



Nos 23 & 24 – 9 & 16 June 2010

## Lyn decelerates!



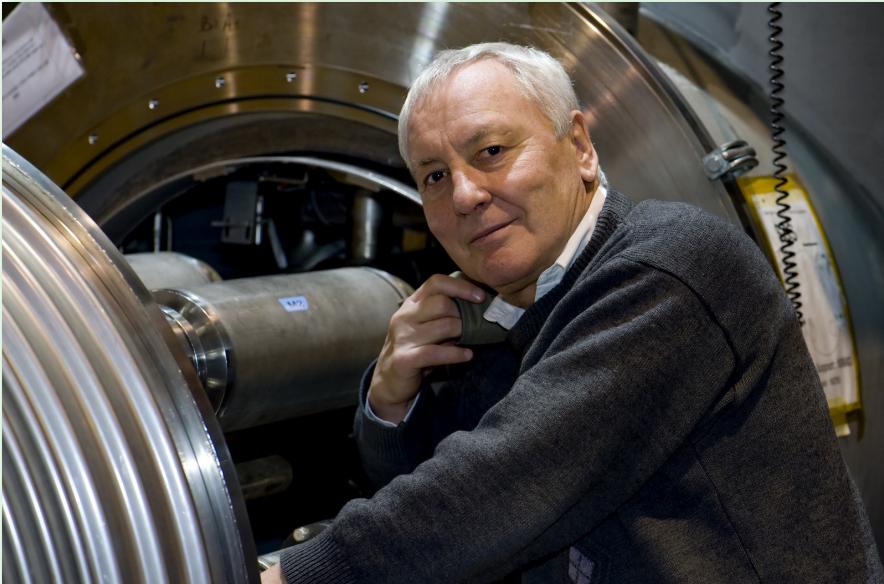
A word from the DG



### Security needs you

**A**cademic freedom is a valuable thing, but like any kind of freedom, it comes with responsibility. Here at CERN, and in the global particle physics community as a whole, we enjoy an open academic environment, which gives us freedom of choice and freedom of expression. It is a strong tradition at CERN, but it's not something we can ever take for granted. This is particularly true in the area of IT, where our openness and our global visibility make us an attractive target. Attacks on our IT infrastructure in the past have had a negative impact on our reputation, and have even led to changes in the way we operate computing services.

(Continued on page 2)



**N**ote from the Editor: It is unusual for the Bulletin to adopt a question-and-answer style. However, we recognise that, with someone of Lyn's stature, the appropriate thing to do is simply to give him the floor.

**Bulletin:** Lyn, are you really leaving CERN?

I am retiring but I will not completely lose contacts with CERN and the LHC. It's time to slow down for me now but I will join the CMS Collaboration. I will help with the link between the experiment and the machine.

**Bulletin:** After many years as LHC Project Manager, what are your feelings now for the LHC?

I have been at CERN for 41 years and working on the LHC for about 15. The LHC is a large slice of my activity at CERN but not the only one. The LHC is a fabulous machine.

**After more than 40 years at CERN, 15 of which were dedicated to ensuring that the LHC comes to completion, Lyn Evans is retiring. The Imperial College Professor and recently-elected Fellow of the British Royal Society has set himself new challenges, but plans to keep strong links with CERN. His big thank you goes to the many hundreds of people who built one of the most complex scientific instruments ever conceived by mankind.**

If I were asked what I would do differently, there would not be very much. We have some consolidation to do now but I think this machine is good for the next 20-30 years.

**Bulletin:** What is the most challenging thing you have dealt with during your career?

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## A word from the DG

(Continued from page 1)

### Security needs you

**It is the responsibility of all of us, not just the experts in the IT Department, to protect our IT infrastructure while striking the right balance between security, academic freedom and the unfettered operation of our facilities. Everyone using CERN's IT infrastructure is responsible for the security and protection of the computers they use, the operating systems they run, the applications they install, the programs they write and the data they store. For those of us who manage computing services and systems, that responsibility clearly extends to them as well.**

**In assuming your responsibility, you are not alone: the IT Department and the Computer Security Team are there to help, and you'll learn more about how in this issue of the Bulletin. We all have an essential role to play in protecting our academic freedom. Let's make sure that maintaining vigilance when using IT facilities, and proactively protecting computers & data remains an essential part of that responsibility. At CERN, security is not complete without you.**

*Rolf Heuer*



## Lyn decelerates!

(Continued from page 1)

Building the LHC, of course! What could be more challenging than that?

### Bulletin: Which was the worst moment in your career?

It was the Council reaction to the 18% overspend in 2001. I can deal with technical problems, but political and financial problems are much more difficult to deal with. 2001 and 2002 were the most difficult moments for the LHC project.

### Bulletin: And the best one?

When I saw the two beams coming into collision at 7 TeV and I saw the counting rate in the captors raising. That was incredible! It was very emotional for me.

### Bulletin: What do you think will be the best thing the LHC will bring to us?

The LHC is a machine built for research. The best thing it will bring to us is something that we would never imagine. A completely new knowledge of the Universe. Let's see what will happen!

### Bulletin: What is the strength of CERN?

I think CERN is a fantastic organisation. One of this Lab's strongest points is consistency and reliability. We say we are going to do it and we do it. The LHC was built over the span of five Directors-General and this says something for coherence and consistency. Stability is an essential feature of this Organization. We can carry on such big projects only with this kind of policy. Council has enormously contributed to make it possible. In my opinion, there is nothing like CERN in the world and probably never ever will be. We'd better make the most of it in the future.

### Bulletin: What are you most proud of?

It's the people who have built the LHC. People standing in the tunnel until 3 o'clock in morning. I cannot imagine anywhere else in the world where this machine could be built, because the crucial ingredient was the good will of the people. There is no management decision that could make it happen, I

could never ask people to do what they did. It was their real wish to make it possible.

