

Nos 27 & 28 – 7 & 14 July 2010

Safely yours



Safety is a broad term that incorporates many concepts and related issues. In the vision of the HSE Unit, safety is built on two pillars: occupational health

& safety and environmental protection, both comprising conventional and radiological aspects. "Ensuring safety in these two areas is a matter of highest importance for the Organization", says Ralf Trant, head of the HSE Unit. "Our vision focuses on improving our efficiency in serving the Organization in all matters of safety. For example, by enhancing the collaboration with the Departmental Safety Officers".

"Safety at CERN builds on international norms and standards, best practices and above all on continuous improvement", explains Enrico Cennini, Deputy Head of the Unit and the person responsible for relations with the Host State bodies in matters of safety. "Safety is a continuously evolving

and improving area and an integral part of all work and activities".

The definition and implementation of safety objectives for a research laboratory like CERN are not always easy and straightforward. "We assist in the definition and achievement of safety objectives. Our focus is providing advice and expert support on risk assessment, reduction and control, always in combination with suggestions for improvements", says Ralf Trant.

"The role of the HSE Unit is evolving to provide more pro-active support in matters of safety to the Departments, which bear the responsibility for safety at CERN", adds Enrico Cennini. "We will also continue to

(Continued on page 2)



A word from the DG

Three ingredients for a healthy future

In my messages, I usually focus on one subject at a time. This week, however, there are three points I wish to draw to your attention: safety, the Laboratory's urban plan and the opening up of CERN to potential new Member States. The first two are featured in this issue of the Bulletin, while the opening of CERN will be covered in a future issue. So on that subject, all I wish to say for now is that I believe it's a very important step not only for CERN, but also for particle physics

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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)

Three ingredients for a healthy future

in general. Over recent meetings, resolutions adopted by the Council offer countries all over the world the opportunity to participate in our programmes in a fair and equitable way, while at the same time ensuring that CERN is ready to play its part in a future large project wherever in the world it may be.

Let me now move on to safety. Always at the top of this Laboratory's agenda, we have decided to reinforce CERN's safety culture by putting the emphasis on occupational health & safety, and environmental protection (HSE). The HSE Unit reports directly to me, and responds to a need to provide active support to the Departments, which will continue to be responsible for safety at the Departmental level. I encourage you to explore the HSE Unit's website, and to give this Unit your full support.

At a first glance, a casual observer might be forgiven for thinking that urban planning is not top of CERN's agenda. In reality, the Laboratory's infrastructures have grown organically over the years to reflect contemporary needs. In the past, this has suited us well, but today it's clear that some parts of our sites are overpopulated while others are empty, and we are not using our sites in an optimum way. We've therefore taken the opportunity to include a look at CERN's land use in the context of the ongoing project that brings together the Cantons of Geneva and Vaud with the Departments of Ain and Haute-Savoie to plan the future of the Franco-Valdo-Genevois agglomeration. CERN's urban plan fits well into this overall picture and covers all aspects of our buildings, mobility and landscapes. It is due to be ready for implementation by 2013.

Safety, urban planning and opening our doors to potential new members are three very diverse subjects that may not seem to have much in common. Taken together, however, they add up to a healthy future for CERN.

Rolf Heuer

Safely yours

(Continued from page 1)

fulfill our role of monitoring that safety is correctly implemented, but it is important to first supply everyone with the necessary information and tools by raising awareness and reinforcing competence in safety matters". For the HSE Unit this implies an increased effort in supplying information, training and supporting documentation that people will be able to refer to before starting a new project or item of work.

One of the missions of the Safety Commission was to prepare, on behalf of the Director-General, the so-called "Safety Clearance" of special equipment, installations, experiments and projects with major safety implications. "This is a sort of authorization, an official 'green light' ensuring that all safety requirements are met. We will continue to provide this service with a view to strongly emphasising the aspects of early pro-active support and monitoring, which precede the final clearance and facilitate

it", points out Enrico Cennini. "Our goal is to help and support people from the very early phases of, for example, a new project, rather than discovering at the end of the process that the set-up was not exactly in compliance with rules or best practices".

The HSE Unit is there to help you identify potential issues before they become safety problems. If you have any doubts or if you observe areas that could be improved in terms of safety, do not hesitate to contact your supervisor, your Departmental Safety Officer or the HSE Unit.

<http://cern.ch/hse-unit>
hse.secretariat@cern.ch

The Bulletin will follow the activities of the HSE Unit with dedicated articles on the various services.

CERN Bulletin

A new record peak luminosity

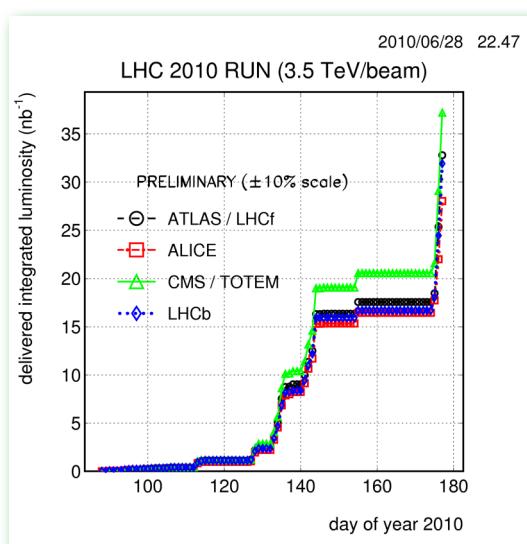
Two weeks of dedicated machine development paid off last weekend when the LHC ran for physics with three nominal intensity ($\sim 10^{11}$ protons) bunches in each beam. This brought a new record peak luminosity of around $8 \times 10^{29} \text{ cm}^{-2} \text{ s}^{-1}$, and allowed the LHC to double the integrated luminosity delivered to the experiments since 30 March from 16 to 32 inverse nanobarns over the weekend.

After a few more fills in this configuration, the number of bunches will be raised to six per beam, which will in turn allow the peak luminosity to break the $10^{30} \text{ cm}^{-2} \text{ s}^{-1}$ barrier

for the first time, well on the way to achieving the 2010 objective of $10^{32} \text{ cm}^{-2} \text{ s}^{-1}$. This peak luminosity goal requires 800 nominal bunches per beam squeezed to a beta of 3.5 metres. The plan for 2011 is to run the LHC in this configuration over about 10 months, thus achieving the objective of recording one inverse femtobarn of data in total.

The machine development period also allowed the TOTEM detectors to be set up with 450 GeV beams, an important step on the way to the experiment beginning its run.

