	24/02/2012	English
Drupal Site Building	05/03/2012	06/03/2012	English
Joint PVSS-JCOP Framework	05/03/2012	09/03/2012	English
Oracle Database SQL Tuning	07/03/2012	09/03/2012	English
Oracle - SQL	12/03/2012	14/03/2012	English
ITIL Foundations (version 3) EXAMINATION	19/03/2012	19/03/2012	English
Object-oriented Design Patterns	19/03/2012	21/03/2012	English
Python: Advanced Hands-On	26/03/2012	29/03/2012	English

Mechanical design

ANSYS Workbench	06/02/2012	09/02/2012	English
Travailler en salle propre	27/02/2012	27/02/2012	French
ANSYS - Introduction to Classical ANSYS	28/02/2012	02/03/2012	French
ANSYS Workbench advanced	05/03/2012	08/03/2012	English
SmarTeam - Refresher	20/03/2012	20/03/2012	French
SmarTeam - CATIA data manager at CERN	21/03/2012	23/03/2012	French
Catia-Smartteam Basics	26/03/2012	20/04/2012	French

Office software

Dreamweaver CS3 - Niveau 1	15/03/2012	16/03/2012	French
ECDL: European Computing Driving Licence Certification	10/02/2012	10/02/2012	Bilingual
ECDL: European Computing Driving Licence Certification	30/03/2012	30/03/2012	Bilingual
Egroups training	16/03/2012	16/03/2012	English
EXCEL 2007 - level 1 : ECDL	26/03/2012	27/03/2012	English
EXCEL 2007 - Level 2: ECDL	27/02/2012	28/02/2012	French
Expression Web - Level 1 (former Sharepoint Designer or Frontpage)	02/02/2012	03/02/2012	English
Expression Web - Level 2 (former Sharepoint Designer or Frontpage)	05/03/2012	06/03/2012	English
Indico Advanced - Conference Organization	09/02/2012	09/02/2012	English
Indico for beginners - Meeting Organization	09/02/2012	09/02/2012	English
Novelties Sharepoint Collaboration Workspace 2010	12/03/2012	12/03/2012	French
PowerPoint 2007 - Level 1: ECDL	06/02/2012	07/02/2012	English
PowerPoint 2007 - Level 1: ECDL	29/03/2012	30/03/2012	French
Project Planning with MS-Project	26/03/2012	30/03/2012	English
Sharepoint Collaboration Workspace - Level 1	09/02/2012	10/02/2012	English
Sharepoint Collaboration Workspace - Level 1	01/03/2012	02/03/2012	French
Sharepoint Collaboration Workspace - Level 2	19/03/2012	20/03/2012	French

Office software

WORD 2007 - level 1 : ECDL	08/03/2012	09/03/2012	French
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If you are interested in attending any of the above course sessions, please talk to your supervisor and/or your DTO, and apply electronically via EDH from the course description pages that can be found at: <http://cta.cern.ch/cta2/f?p=110:9> under 'Technical Training' with the detailed course program. Registration for all courses is always open – sessions for the less-requested courses are organized on a demand-basis only. CERN Technical Training courses are open only to members of the CERN personnel (staff members and fellows, associates, students, users, project associates, apprentices and employees of CERN contractors, with some restrictions). In particular, quoted prices and programmes refer specifically to the CERN community.





Seminars

MONDAY 6 FEBRUARY

CONFERENCES & WORKSHOPS

8:00 -Main Auditorium, Bldg. 500

CERN Winter School on Supergravity, Strings, and Gauge Theory 2012

ISOLDE SEMINAR

14:00 - Bldg. 26-1-022

The excitation and decay of nuclear isomers (1/3)

P. WALKER / UNIVERSITY OF SURREY

COMPUTING SEMINAR

14:00 - IT AUDITORIUM, BLDG. 31

Many-core technologies: The move to energy-efficient, high-throughput x86 computing (TFLOPS on a chip)