### Bulletin: What future projects will you work on?

I will chair a few committees, such as the International Linear Collider Advisory Committee and that of the FAIR machine at GSI in Darmstadt (Germany). I will also be technically involved with FAIR. I am not going to stop but I will move on to new things, at least for a few years. I will also take some time off! I do not expect this to be a full time obligation.

### Bulletin: Will you still be involved in educational programmes?

Education is one of my passions. I think young people are our future. Science and physics in particular are a difficult subject to teach and I will continue to do videoconferences with schools and other educational programmes as long as people will ask me.

### Bulletin: What will you miss of CERN?

I don't look at it this way. When it's time to go, it's time to go. And other people will take over. I think this is an important feature of CERN: there is an obligatory retirement age and this liberates the space and funds for recruiting young people. I think this is a correct policy and we have really seen the profit from it.

### Bulletin: Lyn, will you miss the daily meetings at the CERN Control Centre?

No, I will not miss them because I will often be there as part of CMS!

### See you around Lyn!

On the occasion of Lyn's retirement, CERN's Management has organised a colloquium on Tuesday 15 June at 3:00 p.m.:

#### **The Large Hadron Collider - from Inception to Operation**

<http://indico.cern.ch/event/LynFest>

*CERN Bulletin*

# Computer security depends on YOU

The new campaign, organised by CERN's computer security team, will focus on prevention and involving the user. "This is an education and awareness-raising

campaign for all users at CERN," explains Stefan Lueders, in charge of computer security. "Every day, we register thousands of computer attacks against CERN: there are attempts to tamper with web pages, hack into user accounts, take over servers, and much more. A successful attack could mean confidential user information being divulged, services being interrupted or data being lost. It could even affect operations at CERN. Another factor is the damage that a successful attack could inflict on the Organization's reputation."

This is why computer systems, user accounts and data require proper protection. And this has to be done without infringing on academic freedom at CERN, where people are free to choose their own hardware, operating system, applications, programming language etc. "This means that every single user is a participant in computer security, by virtue of the working methods he or she uses," adds Stefan Lueders. "This is why we

A new campaign is taking shape to promote computer security. The slogan "SECURITY is not complete without U!" reminds users of the importance of their contribution. The campaign kicks off on 10 June with a public awareness day in the Council Chamber.

have set up the new campaign, with the major event on 10

June which we will use to inform and advise people at CERN about protecting their computers and data."

Starting at 9:30 a.m. on Thursday, 10 June, experts will share their experience in computer security with CERN users and suggest solutions. The event will take place in the Council Chamber but can also be followed by live webcast (<http://webcast.cern.ch>). "The presentations will cover past attacks targeting CERN, techniques used by hackers and other cybercriminals, safe web surfing, and how to protect your data and your servers," notes Sebastian Lopienski, the computer security team member who is the event organiser. For those who are unable to participate in the event that day, a summary of the key security recommendations will be made available on the campaign's web site (<http://cern.ch/SecDay>), in the form of video clips and games. Flyers will also be distrib-

uted by internal mail to all CERN users.

Stefan Lueders reminds us: "The IT Department and the computer security team are always ready to help users protect themselves. For example, the team is prepared, on request (Computer.Security@cern.ch), to check out programs and assess risks. We also offer training and general user advice. The IT Department provides the users with all the tools they need to work in complete safety."

To prevent unfortunate incidents and help preserve CERN's reputation, we invite everyone to take part in the forthcoming computer security campaign, especially the 10 June event.

*Remember, SECURITY is not complete without U!*

Alizée Dauvergne



## A better beam quality

Over the Whitsun weekend of May 22 to 24,

Progress has been made on two fronts, providing physics data and preparing for higher intensities.

5 fills for physics provided almost 30 hours of stable colliding beams, all with bunch intensities around  $2 \cdot 10^{10}$  and at a  $\beta^*$  of 2m. The first 3 of these were with 6 bunches per beam, giving 3 pairs of collisions in all experiments. For the other two fills, the number of bunches per beam was increased to 13, giving 8 pairs of colliding bunches, and for the first time luminosities were pushed above  $10^{29} \text{ cm}^{-2}\text{s}^{-1}$ , 2 orders of magnitude higher than first collisions in March.

In between and after these physics fills, nominal bunches of  $10^{11}$  protons were successfully ramped and brought into collision in ATLAS and CMS for the first time (not in stable beam conditions and without squeeze). Event rates seen by the experiments were in the expected range for these conditions. In the middle of this work, a

short fill with beams of 7 nominal bunches was made at injection energy.

A number of technical problems then slowed down the beam commissioning programme, before a major power cut late on the evening of Friday May 28 halted the whole accelerator complex. LHC was still on the road to recovery going into a scheduled three-day technical stop on Monday May 31.

The last part of the week was mainly dedicated to accumulating more experience with collisions with 13 bunches per beam with bunch intensities of  $2 \cdot 10^{10}$  and at a  $\beta^*$  of 2m and to progress with the commissioning of the transverse feedback, which is vital to maintaining a good beam quality when increasing the bunch intensity or the number of bunches.

CERN Bulletin

### What is a $\beta^*$ ?

$\beta^*$  describes the beam size at the interaction point. More mathematically, it is the measure of the distance from the interaction point that the beam is twice the size it is at the interaction point. The lower the beta, the smaller the beam at the interaction point, therefore the better for the physics. Before beam squeezing, beta is typically 11 m at ATLAS and CMS. Today, we're running with a beta of 2 m, and the ultimate goal is to reduce it to 0.55 m.