CERN Bulletin



The EN Department has a new leader

The CERN Engineering (EN) Department's main areas of activity are technical coordination, the design

and operation with beam of accelerator components and experimental facilities, the associated infrastructure systems, such as electrical distribution, cooling, ventilation and transport, and finally the design and construction of mechanical elements for the facilities. "I do not plan to change the internal structure of the Department because it works well but, with the LHC

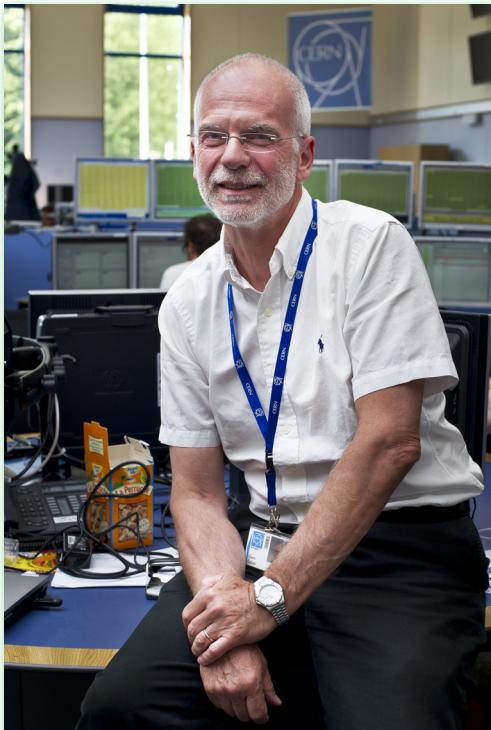
Roberto Saban takes over as new Engineering Department leader on 1 July 2010, at a time when the LHC is entering a stable operation phase. Roberto Saban presents his plans and vision.

entering a phase of stable functioning, the Department will shift its focus to operation and maintenance. In this new situation, our role is not limited to supporting LHC operation but, on the contrary, we fully take part in it thanks to the synergy with the BE and TE Departments inside the Accelerator and Technology Sector", explains Roberto Saban, the newly appointed EN Department leader. The only change in this management transition is the move of the Design of Electronic Modules section to the Technology (TE) Department.

In Saban's vision, being part of LHC operations means ensuring the robustness of the technical infrastructures needed to operate the CERN accelerator complex and the associated experiments. "The infrastructure systems must become so reliable that they become invisible! Our goal is to make sure they never negatively impact on the performance of the facilities", he says.

Saban holds a weekly meeting of the Technical Infrastructure Operation Committee, which monitors the performance of all the systems supporting the LHC: cryogenics, safety systems, electricity distribution, cooling, ventilation, vacuum, power converters, computer communication networks, access control, transport, controls, etc. "This exercise aims at identifying the actions and consolidation programmes needed to minimize the disruption caused by these systems", he explains.

The Department is participating in a number of projects like the design and construction



Roberto Saban, new leader of the EN Department.

of the new LHC collimators, the construction of the LINAC 4 and the consolidation work for the LHC planned for 2012. "The consolidation programme will also concern the power distribution network (renovation of substations, cables, UPS devices, etc.), as well as the cooling and ventilation systems (controls, spare components, maintenance planning, etc.)".

The EN Department can count on the contribution of hundreds of very motivated and skilled people. The Department is ready to tackle the very ambitious and challenging plans ahead.

CERN Bulletin

Roberto Saban's CV

Having graduated with a degree in informatics from Pisa University in Italy, Roberto Saban went on to earn a Master's degree at Edinburgh University (UK). He arrived as a fellow at CERN in 1976 to work on the controls for the experimental areas at the SPS. During the LEP era he worked on the software for the beam instrumentation and then, with the creation of the Accelerator Technologies (AT) Department in 1990, he participated in the setting-up of the new Industrial Controls group. In the following years he became responsible for the controls and data acquisition of LHC String 1 and then coordinated the construction and operation of LHC String 2, where the final technical systems (cryogenics, vacuum, quench protection, power converters, etc.) of the LHC were validated. He was one of the pioneer users of the LHC Documentation project (EDMS). From 2003 until 2008, he was head of the team in charge of the commissioning of the LHC. In 2009 he was appointed deputy EN Department leader and head of the Industrial Controls and Electronics group.

An urban plan for CERN

When CERN was established in 1954, the land was made available to the Laboratory by the Host States for exclusively scientific purposes. The question as to how the infrastructures would be organised was not on the agenda. Buildings were erected one after another to meet the needs of one scientific project after another. Nearly all of CERN's financial resources were then poured into the construction of the LHC but hardly any were invested in its infrastructure.

"Back around 2000, we started realising how dilapidated certain buildings were becoming," notes Matti Tiirakari, who heads the Site Engineering and Management Group in the GS Department. But ageing buildings were not the only problem - even the way they are organised no longer meets our everyday requirements. Some areas are saturated or cater for a disparate set of activities, while

The GS Department has just initiated several preliminary studies with a view to the elaboration of an urban plan for CERN. The aim is to re-define the organisation of the Laboratory's infrastructures and give it a new lease of life where the top priorities are environmental protection and quality of life for all who work here.

others remain unoccupied. This lack of coherence often means that people have to take their cars, and in some places this causes parking and traffic problems. So it's important to rationalise the way these spaces are used. Moreover, many buildings no longer comply with insulation standards and some offices and empty spaces are heated for no good reason."

The campaign will be three-pronged, covering buildings, mobility (transportation and circulation) and landscaping. As Matti explains: "The launch of urban planning studies at CERN comes at an important time, with the Cantons of Geneva and Vaud currently working with the local authorities in Ain and Haute-Savoie on the *Projet d'Agglomération franco-valdo-genevois*, an

urban planning project designed to create and organise a vast, cross-frontier urban zone, of which the CERN site will be just one component. So given the favourable context in the Host States and with the imminent arrival of the tram, the time and the circumstances could not be better for CERN to be developing an urban plan."

The plan should be ready by December 2013 and is set to re-design the Organization for the coming 30 years. Several preliminary studies are required, including a survey of mobility on and between the sites, which has just been entrusted to the University of Athens and will commence in July.

Laëtitia Pedroso



A technology developed at CERN captures the sun's energy

On Tuesday 15 June the Geneva branch of the civil-engineering company Colas opened a new solar power plant based on ultra-high vacuum technology developed at CERN. Measuring a total of 80 square metres, the environmentally friendly "solar field" heats close to 80,000 cubic metres of bitumen to 180 degrees. "To be able to reach such a high temperature, I drew on the ultra-high vacuum technologies I learned about at CERN", explains Cristoforo Benvenuti, who invented the panels.