H. CORNELIUS / INTEL CORP.

TUESDAY 7 FEBRUARY

CONFERENCES & WORKSHOPS

9:30 -Main Auditorium, Bldg. 500

CERN Winter School on Supergravity, Strings, and Gauge Theory 2012

LHC SEMINAR

11:00 - Council Chamber, Bldg. 503

Observation of double charm production at LHCb

V. BELYAEV / ITEP INSTITUTE FOR THEORETICAL AND EXPERIMENTAL PHYSICS (RU)

ISOLDE SEMINAR

14:00 - Bldg. 26-1-022

The excitation and decay of nuclear isomers (2/3)

P. WALKER / UNIVERSITY OF SURREY

WEDNESDAY 8 FEBRUARY

CONFERENCES & WORKSHOPS

9:00 -Main Auditorium, Bldg. 500

CERN Winter School on Supergravity, Strings, and Gauge Theory 2012

TH THEORETICAL SEMINAR

14:00 -TH Auditorium, Bldg. 4

TBA

GRACIELA GELMINI / UCLA

WEDNESDAY 8 FEBRUARY

ISOLDE SEMINAR

14:00 - Bldg. 26-1-022

The excitation and decay of nuclear isomers (3/3)

P. WALKER / UNIVERSITY OF SURREY

THURSDAY 9 FEBRUARY

CONFERENCES & WORKSHOPS

9:30 -Main Auditorium, Bldg. 500

CERN Winter School on Supergravity, Strings, and Gauge Theory 2012

TH BSM FORUM

14:00 -TH Auditorium, Bldg. 4

Direct CP violation in charm and flavor mixing beyond the SM

P. PARADISO / CERN

FRIDAY 10 FEBRUARY

POST-INDUCTION DAY TRAINING

09:00

Post Induction day training on popular IT and GS services

ENGLISH SESSION ROOM 25

FRENCH SESSION ROOM 23

CONFERENCE & WORKSHOPS

9:30 -Main Auditorium, Bldg. 500

CERN Winter School on Supergravity, Strings, and Gauge Theory 2012

DETECTOR SEMINAR

11:00 - Bldg. 40 S2-A01 Salle Bohr

CMS Pixel upgrade

K. AARON GILL / CERN

PARTICLE AND ASTRO-PARTICLE PHYSICS SEMINARS

14:00 - TH Auditorium, Bldg. 4

Higgs-Radion mixing in the Randall Sundrum model and the LHC Higgs-like excesses

J. GUNION / UC DAVIS

TUESDAY 14 FEBRUARY

LHC SEMINAR

11:00 - Council Chamber, Bldg. 503

Search for supersymmetry in events involving third generation squarks and sleptons with ATLAS

X. POVEDA TORRES / UNIVERSITY OF WISCONSIN (US)

TH STRING THEORY SEMINAR

14:00 -TH Auditorium, Bldg. 4

TBA - R. VALANDRO / DESY, HAMBURG

WEDNESDAY 15 FEBRUARY

TH COSMO COFFEE

11:00 - TH Auditorium, Bldg. 4

Sub-GeV dark matter as pseudo-Goldstone from the seesaw scale

E. MASSO / IFAE, U. BARCELONA

TH THEORETICAL SEMINAR

14:00 - TH Auditorium, Bldg. 4

Cosmic Rays: Status of the Problem

D. SEMIKOZ / APC, PARIS

THURSDAY 16 FEBRUARY

TH BSM FORUM

14:00 - TH Auditorium, Bldg. 4

The 4D Composite Higgs

M. REDI / CERN

ACCELERATOR AND TECHNICAL SECTOR

SEMINAR

14:15 - Kjell Johnsen Auditorium (bldg. 30)

Status of UA9, the crystal collimation experiment at CERN

W. SCANDALE / EN/STI AND UNIVERSITÉ PARIS-SUD, G. CAVOTO (INFN-ROMA1) FOR THE UA9 COLLABORATION

FRIDAY 17 FEBRUARY

DETECTOR SEMINAR

11:00 - Bldg. 40 S2-A01 Salle Anderson

A novel Photodetector based on Silicon and Carbon Nanotubes

M. AMBROSIO / INFN NAPOLI

PARTICLE AND ASTRO-PARTICLE PHYSICS SEMINARS

14:00 -TH Auditorium, Bldg. 4

TBA - ZVI BERN / UCLA AND CERN