# Uniting forces in physics and medicine

The response to the first "Physics for Health in Europe" workshop was enthusiastic: more than 400 scientists

from 32 countries signed up, submitting 200 abstracts within a few weeks. Between fifty and a hundred people were connected to the live webcast at all times. "We had to close the registration before the planned deadline since the capacity of CERN's main auditorium had been reached", says Manjit Dosanjh from the organizing committee. Participants included physicists, medical doctors, experts in radioisotopes and policy makers.

Although physics research is at the origin of an increasing number of medical techniques used for the early diagnosis and treatment of tumors and other diseases, the workshop was a novel initiative to bring medical doctors and physicists together to discuss global strategies. "CERN was a natural host for such a workshop", says Manjit Dosanjh. "It is a neutral ground scientifically and most European countries have access and participate in CERN activities". "CERN has a long tradition in developing instruments for use in medicine", adds Ugo Amaldi, member of the scientific programme committee. "It's here that David Townsend and Alan Jeavons took the first PET image in 1977. Also, making use of the CERN facilities and beams we have developed the accelerating modules, which are the heart of CNAO, the hadron therapy centre recently inaugurated

Following the very successful 'Physics for Health' workshop held at CERN on 2-4 February this year, a strategy document has recently been issued. It outlines the main issues discussed at the workshop and indicates the most promising avenues in the field of medical applications derived from physics.

in Italy, and MEDAustron, a similar centre currently under construction in Austria".

The strategy document ([http://cdsweb.cern.ch/record/1269323/files/PHEE-10\\_EN.pdf](http://cdsweb.cern.ch/record/1269323/files/PHEE-10_EN.pdf)) that the workshop produced focuses on the following areas: radiobiology, radioisotopes, medical imaging, and new technologies that should be developed. Several new ideas were presented at the workshop. One proposal is to create a facility at CERN to provide particle beams of different types and energies to external users interested in radiobiology and detector development. "We are studying the possible options", says Marco Silari from the DGS Department who presented the project at the workshop. "We originally thought that the AD could be used but we are also investigating other possibilities, such as the LEIR, which is probably a better solution for ions other than protons".

One of the most important conclusions of the workshop was the proposal that CERN should launch and coordinate the activities of an international collaboration centred on a new low-cost facility for hadron therapy using the most advanced technologies (such as superconductivity), with the aim of participating not only in the design but also in construction. "This new study of

an accelerator for cancer therapy will be similar to the Proton-Ion Medical Machine Study (PIMMS) started in 1996", explains Ugo Amaldi. The strategy document also highlights the importance of building a consortium of European research facilities that could supply innovative radioisotopes to groups which develop radiopharmaceuticals for diagnostics and therapy. Several facilities could participate in such a consortium; certainly CERN's ISOLDE is one.

The other area where physicists and medical doctors are working more and more closely together is imaging. A very promising idea that is currently being investigated by several teams around the world is to combine the techniques of IRM and PET. "The different instruments give you different information about the internal structure in the body", says Gillies Mc Kenna from the Gray Institute for Radiation Oncology and Biology in the UK. And he adds: "These workshops in my experience are very useful because often medical doctors and physicists may not know which aspects of their work will be relevant to one another. Bringing groups together in a workshop can be a very useful way of initiating the teams that will address new scientific questions".

*Watch the video interviews of some of the workshop's participants and the specials about the recently inaugurated hadron therapy centres in Heidelberg (Germany) and at CNAO (Italy).*

CERN Bulletin



Rolf Heuer, CERN Director General talks to the participants in the "Physics for Health in Europe" workshop.

# Neutrino oscillations make their first appearance in OPERA

**N**eutrinos, abundant in cosmic rays, are involved in several of the nuclear reactions that take place in the Sun, and also in radioactive decays.

Numerous as they are, they continue to hold many secrets for scientists. One is the fact that the three types of neutrinos—electron, muon and tau neutrinos—can change into each other. This physical phenomenon, known as neutrino ‘oscillations’, was originally described in an article by Bruno Pontecorvo and Vladimir Gribov in 1969 based on Pontecorvo’s pioneering work in the 1950s. Its occurrence in nature can be used to prove that neutrinos have a non-vanishing, although very small, mass.

The beam that CERN sends along the 732 km to the INFN Gran Sasso laboratory in Italy consists almost entirely of muon neutrinos, with a small residual contamination of antineutrinos, which does not affect the measurements performed by OPERA. “Each day of the run, CERN sends billions of muon neutrinos to our experiment”, says Antonio Ereditato, OPERA spokesperson. “However, only about 20 events are registered per day as neutrino interactions in our experimental target. We then have to carefully analyse these events to see whether there is the signature of a tau neutrino, not present in the original beam.” Such an appearance would provide unambiguous proof for neutrino oscillation, and hence for the non-zero mass of neutrinos.

The first evidence of neutrino oscillations came from SuperKamiokande

1400 metres underground in the INFN Gran Sasso Laboratory, the Opera experiment has just observed its first candidate for neutrino oscillation – the phenomenon that confirms that neutrinos have mass. It is the first time that an experiment has observed the direct appearance of the new type of neutrinos produced in the oscillation. Opera uses a dedicated beam produced at CERN’s Super Proton Synchrotron (SPS).

in 1998. “Several other experiments in Europe, US and Japan have investigated and are presently studying this phenomenon”, explains Ereditato. “They study neutrino oscillations by measuring the number of neutrinos of a certain type that have ‘disappeared’ from a given beam. OPERA is the only experiment in the world dedicated to the ‘appearance’ of tau neutrinos arising from the oscillation of muon neutrinos, which should occur in flight as they make the 732 km-long trip from CERN.”