The ultra-high vacuum is what makes these solar panels so innovative. "It's very attractive because it minimises heat loss", continues Benvenuti. "The temperature of a solar panel works like a bank account. When you're on a low income, one way of building up your account is to reduce your expenditure. It's the same thing with the panels: to increase the temperature you have to minimise heat loss. And vacuum is the best heat insulation technique Nature has to offer." Getter pumps are used to create the ultra-high vacuum. These pumps work a bit like chemical sponges, trapping any air molecules that are unlucky enough to get near them.

The second important ingredient, given the weather conditions in Geneva, is diffuse or indirect light, which is recovered using a reflective device consisting of two cylindrical mirrors (see photo). "The panels create steam, whether or not the sun is shining!"



Cristoforo Benvenuti seen with an example of his invention = the ultra-high vacuum thermal solar panel.

A civil-engineering company has recently started using thermal solar panels based on ultra-high vacuum technology developed at CERN. By efficiently preventing heat loss, the technology allows water to be heated to several hundred degrees, even in a temperate climate.

This is very useful since, in Central Europe, diffuse light can represent more than 50% of the total solar energy available".

"All this is another example of how the technologies developed at CERN for fundamental research can lead to the development of innovative products", says Hartmut Hillemanns, a member of the Knowledge and Technology Transfer Group. Even if it typically takes 5 to 10 years to market them, the time and manpower needed to bring prototype technologies to the stage where they can be commercialised are a good investment. The resulting products help to underline the importance and usefulness of particle physics for society in general."

The green technology used in the solar panels may well be of interest to other

industries in the construction, chemical and food sectors, for example. In any case, there are already plans to extend it to the entire Colas factory in Vernier (Geneva), or even to all Colas plants in Switzerland. However, it is of less interest to individual home-owners: "The solar panels produce hot water but at very high temperatures of up to 300 degrees", explains Benvenuti. "Simpler and probably less costly panels are more suited to domestic use".

Technological developments are springboards for innovation as they benefit research as well as industry, as Benvenuti confirms: "At first, I drew inspiration from CERN's ultra-high vacuum technologies, then that got me interested in Getter pumps. When I realised their advantages, I put them forward for use in the LEP and later the LHC, and they are widely used in the LHC today. It's therefore fair to talk of a two-way exchange that benefits both the solar industry and CERN!"

Alizée Dauvergne



The field of solar panels using technology developed at CERN.

Moving into the third dimension

A complete digital mockup of the LHC in three dimensions already exists, including of course the tunnel, the machine systems including magnets

and vacuum chambers, but also all of the various services such as cable ladders, piping systems and access control and so on. Only the colour and the texture of the surfaces betray that it is a mockup and not the real thing! The mockup of LINAC4 is finished too. The mockups for the SPS, ISOLDE and the entire PS complex, including transfer lines, are still being created. "Creating these 3-D mockups will allow us to work on forthcoming machine improvements, especially for the LHC. It will also be useful when the time comes to design new accelerators," explains Yvon Muttoni, head of the section that is responsible for integration work on the accelerator chain, from LINAC4 to LHC.

Those improvements to the LHC are planned as early as next year. That means studies will have to be done, while the machine is still in operation, to establish the feasibility of integrating the new equipment. Yvon continues: "The 3-D mockups provide access to very detailed, realistic information, so that one can verify whether a new machine can be inserted. This makes it possible to organise the work and ensure that it is actually feasible, without having to await a technical stop so that we can get inside the tunnel to take measurements."

One detail at a time, digital 3-D models of CERN's various machines are being created by the Integration Section in the Machines & Experimental Facilities Group (EN/MEF). The work, which requires painstaking attention to detail on a colossal scale, facilitates improvements to existing accelerators and the design of new machines in the future.

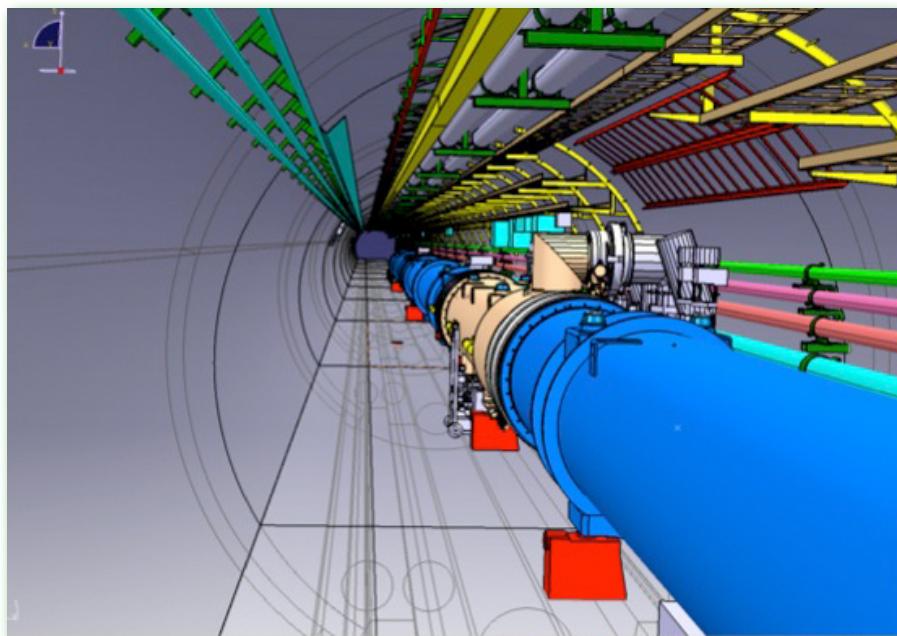
The main challenge the team faces here is managing spaces and volumes, since there isn't much room to spare in the tunnel. Every single item takes up a certain volume, of course; but in addition to that, you have to think about how much space will be needed for transportation and installation of equipment. "If you want to install a new piece of machinery in the accelerator, you have to check that there is enough space at the location where you want to put it and sufficient clearance between the existing components for the new item to be moved to and set up at that location."

When a service starts making plans for modifying a machine, Yvon's team is alerted. Yvon describes the procedure: "We study how an improvement might be implemented by integrating it into the 3-D mockups. Once all of the affected services have validated the digitally generated image of the proposal, the actual modification can be carried out, during a technical stop." The Integration team has designed a special website that allows the experts in the various services to study the proposals to be validated. This validation process is meant to ensure that the 3-D mockup is technically sound and remains up to date. As Yvon explains, "The website has another

function as a long-term data archive. It contains all of the documentation on the different machines— 3-D models, 2-D drawings, photographs, etc. In the case of some machines, the documentation had been lost. That is a shame, because it can be very useful as a source of inspiration for the design of future accelerators, particularly so as not to repeat past errors."