OPERA exploits a dedicated beam produced at CERN by colliding high-energy protons from the SPS with a graphite target. Among the several types of particle created in the interaction are positive pions and kaons, which go on to decay and produce muon neutrinos. “CERN and the INFN Gran Sasso Laboratory have collaborated to define the energy and properties of the beam in order for it to best meet the experiments’ requirements”, says Lucia Votano, Director of Gran Sasso Laboratory. “OPERA has now received about one fifth of the total number of par-

ticles expected for the whole duration of its programme. It has recorded its first tau candidate event but we will have to continue the data taking and data analysis in order to provide the scientific community with the final conclusive results”, adds Ereditato.

Although not a multipurpose detector, the OPERA apparatus is very complex, with a large ancillary infrastructure. Its core consists of 150 000 ‘bricks’ (see box) that register the tracks of the elusive particles. “We have analysed about 10 000 bricks so far. To do it, we use tens of automatic microscopes distributed in the participating institutes around the world. The readout is so accurate that we attain the accuracy of less than one micron in measuring the particles’ tracks”, says Ereditato.

“The results coming from the current neutrino experiments around the world will determine the future of neutrino physics”, concludes Lucia Votano. “I hope that CERN will continue to play an active role in neutrino physics and that CERN and Gran Sasso will continue to collaborate in this promising field.”

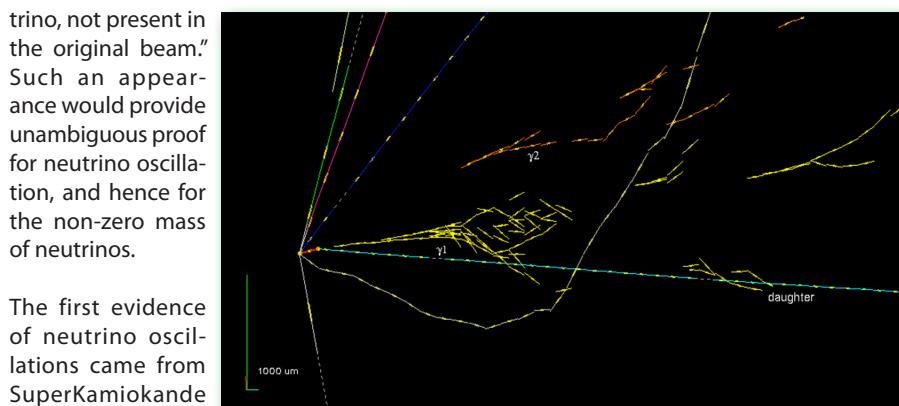
CERN Bulletin

## Did you know?

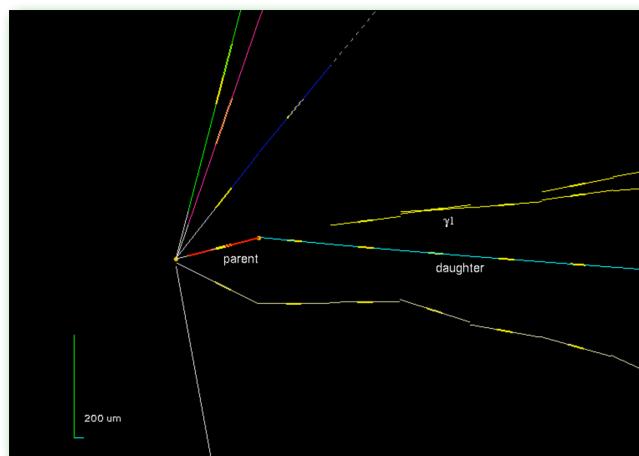


### The Opera experiment

The OPERA apparatus has two main parts. The first is a series of 62 parallel walls made with 150 000 bricks of alternate lead/emulsion layers, which record the passage of particles arising from the neutrino interaction. Each brick has 56 layers of lead interleaved with 57 layers of photographic film. Altogether, the 150 000 bricks thus contain about 10 million films. The second part is a series of complementary electronic detectors (trackers, magnets etc.) that tag the neutrino interactions in real time, providing the precise spatial location of the bricks where the neutrino interaction occurred. The relevant bricks are then extracted from the walls so that the film can be developed and scanned with computer-controlled scanning microscopes.



Tracks of first tau neutrino candidate event (top), observed by the OPERA experiment.



The same tau event (left); displayed at a 200 micrometer scale.

# It sounds good!

A group of particle physicists, composers, software developers and artists recently got involved in the 'LHC sound' project to make the particles at the LHC produce music. Yes...music! The 'sonification' technique converts data into sound. "In this way, if you implement the right software you can get really nice music out of the particle tracks", says Lily Asquith, a member of the ATLAS collaboration and one of the initiators of the project.

The 'LHC sound' project started in January



Screenshot of the first page of the site.

**Both the atmosphere and we ourselves are hit by hundreds of particles every second and yet nobody has ever heard a sound coming from these processes. Like cosmic rays, particles interacting inside the detectors at the LHC do not make any noise...unless you've decided to use the 'sonification' technique, in which case you might even hear the Higgs boson sound like music!**

2010 and was supported by the UK Science and Technology Facilities Council. The big LHC detectors are able to reconstruct the tracks of particles and calculate how much energy they leave along their path. "In our case, some of the data coming from the ATLAS detector is collected into a file, which is then read by compositional software that transforms it into music", explains Lily.

The sound samples currently available for listening on the 'LHC sound' site are made from both real and simulated data. "You can listen to the decay of a Higgs boson in the ATLAS detector, or to a proton-proton collision inside the LHC", says Lily. "We plan to add other sounds soon such as a kind of sweet-sounding alarm system to alert people to unusual event rates and we've started to think about the sonification of Feynman diagrams, the drawings which describe every possible interaction that can take place at the very smallest scale. We are currently developing a new website, iPhone applications and real-data ringtones

for mobile phones. Our long-term aim is to produce Graphical User Interfaces (GUIs) such that people can easily manipulate the sounds generated by the data without losing the underlying information it contains. The visual analogy to this is an event display such the one developed by the ATLAS collaboration, and the hope is that the two approaches might complement one another."