Currently, Yvon and his seven co-workers are working on a job that is planned to be done on the LHC in 2012. It involves a new type of collimator that will have to be inserted in the accelerator. "Some of the magnets will end up being displaced 4 metres in the longitudinal direction," notes Yvon. "As a result, the jumpers (cryogenic junctions) will no longer be lined up! That means a new cryogenic link will have to be added, with a special shape designed to thread its way between the surrounding machinery. It's the first, obvious task we have identified, as we are only at the start of the studies of the problem. But it's likely that this displacement will give rise to more difficulties for other equipment. This is the kind of brain-teaser that we love to tackle!"

Alizée Dauvergne



Virtual representation of the LHC

New auditorium for CERN

After 20 years as premises for the filtering and purification of CERN's drinking water and three years as a hall for the reception tests and testing of electronic equipment for the LHC experiments, Building 222 is about to get another new lease of life.

Only the Main Auditorium and the Globe have seating capacities in excess of 200 at CERN. "The problem of the lack of conference rooms with such a seating capacity was raised at the end of 2008 by the PH Department, which proposed this idea. The project was entrusted to the GS Department in 2009," explains Barthélémy Gossuin, an engineer in the GS Department who is in charge of the project.

After renovation, the building should be used as a conference venue for at least five years. "Given its strategic location in the hostels area, Building 222 could ultimately be replaced by another building," suggests Barthélémy. The challenge was to renovate the building at the lowest possible cost. However, the renovation meets current standards. The walls and the ceilings are being insulated and an efficient ventilation system is being installed to reduce

Since September 2009 the PH and GS Departments have been working very closely together on the renovation project for Building 222. The building is now being transformed into an auditorium with a seating capacity of 200. Work began on 15 November 2009 and will be completed just in time for the first conferences.

energy consumption for heating. To supplement the studies carried out by the GS Department, two consultants were commissioned for this project, an interior designer and an acoustics expert.

The technical requirements of the CERN personnel have evolved, necessitating ever more sophisticated equipment, especially in the audiovisual field. "The auditorium has been designed to meet their requirements," underlines Sébastien Auerbach, who is in charge of conference room equipment for the PH Department. All the equipment needed to ensure the smooth running of conferences is being installed. There are two screens, one for video conferences and the other for presentations. The auditorium will be adaptable to conference requirements, with three movable lecterns and one fixed lectern. There will also be floor sockets so that users can plug in their portable computers."

To ensure that the building integrates harmoniously into CERN's environment,

Fabienne Marcastel, who is a graphics designer, has taken particular care over the visual characteristics of the auditorium. The building will be inaugurated on 1st July and the first conference will take place that day.

Laëtitia Pedroso

A building can have several lives

Building 222, built in 1977, was originally a filtration plant treating all the water used by CERN.

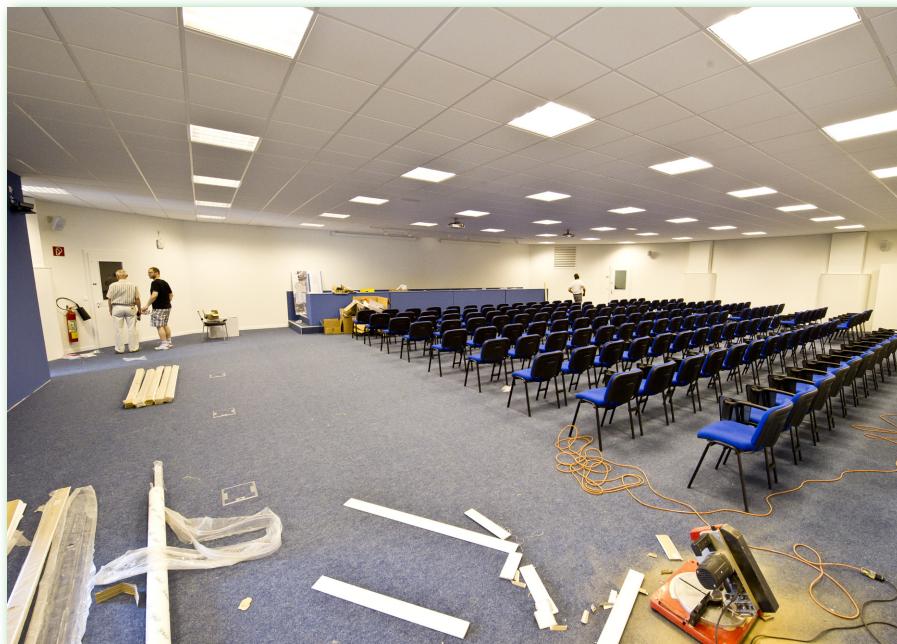
At that time, the water was supplied by the Services Industriels de Genève (SIG) and by pumping stations operated by CERN.

In the early 2000s, SIG started to operate a new plant which provides CERN with filtered water directly from Lake Geneva via a dedicated pipe line.

As a result, Building 222 became redundant and was transformed via the addition of a new wooden floor to create a storage and test facility for the electronics for the LHC experiments.

Further to the completion of the LHC project, the building became available once again and, given its excellent location on the Meyrin campus and the lack of large conference rooms, it was decided to convert it into a 200-seat auditorium.

This project was initiated by the PH Department and was managed in conjunction with the GS Department in 2009-2010.



Building 222 during the renovation work.

Children's drawings exhibited in the Globe

For a six-month period 9 to 11-year olds from the Pays de Gex, Meyrin, Satigny and Vernier have been able to enjoy a balance between science and art, through drawing and defining their interpretations of a physicist. In May, eight pairs of drawings from each participating class were selected by the schools to be displayed on the second floor of the Globe. Since the images have been put up, the viewers have enjoyed the contrast between the "before" pictures of vibrant Albert

"Draw Me A Physicist" has been a success. Members of the public visiting the exhibition in the Globe of Science and Innovation have praised the scientific and creative balance the children of neighbouring France and the Canton of Geneva have obtained through their visit to CERN.

Einstiens to the "after" pictures of casual people sitting in an office.

The large room in the Globe has been transformed from a hollow shell into a room full of colour and interest. "The exhibition is the successful conclusion of a six-month process. Both the physicists and the children showed a lot of enthusiasm in participating



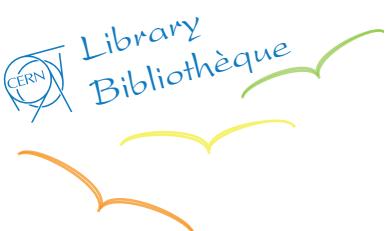
The Draw Me a Physicist exhibition in the Globe.

in the project", says Corinne Pralavorio, who is in charge of Local Communication and was the project leader. "It was particularly rewarding for the physicists to see the children's very positive response and their interest and motivation to find out more about their job".

Some of the physicists who participated in the programme by accompanying the children on a visit to the Laboratory or by presenting CERN in the classrooms were even able to recognize themselves in some of the drawings. "It was amazing for all of us to realize how the children pictured physicists, and it just shows how little people know about the job, since many confused chemistry with physics. It's good to see that, in most cases, the second drawings show that kids have understood what a physicist does", says Corinne.

The project will have a follow-up as proposals have already been made to start a new collaboration involving primary schools with the *Education Nationale* in the Pays de Gex and Geneva's *Département de l'instruction publique*. In the meantime, some of the drawings are pictured on the envelopes on sale in sets of ten in the Post Offices of the Pays de Gex. You can see the drawings as well as a collection of photos and videos on the programme's website. The exhibition will move to the Main Building in the summer and then to the University of Geneva in September.

Elizabeth Roe



News from the Library The Library quenches your thirst

As you might know, the CERN Library switched to an (almost) fully electronic journal collection a couple of years ago; now all subscribed journals are accessible online except some magazines and reviews.

Of course, librarians carefully monitor the usage of the electronic journals, in order to maintain a coherent collection in accordance with users' needs. Statistics show a constant increase in the use of this collection, so that, even for the most expensive journals titles, the average cost per downloaded article can be as little as 0.5 euros!

This archived growth in use can be explained by factors such as the increasing number of CERN users, and also by the usage of electronic resources becoming a deep-rooted habit. However, it is worthwhile to note that, according to a recent study (*Scientometrics*, 2010, 84, 345) in High Energy Physics, 82% of SPIRES users prefer to read the arXiv version of a paper even if the published version exists on the publisher's website. But the CERN Library e-journals collection goes far beyond High Energy Physics, covering disciplines where use of arXiv is much less common; therefore it is not surprising at all to have a high usage of e-journal.

And if users visit less often than in the past the physical Library to consult paper journals, it doesn't mean readers no longer use it: last summer, we had a visitor entering the Library every other minute during office hours. This summer, we expect to welcome even more readers, especially as a water fountain has recently been installed on the 1st floor, next to the photocopier.

Now, the Library is not only there to quench your thirst for knowledge...

CERN Library

A new mural for the Globe

Visitors ascending from the ground-floor to the first floor of the Globe are now

greeted by a huge visual record of what's going on below ground at CERN and is no longer accessible on guided tours of the Laboratory. "The mural contains full-scale photos that give you a real feel of how the CMS detector is constructed and of the degree of precision of the particle tracks in the ATLAS event", explains Rolf Landua, Head of the Education Group, who came up with the project in conjunction with Bernard Pellequer.

Several people were instrumental in bringing the project to life. The collage of 250 photographs of the CMS detector was retouched and assembled by Maximilien Brice, CERN's photographer, with the assistance of M. Hoch and M. Alidra from the

A 53 metre long and 6 metre high mural has graced the ramp of the Globe since 21 June. Containing life-size photos of the CMS experiment and an event in the ATLAS detector, its visual impact cannot fail to rouse visitors' curiosity.

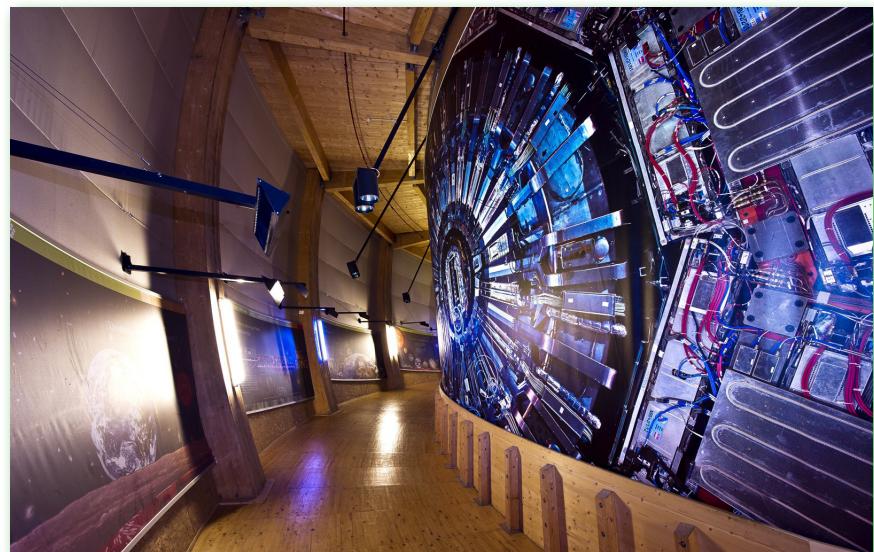
CMS experiment for the selection of the shots. "Given the complexity of the detector, it was a real challenge to correct the optical distortions for each of the photos and put them together in a perfectly geometrical sequence", explains Maximilien. The ATLAS event images were prepared by Joao Pequenao, a physicist working with the experiment. Graphic designer Fabienne Marcastel put the two components together and reworked them to build up a coherent whole. "I used a 3D photograph to achieve this result", explains Joao. "We had to make lots of different changes using Photoshop. The mural is an excellent means of reaching out to the public. It's an attractive, accurate and simple way of conveying information."

The next step was to find a company able to print such a large-scale mural. "The team from Rutschi Genève SA took up the challenge with great enthusiasm!", says Fabienne. "One of the things that set us apart is our willingness to study our customers' individual requirements in depth in order to find the optimum solution", says Marie-France Bras, head of the company. "This project offers just the kind of challenge we enjoy".