The 'LHC sound' is not the only project implementing the data sonification technique. Mickey Hart, percussionist with the band Grateful Dead and a Grammy Award winner, has produced 'Rhythms of the Universe', a composition based on astrophysical data. "NASA is also using sonification to listen to the sun and has made sonifications of the planets in the past", adds Lily. "Further examples include the sonification of seismic (earthquake and volcano) data developed by Domenico Vicinanza and his colleagues in Cambridge (UK)". And she concludes: "Making particles produce music is a way to get people interested in the results of the LHC experiments in a way that is novel, exciting and accessible. This allows us to share the excitement of being part of this great enterprise with a wider audience".

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## Council Chamber exhibition

To complete the revamp of CERN's Council Chamber, a new exhibition is being installed just in time for the June Council meetings.

Panels will showcase highlights of CERN's history, using some of the content prepared for the exhibitions marking 50 years of the PS, which were displayed in the main building last November.

The previous photo exhibition in the Council Chamber stopped at the 1970s. To avoid the new panels becoming quickly out of date, photos are grouped together around specific infrastructures, rather than following a classic time-line.

"We have put the focus on the accelerators – the world-class facilities that CERN has been offering researchers over the years, from the well-known large colliders to the lesser-known smaller facilities," says Emma Sanders, who worked on the content.

The new exhibition will be featured in a future issue of the Bulletin with photos and an interview with Fabienne Marcastel, designer of the exhibition.



CERN Bulletin

# "Draw me a physicist" exhibition opens

In a child's imagination, scientists are colourful, slightly eccentric figures with unusual powers. This is what emerges from the exhibition on the second floor of the Globe of Science and Innovation, opening on 12 June. "Draw me a physicist" brings together 160 drawings and definitions by children about the profession of research scientist.

The exhibition is the result of a six-month project by CERN and 20 primary school classes from the Pays de Gex and the communes of Meyrin, Satigny and Vernier. Some 400 schoolchildren aged 9 to 11 were asked in class to make drawings and come up with definitions of a physicist. Subsequently they came to CERN, visited one of the Laboratory's sites, and met and interviewed some physicists. They used the information garnered during the visit to make a second drawing and write a second definition. Each class or school then selected eight pairs of drawings for the exhibition in the Globe. All of the drawings will be displayed on the project's website at

[www.cern.ch/dessine-moi-un-physicien](http://www.cern.ch/dessine-moi-un-physicien)

(from 12 June) and also projected on the Globe's giant screen.

From 12 to 23 June, the Globe of Science and Innovation will be hosting the "Draw me a physicist" exhibition: over 160 drawings and definitions that illustrate how children see the world of research.

"It wasn't easy making the selection: the drawings are bursting with imagination and humour. But we had to make a choice, because there isn't enough space to display them all", explains Corinne Pralavorio, from CERN's Communication Group. "The picture of the world of research that we get from the drawings and definitions is full of surprises. It's a mirror, giving us a compelling glimpse into how scientists are perceived."

Two classes agreed to be photographed



and filmed throughout the project: a fourth-grade class from *Satigny-Village* in Switzerland and a fifth-grade class (CM2) from the *Bois d'Ornex* school in France. The exhibition will include four films and photographic material from these groups.

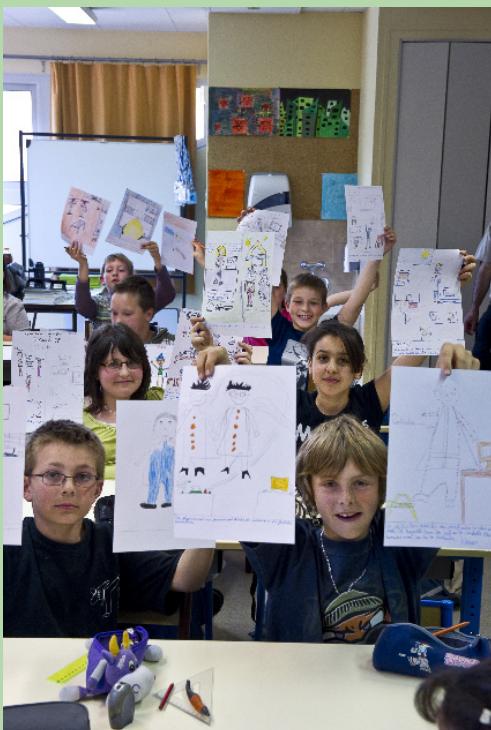
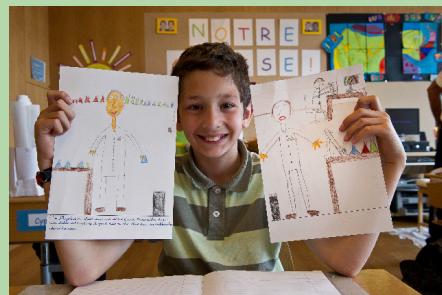
## "Draw me a physicist"

**12 to 23 June 2010  
Second floor of the Globe of Science and Innovation**

**Open to the public weekdays  
from 2 p.m. to 5 p.m. and Saturdays  
from 10 a.m. to 5 p.m. Closed Sundays  
and on Thursday 17 June and  
Monday 21 June.**

**Weekday mornings reserved for  
school visits.**

CERN Bulletin





## News from the Library

# The LHC Library to be merged with the Central Library

**N**ot everyone knows that CERN Scientific Information Service currently counts three physical libraries on site. The Central Library is located in Building 52 and there are two satellite libraries located respectively in building 30 (the LHC Library) and in building 864 on the Prevezzin site (the SPS Library). Moreover, the Legal Service Library is located in Building 60.