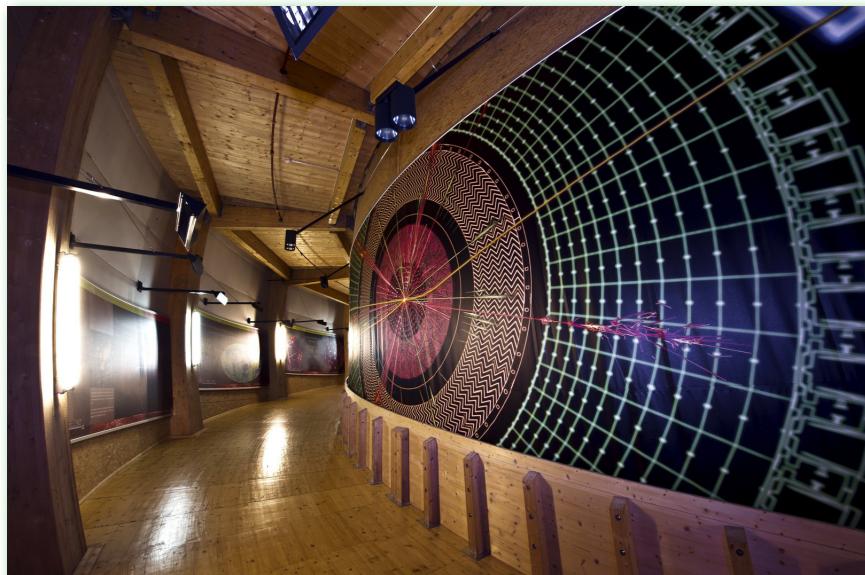
For visitors to the Globe, the mural is a very fitting addition to the new permanent exhibition and the activities taking place on the first floor.

The Globe will be open to everyone at CERN on 29 and 30 June. Don't miss the opportunity to go and admire its spectacular new mural.

Laëtitia Pedrosa



The new mural installed in the Globe.



The Atlas event on the new mural.

Highlights of the inauguration ceremony for the new permanent exhibition

At the conclusion of the inauguration ceremony, the Head of the Education Group, Rolf Landua, expressed his satisfaction: "It's

wonderful. We are very happy that it has all turned out so well. Now we look forward to lots of visitors."

The exhibition represents a major addition to the tourist destinations in the region and an important tool for the public awareness of science, which could also be useful for schools. "The purpose of the exhibition is to inspire visitors, to arouse their curiosity about science and to motivate them to find out more about it," explains Rolf Landua. This conclusion was confirmed by Charles Beer, State Councillor of the Republic and Canton of Geneva and Head of the Department of Public Instruction, Culture and Sport: "The stakes of fundamental research are so great that that it is important for the general public to have the capacity to understand them. Within the Canton, there are few initiatives of this kind, and with this public awareness exhibition CERN is providing schools and the general public with the opportunity to get to grips with and to obtain a virtual experience of those

The new "Universe of Particles" permanent exhibition in the Globe was unveiled this week to its first visitors. On Monday, 28 June, in the presence of representatives of the local authorities, CERN Director-General Rolf Heuer cut the ribbon; on Tuesday, 29 and Wednesday 30 June the Globe's doors remained open for visits by the CERN personnel.

stakes." "This exhibition is a splendid tool for the entire local population", adds Guy Larmanjat, Vice-President of the General Council of the Department of the Ain, where he has responsibility for tourism and cross-border issues. "The technology used for the exhibition is in itself a public awareness of science tool. In our view, this exhibition will be a tourist landmark. Today, the Director-General expressed the hope that the exhibition would attract 60 to 70'000 visitors: it will be a veritable magnet!"

Everything in the exhibition is "round", "futuristic" and high-tech. The lighting effects play a major role and everything is interactive. "We started with two design concepts: a "round" one and a "cubic" one," explains Shirin Brückner, Managing Director of the Atelier Brückner which produced the exhibition. Some of our colleagues preferred the "cubic" version, but the "round" one eventually won the day because it seemed to us to be more symbolic, more readily understandable and in keeping with

the world of fundamental particles and our conception of the Universe."

Rolex, which sponsored the exhibition, was also enthusiastic about the outcome of this partnership: "We have long-standing connections with CERN and many of the values that CERN stands for are shared by us at Rolex, such as the transmission of knowledge and making young people aware of science and technology. In addition, CERN has an international dimension and Rolex is the world's leading luxury watch manufacturer; CERN strives for technological innovation in the pursuit of knowledge, and Rolex is driven by similar goals. There is thus a strong affinity between us", underlines Jacques Baur, Associate Director of Rolex SA.

A complete photographic record of the inauguration is available at:

<http://cdsweb.cern.ch/record/1274274>

The inauguration of the exhibition is also on the front page of the "Respect changes your life" site:

<http://www.lerespect.org/> and <http://www.lerespect.org/Partenaires/CERN/Cern.htm>

CERN Bulletin



Cutting the ribbon at the inauguration of the Globe's new permanent exhibition.

What plans are there for Microcosm?

With the advent of the new exhibition in the Globe, Microcosm will be revamped as a teaching aid for the many schoolchildren who visit CERN. "The visit to Microcosm will complement the tour of the installations, which normally takes half a day," explains Rolf Landua. "The teaching activities will be guided and might include small experiments enabling the children to gain a better understanding of particle physics."

The Hardronic Festival doubles in size

Simon Baird, EN Deputy Department Leader and President of the Music Club, is proud of the Club's success. Established in 1985, the Club now has more than 100 members from CERN and outside. "Several bands use our rehearsal room in Building 566, and this year 16 bands wanted to perform at the Hardronic Festival, our flagship event", says Simon. "We wanted to give all of them a reasonable amount of time on stage and thus we extended the duration of the Festival".

The Club has become very popular. Its rehearsal room, fully equipped with two pianos, amplifiers, drum kits, microphones, speakers, etc., has reached its booking capacity. "The facility is booked all the time. We are looking for a new room, possibly at CERN. Having a new room would help the Club a lot! We also rent material to members when they play in clubs in the local area", says Simon.

The Hardronic Festival is one of the most popular events of the summer at CERN. Given its big success and the huge number of bands wanting to perform, this year the organisers have decided to hold it over two and a half days. Don't miss it on the evening of 16 July and all day on 17 July!

The idea of organizing a music party for the staff originally came from Silvano De Gennaro (currently a member of the Communication Group), who organized the first Hardronic Festival in 1989. "We held the Festival on the terrace of Restaurant No. 1", recollects Silvano. "Only a few groups performed but the initiative was so successful that we had to find a different location to host the Festival and avoid disturbing the neighbouring hospital". However, the spirit of the Hardronic Festival hasn't changed over the years and the organisers still recall the original slogan invented by Silvano for the first edition: "Have fun together to work better together".

So, don't miss the opportunity to enjoy listening to your colleagues playing on the Hardronic Festival's stage! Join in the fun on the terrace of Restaurant No. 3 on the Prévessin site on the afternoon of Friday, 16 July and all day on Saturday, 17 July.

More information can be found at:

http://muzipod.free.fr/?page_id=7

CERN Bulletin



And now, for the winners

The presentation videos can be viewed on Indico.

The computer security team's new website is now up and running, with a wealth of useful information and advice. Go to <http://cern.ch/Computer.Security>.

The Computer Security Day held on 10 June was a success. There were eight presentations, with some forty people attending each session.

The quiz attracted 130 participants, and the answers have now been posted on line! The quiz winners are:



Lars Aprin,
Richard Baud,
Thibaut Bernard,
Brice Copy,
Daniele de Ruschi,
Sébastien Gadrat,
Amanda Garcia Munoz,
Stephen Gowdy,
Joni Hahkala,
Joseph Izen,



Ryszard Erazm Jurga,
Jukka Klem,
Danila Oleynik,
Ian Pong,
Pascal Serge Roguet,
Jani Tapani Taskinen,
Jan Therhaag,
Yves Thurel,
Adrian Vogel,
Thomas White.

Well done to all! If you haven't done so already, you should soon be getting your prize (i.e. a book, a T-shirt or a bag, etc.).

Alizée Dauvergne

Rob Wolf 1947-2010

We deeply regret to announce the death of Mr Rob WOLF on 20.06.2010.

Mr Rob Wolf, born on 07.06.1947, worked in the TE Department and had been employed at CERN since 15.09.1973.

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

*Social Affairs
Human Resources Department*



Rob Wolf passed away on Sunday 20 June after a long illness. Born in June 1947 in The Netherlands, he joined CERN as a fellow in September 1972 after obtaining his doctoral qualification from the University of Leiden (NL) on the degradation of superconducting materials in ionizing radiation. He was a member of the CERN personnel since 1st March 1975.

Rob immediately assumed full responsibility for the measurement and qualification of the superconducting materials for the low-beta magnet project of the ISR, and was then tasked with the manufacture of the corrector windings of these magnets. Throughout his working life he remained a reference in these areas. Later, Rob took on the responsibility for the LEP resistive sextupole magnets, including complete management of their industrial production, and for the superconducting wires of the LEP superconducting low-beta magnets. He made important contributions to the

procurement of LHC superconductors mastering all theoretical aspects related to their magnetization. He then led the section responsible for the superconducting corrector magnets. Finally he took a full and active part in the magnetic modelling required to pilot the main ring magnets of LHC and had decided to retire only when this machine was productively operational. We are in his debt for the detailed physical explanation of the "decay and snap-back", a parasitic phenomenon, the precise control of which is essential to the successful acceleration of the LHC particle beams. We all remember his extraordinary talents applied to the fundamental explanation of the numerous technical problems that these accelerators presented.

Rob impressed us with his calm, his discretion and wisdom. No one can remember him ever raising his voice. His management style was based on competence and good solid common sense. Rob was often to be kindly teased out of profoundly distracted moments - prone at any time to total absorption in his work, he would accept this with goodwill and a smile.

He brought many of us to share his love and passion for the mountains and to appreciate his extended knowledge of mountain craft. Many a discussion did we share and enjoy with Rob on the protection of nature and the promotion of sustainable development, to which he applied his talents as a physicist and his devotion to simple values.

We extend our heart-felt sympathy to his wife, Heidi, and to his family.

His colleagues and friends from TE Department



Take note

LES BOÎTES À PHARMACIE – RAPPEL

Afin de permettre un usage optimal des pharmacies réparties sur le site du CERN, nous vous rappelons différents changements intervenus depuis mars 2009 :

- La responsabilité de ces armoires de premier secours et le contrôle de leur contenu incombent désormais aux TSO des bâtiments concernés.
- Le réapprovisionnement de ces pharmacies s'effectue UNIQUEMENT au magasin CERN et non plus à l'infirmérie (n° de scem : 54.99.80). Le coût est à la charge des départements .
- Ces pharmacies ne doivent être utilisées que pour des lésions bénignes. Pour toute autre raison, il est impératif de se rendre à l'infirmérie du Service médical (bât. 57 – rdc, tél. 73802) de 8h à 17h30 ou d'appeler le Service Secours/Feu (tél. 74444).

P.S.: Cette information ne concerne ni les armoires rouges d'urgence situées dans les puits ni les kits d'urgence en cas de projection d'acide fluorhydrique.

Département GS



Language training

FRENCH COURSES FOR BEGINNERS

French courses for beginners (level 0) will take place from 12 July to 27 August 2010.

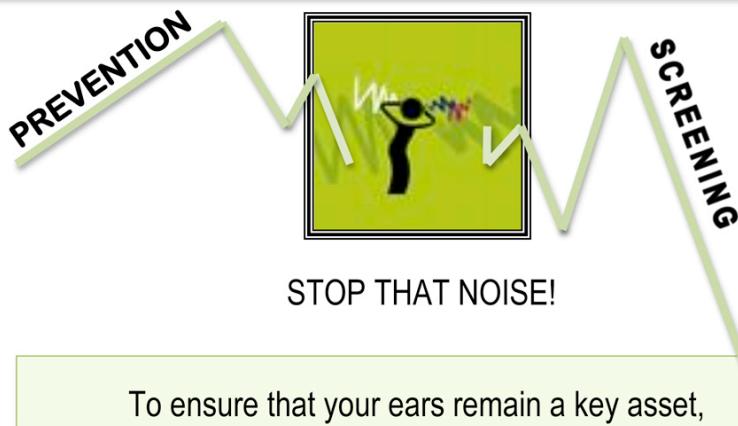
- Timetable:
Mondays, Tuesdays, Wednesdays, Thursdays
(11.00 to 13.00 or 13.30 to 15.30)
- Duration: 56 hours (8 hours a week)
- Price: 728 CHF

For registration and further information on the courses, please consult our Web pages:

<http://cern.ch/Training>

or contact Mrs. Dumeaux : Tel. 78144.

nathalie.dumeaux@cern.ch



To ensure that your ears remain a key asset,
CERN's nurses invite you to come for:

A HEARING CHECK-UP

From 12 to 16 July 2010

At the Infirmary, Bldg. 57

From 9 a.m. to 4 p.m.