In the past, there have been at CERN up to 6 satellite libraries; they were essential at a time when information was only in paper form and having multiple copies of documents located in several places at CERN was useful to facilitate scientific research.

Today, this need is less critical as most of our resources are online.

That is why, following a SIPB (Scientific Information Policy Board) decision, the collections of the LHC Library will be merged this summer with the Central collection. This reorganization and centralization of resources will improve loan services. The SPS library, located on the Prévessin site, remains open. However although the number of satellite libraries is decreasing, Central Library still has a promising future. It is visited by many users, night and day and all year long, and visits increase significantly during summer.

So even if the Library is becoming more virtual, it remains a key physical space for research at CERN.

If you have suggestions for improving Library services or new acquisitions for the collections, please contact Jens.Vigen@cern.ch.

CERN Library

## Irène Jacob visits CERN

"La nuit des particules" (night of the particles) is an event open to the general public that is being organised for the evening of

Tuesday, 27 July, to accompany the 35th International Conference on High Energy Physics (ICHEP). ICHEP is a major highlight in every physicist's calendar, and this year's edition is being held in Paris from 22 to 28 July.

The short film will be screened during the evening, which will include a lecture and a show at the legendary Parisian cinema *Le Grand Rex*, with a colossal seating capacity of 2 700 spectators (not necessarily all physicists!). With such a venue at their disposal, the organisers naturally looked for a way to combine the two themes of science and cinema. They approached Irène Jacob with a proposal to produce a short film about CERN, and she took it to Pippo Delbono. "Our idea is to make a ten-minute film, which will be about sensations,



Pippo Delbono et Irène Jacob discussing their project.

French actress Irène Jacob, the daughter of physicist Maurice Jacob, visited the ATLAS and CMS control rooms on Monday 17 May together with Italian theatre actor-director Pippo Delbono, in search of inspiration for a short film. The film will be screened at the "nuit des particules" event accompanying this year's ICHEP.

not explanations," she explains. "We didn't want to create a documentary—after all, the evening will be attended by a great number of scientists—but rather a celebration."

With this in mind, the two film personalities came to CERN to get a feel for the place. Irène, of course, already knows CERN very well and has many fond memories of it. "For me, CERN is a very familiar place. The way some people remember their father's study when they were children, I remember blackboards covered in formulas. I was there during the LEP days, wearing the T-shirt that said 'LEP's do it!' I've always indirectly shared the physicists' enthusiasm for research," she recalls. These perceptions will be echoed in the film. "The important thing will be to bring the research to life, in a way that is appealing and personal," she explains. "The film will be very lyrical. I wrote the text together with Pippo, and will read it out accompanied by a guitar."

Shooting for the film is currently in progress. You won't want to miss it, if you have an opportunity to attend the *nuit des particules*.

For more information:

<http://www.ichep2010.fr/General-Public-Conf.html>

CERN Bulletin

## Back to the 80s

The fitness club is organizing a "Back to the 80s Party" in aid of the Haiti earthquake appeal on Saturday 26.06.2010 in the Pump Room.

**T**here's an 80s theme, so our pro DJ will be spinning 80s tunes (all tastes catered for), Morpho will be powering the visuals and the car club will be cooking-up a bbq in case you're peckish. Fancy dress 1980s style is welcome, though not obligatory and it kicks off just after 'music on the lawn' finishes at 20.30. Its open to anyone working at CERN, friends and family.

There's a limited number of tickets and it's entrance by ticket only, we are selling them on Thurs lunchtimes in R1 12.15 – 13.30 for 5CHF.

For more information contact

[fitness.club@cern.ch](mailto:fitness.club@cern.ch)





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.

## MODIFICATIONS TO THE RULES OF THE CERN HEALTH INSURANCE SCHEME

On the proposal of the CHIS Board, and following examination by the Standing Concertation Committee on 29 April 2010, the Director-General has approved the new Rules of the CERN Health Insurance Scheme, which will come into effect on 1 June 2010.

The Rules will shortly be available on the CHIS web site:

<https://hr-services.web.cern.ch/hr-services/Ben/chis/default.asp>

As the Rules had not been revised since 2003, it had become necessary to make cer-

tain changes in order to bring them into line with other texts (such as the Staff Rules and Regulations and Administrative Circulars) and to clarify some practices.

The new Rules do not introduce any new benefits or remove any existing ones.

### The following changes will affect all insured members:

|  | Description of change  | Articles in the new Rules |
|--|--|---------------------------|
| <b>Time limit for claiming reimbursement</b>                   | * The time period is measured from the invoice date (instead of the date of treatment).<br><br>* Reduction of the time limit for submitting a claim from two years to twelve months.<br><br>* Transitional arrangements until 31 May 2011 by which bills issued before 1 June 2010 may be submitted until 31 May 2011, provided that they do not date back more than two years at the time they are submitted. | VIII 1.01<br><br>XI 1.01  |
| <b>Territorial scope</b><br><br>(normal and reduced insurance) | * Cover is world-wide, instead of being limited to Europe.   | III 3.01<br><br>IV 3.01   |
| <b>Extended cover</b>  | * This category of cover has been discontinued in view of the redefinition of the territorial scope (see above).   | None                      |