- Hearing Tests
- Advice
- Information
- Documentation
- Hearing Protection



Available to everyone working on CERN premises



Seminars

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MONDAY 5 JULY

TH JOURNAL CLUB ON STRING THEORY

14:00 - TH Auditorium, Bldg. 4

Charged Particle-like Branes in ABJM

N. GUTIÉRREZ / CERN & UNIVERSITY OF OVIEDO

TUESDAY 6 JULY

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA

R. ROIBAN / PENN STATE U.

COMPUTING SEMINAR

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

Fast parallel event reconstruction

I. KISEL / GSI, GESELLSCHAFT FÜR SCHWERIONENFORSCHUNG MBH

CERN COLLOQUIUM

16:30 - BLDG. 222-R-001

SPECIAL COLLOQUIUM : Building a Commercial Space Launch System and the Role of Space Tourism in the Future (exceptionally on Tuesday)

W. WHITEHORN / PRESIDENT OF VIRGIN GALACTIC

WEDNESDAY 7 JULY

LHCC MEETING

08:00 - BLDG. 222-R-001

102nd LHCC Meeting Agenda Open Session

T. WYATT / UNIVERSITY OF MANCHESTER

SUMMER STUDENT LECTURE PROGRAMME GLOBE 1ST FLOOR

09:15 - Introduction / Welcome Presentation/ Computer Security/ Workshops presentation

WELLS, J / CHAIRMAN SSLP- LUEDERS, S - NEUFELD, N

10:15 - From heavy Ions Collisions to Quark Matter (Particle Physics) (1/3)

C. LOURENCO / CERN

11:15 - Introduction to CERN Computing Services

B. PANZER-STEINDEL / CERN

17:00 - Welcome Drink - Restaurant 1 Novae

WEDNESDAY 7 JULY

TH THEORETICAL SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA [QCD TH Institute]

K. MELNIKOV / JOHNS HOPKINS UNIVERSITY

THURSDAY 8 JULY

SUMMER STUDENT LECTURE PROGRAMME

GLOBE 1ST FLOOR

09:15 - Superconducting Magnets

L. BOTTURA / CERN

10:15 - From heavy Ions Collisions to Quark Matter (Particle Physics) (2/3)

C. LOURENCO / CERN

11:15 - From Raw Data to Physics Results (1/2)

G. DISSERTORI / INSTITUT FÜR TEILCHENPHYSIK

12:00 - Discussion Session

BOTTURA L, LOURENCO C, G. DISSERTORI / INSTITUT FÜR TEILCHENPHYSIK

CERN COMPUTING COLLOQUIUM

14:00 - BE Auditorium, Meyrin, Bldg. 6-2-024

Trends in Storage Technologies

E. ELEFTHERIOU / IBM ZURICH RESEARCH LABORATORY

FRIDAY 9 JULY

SUMMER STUDENT LECTURE PROGRAMME

GLOBE 1ST FLOOR

09:15 - TBC "What is a Jet?" Special Lecture

S. ELLIS / DEPARTMENT OF PHYSICS-UNIVERSITY OF WASHINGTON

10:15 - From heavy Ions Collisions to Quark Matter (Particle Physics) (3/3)

C. LOURENCO / CERN

11:15 - From Raw Data to Physics Results (2/2)

G. DISSERTORI / INSTITUT FÜR TEILCHENPHYSIK

12:00 - Discussion Session

C. LOURENCO / CERN, G. DISSERTORI / INSTITUT FÜR TEILCHENPHYSIK

FRIDAY 9 JULY

CERN HEAVY ION FORUM

11:00 - Bldg. 160-1-009

Hydrodynamics of Relativistic Fluids with Spin

F. BECATTINI / DIPARTIMENTO DI FISICA

PARTICLE AND ASTRO-PARTICLE PHYSICS SEMINARS

14:00 - TH Auditorium, Bldg. 4

HO10 TH Institute

MONDAY 12 JULY

SUMMER STUDENT LECTURE PROGRAMME

GLOBE 1ST FLOOR

09:15 - Introduction to CERN

R. HEUER / DIRECTOR-GENERAL CERN

10:15 - Standard Model (1/6)

J. TERNING / UC DAVIS

11:15 - Standard Model (2/6)

J. TERNING / UC DAVIS

12:00 - Discussion Session

J. TERNING / UC DAVIS

CERN JOINT EP/PP SEMINARS

11:00 - Please note the unusual room : 222-R-001

Laser experiments at Fermilab to search for exotic particles and new properties of space time

W. WESTER / FERMILAB NATIONAL ACCELERATOR LABORATORY, USA

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA (note special day)

R. GOPAKUMAR / HRI INSTITUTE



Seminars

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TUESDAY 13 JULY

SUMMER STUDENT LECTURE PROGRAMME
GLOBE 1ST FLOOR

09:15 - Detectors (1/5)

W. RIEGLER / CERN

10:15 - Standard Model (3/6)

J. TERNING / UC DAVIS

11:15 - Standard Model (4/6)

J. TERNING / UC DAVIS

12:00 - Discussion Session (1/2)

J. TERNING / UC DAVIS, W. RIEGLER / CERN

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA

Z. KOMARGODSKI / IAS PRINCETON

WEDNESDAY 14 JULY

SUMMER STUDENT LECTURE PROGRAMME
GLOBE 1ST FLOOR

09:15 - Detectors (2/5)

W. RIEGLER / CERN

10:15 - Standard Model (5/6)

J. TERNING / UC DAVIS

11:15 - Standard Model (6/6)

J. TERNING / UC DAVIS

12:00 - Discussion Session (2/2)

J. TERNING / UC DAVIS, W. RIEGLER / CERN

TH THEORETICAL SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA

M. SHIFMAN / UNIVERSITY OF MINNESOTA

THURSDAY 15 JULY

SUMMER STUDENT LECTURE PROGRAMME
GLOBE 1ST FLOOR

09:15 - Detectors (3/5)

W. RIEGLER / CERN

10:15 - Detectors (4/5)

W. RIEGLER / CERN

**11:15 - Antimatter in the Lab
(Experimental Particle Physics)
(1/3)**

R. LANDUA / CERN

12:00 - Discussion Session (1/2)

R. LANDUA / CERN, W. RIEGLER / CERN

FRIDAY 16 JULY

SUMMER STUDENT LECTURE PROGRAMME
GLOBE 1ST FLOOR

09:15 - Detectors (5/5)

W. RIEGLER / CERN

**10:15 - Antimatter in the Lab
(Experimental Particle Physics) (2/3)**

R. LANDUA / CERN

**11:15 - Antimatter in the Lab
(Experimental Particle Physics) (3/3)**

R. LANDUA / CERN

12:00 - Discussion Session (2/2)

R. LANDUA / CERN, W. RIEGLER / CERN

PARTICLE AND ASTRO-PARTICLE PHYSICS
SEMINARS

14:00 - TH Auditorium, Bldg. 4

TBA

A. BERAUDO / CERN