### Other modifications will affect only some insured members:

|   | Description of change   | Articles in the new Rules                |
|---|---|--|
| <b>Voluntary membership</b><br><br>(normal and reduced insurance) | * The time limit for applying to join is now 30 days from the beginning of contract date (formerly 60 days).<br><br>* Automatic extension if the contract with CERN is extended.<br><br>* Possibility of obtaining or terminating membership within 30 days following changes in certain situations: e.g. change in the percentage of time worked at CERN, change to the mandatory cover provided by the employer, marriage or divorce. | VII 5.02<br><br>VII 5.03<br><br>VII 5.04 |
| <b>Illness and accident</b>                                       | * The texts have been brought into line with Administrative Circular 14 (Rev. 2), entitled "Protection of members of the personnel against the financial consequences of illness, accident and disability".<br><br>* The articles on excluded risks and special risks have been deleted.  | II 1.02<br><br>II 1.03<br><br>Chapter V  |
| <b>Indemnity in case of death</b>                                 | * Benefit limited to staff members and members of their families.   | III 4.07                                 |
| <b>Excessive rates</b>  | * New article to protect the Scheme against adverse effects of the free choice of provider by creating the possibility of limiting reimbursement in the event of excessive rates being charged.   | VII 4.07                                 |
| <b>Reserve Fund</b>   | * Creation of a Reserve Fund at the end of 2008, separate from the CERN accounts.   | IX 2.01                                  |

Finally, the wording of some of the articles has been modified to make them more understandable.

If you have any questions, you should write to [chis.info@cern.ch](mailto:chis.info@cern.ch).



Take note



Save lives  
Give your blood

**On Thursday 1<sup>st</sup> July 2010  
From 9.00 to 17.00**

### BLOOD DONATION

Organized by the Cantonal Hospital of Geneva

**CERN - Main building  
1<sup>st</sup> floor – Room : Pas Perdus**

**Number of donations during the last blood  
donation campaign:**

- **126 donors** in november 2009
- **152 donors** in March 2010

**Let's do better !!!**

**Give 30 minutes of your time  
to save lives...**





## Take note



## Academic training

### CONFERENCE FOR CERN PENSIONERS

Wednesday 9 June 2010 from 2.30 p.m. to 5.00 p.m.

Auditorium in Building 30 7-018

#### RESEARCH PROJECT

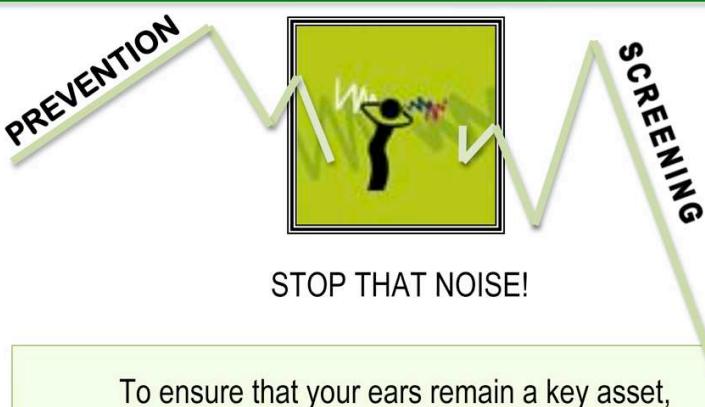
##### "OPTIMUM BRAIN AGEING"

- "Initial results of the study of the population of CERN pensioners"  
Dr François HERRMANN, Geneva
- "Technology and cognitive decline: prevention and compensation"  
Professor Alain FRANCO, Nice, Vice-President of the IAGG (International Association of Gerontology and Geriatrics)
- Discussion with the participants

Admission free.

The presentations will be in French.

*GS Department*



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

### CERN ACADEMIC TRAINING PROGRAMME 2010

#### LECTURE SERIES

14, 15, 16 and 17 June 2010

11:00-12:00 - Bldg. 1-1-025

#### Statistics and Discoveries at the LHC

by Dr. Glen Cowan / Royal Holloway College, University of London

The lectures will give an introduction to statistics as applied in particle physics and will provide all the necessary basics for data analysis at the LHC. Special emphasis will be placed on the problems and questions that arise when searching for new phenomena, including p-values, discovery significance, limit setting procedures, treatment of small signals in the presence of large backgrounds. Specific issues that will be addressed include the advantages and drawbacks of different statistical test procedures (cut-based, likelihood-ratio, etc.), the look-elsewhere effect and treatment of systematic uncertainties.

Organiser: Maureen Prola-Tessaur/PH-EDU

## CERN TECHNICAL TRAINING: AVAILABLE PLACES IN FORTHCOMING COURSES

The following course sessions are scheduled in the framework of the 2010 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

|   |           |           |         |
|---|-----------|-----------|---------|
| Certification: Ingénieur en Sécurité Fonctionnelle          | 07-JUN-10 | 10-JUN-10 | French  |
| Core Spring   | 15-JUN-10 | 18-JUN-10 | English |
| Emacs - way beyond Text Editing                             | 16-JUL-10 | 16-JUL-10 | English |
| ITIL Foundations (version 3) EXAMINATION                    | 22-JUN-10 | 22-JUN-10 | English |
| JAVA - Level 2  | 05-JUL-10 | 08-JUL-10 | French  |
| JCOP - Finite State Machines in the JCOP Framework          | 22-JUN-10 | 24-JUN-10 | English |
| Le Langage C (ANSI et C99)                                  | 24-JUN-10 | 02-JUL-10 | English |
| Oracle - Programming with PL/SQL                            | 28-JUN-10 | 30-JUN-10 | English |
| Oracle Certified Professional                               | 07-JUN-10 | 11-JUN-10 | English |
| Project Development using Python                            | 29-JUN-10 | 02-JUL-10 | English |
| Python: Advanced Hands-On                                   | 08-JUN-10 | 11-JUN-10 | English |
| Secure coding for Java                                      | 15-JUN-10 | 15-JUN-10 | English |
| Secure coding for Web Applications and Web Services         | 14-JUN-10 | 14-JUN-10 | English |
| Web 2.0 development with AJAX                               | 28-JUN-10 | 30-JUN-10 | English |
| Web Applications with Oracle Application Express (APEX) 3.2 | 23-JUN-10 | 25-JUN-10 | English |

### Electronic design

|   |           |           |         |
|---|-----------|-----------|---------|
| CAO = Allegro Design Entry HDL Front-to-Back Flow v16.3 | 28-JUN-10 | 30-JUN-10 | French  |
| LabVIEW Communication with RADE applications            | 01-JUL-10 | 02-JUL-10 | English |
| LabVIEW Core II   | 10-JUN-10 | 11-JUN-10 | English |
| LabVIEW Data Acquisition and Signal Conditioning Course | 05-JUL-10 | 07-JUL-10 | French  |
| Managing Software Engineering in LabVIEW                | 08-JUL-10 | 09-JUL-10 | English |
| Siemens - Simatic Net Network                           | 17-JUN-10 | 18-JUN-10 | French  |
| Siemens - STEP7 : level 1                               | 22-JUN-10 | 25-JUN-10 | English |

### Mechanical design

|   |           |           |        |
|---|-----------|-----------|--------|
| AutoCAD Electrical 2010                     | 16-JUN-10 | 06-JUL-10 | French |
| AutoCAD Mechanical 2010                     | 10-JUN-10 | 11-JUN-10 | French |
| CATIA V5 -- Drafting Advanced               | 16-JUN-10 | 17-JUN-10 | French |
| CATIA V5 – Surfacique 1                     | 18-JUN-10 | 25-JUN-10 | French |
| Schneider: Automate Modicon Premium         | 28-JUN-10 | 30-JUN-10 | French |
| Vacuum for accelerators, intermediate level | 14-JUN-10 | 18-JUN-10 | French |

### Office software

|   |           |           |                     |
|---|-----------|-----------|---------------------|
| CERN EDMS for Engineers   | 09-JUN-10 | 09-JUN-10 | English             |
| CERN EDMS for Local Administrators  | 22-JUN-10 | 23-JUN-10 | French              |
| Dreamweaver CS3 - Level 2   | 17-JUN-10 | 18-JUN-10 | French              |
| EXCEL 2007 (Short Course I) - HowTo... Work with formulae, Link cells, worksheets and workbooks |           |           | 22-JUN-10 22-JUN-10 |
| Bilingual   |           |           |                     |
| EXCEL 2007 (Short Course II) - HowTo... Format your worksheet for printing                      | 28-JUN-10 | 28-JUN-10 | Bilingual           |
| EXCEL 2007 (Short Course III) - HowTo... Pivot tables   | 28-JUN-10 | 28-JUN-10 | Bilingual           |
| Get the most of Office 2007!  | 21-JUN-10 | 21-JUN-10 | English             |
| Get the most of Office 2007!  | 23-JUN-10 | 23-JUN-10 | French              |
| Indico - Meeting Organization   | 07-JUN-10 | 07-JUN-10 | French              |
| Individual Coaching   | 21-JUN-10 | 21-JUN-10 | Bilingual           |
| OUTLOOK 2007 (Short Course II) - Calendar, Tasks and Notes                                      | 22-JUN-10 | 22-JUN-10 | Bilingual           |
| Sharepoint Collaboration Workspace  | 14-JUN-10 | 15-JUN-10 | French              |
| Sharepoint Designer (Frontpage) - Level 2   | 10-JUN-10 | 11-JUN-10 | French              |



# Technical training

Marie-Laure LECOQ 74924  
ENSEIGNEMENT TECHNIQUE  
TECHNICAL TRAINING  
[technical.training@cern.ch](mailto:technical.training@cern.ch)

## Special course

Egroups training

16-JUN-10 16-JUN-10 French

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.

## WINDOWS 7 IS SUPPORTED AT CERN

The new version of the Windows operating system - Windows 7 - is now officially supported at CERN. Windows 7 32-bit is now the default operating system for the new computers at CERN.

### What's new in Windows 7

Users of Windows XP will find many new features and options. Users of Windows Vista will feel very familiar with one major difference: higher performance and better responsiveness of the operating system. Other enhancements include: refined Aero desktop that makes it easier to navigate between your different application windows; new snapping windows that allows user to resize a window simply by dragging it to the edge of the screen and "pin" that allows grouping and arranging often accessed applications on the taskbar.

Windows 7 introduces the new concept of libraries – containers for user files that have links to different local or network folders. By default, users can see four libraries: Documents, Music, Pictures and Videos. These libraries point to the corresponding user folders on the DFS. Users can include additional folders in these libraries as well as create complete new libraries for different user content.

From the point of view of the CERN Windows infrastructure, everything remains the same, so users will feel very much at home. The applications are still managed with CMF and users' home folders continue to be stored on DFS (Distributed File System – system for saving files on network file servers). Also, the same printing infrastructure is available and the same way of distributing monthly patches will be applied.

Complete printable documentation for NICE Windows 7 is now also available! (Printable NICE Windows 7 Documentation at:

[https://cern.ch/winservices/  
Help/?fdid=5](https://cern.ch/winservices/Help/?fdid=5)

### Training offer

In order to allow a smooth transition to Windows 7, training tutorials for Windows 7 and Office 2007 have been prepared by the Windows Desktop Services team in cooperation with CERN Technical Training. These sessions will take place in June. They will be given in English and French and they are now available in the HR training catalogue. The tutorials are free of charge but registration is required. We encourage users to sign up and attend these sessions so that they can get the most out of the new functionalities of Windows 7 and Office 2007.

The following training tutorials are scheduled:

- "Working with Windows 7 at CERN", 1 June 2010 at 15:30 - 16:30, (English)
- "Travailler avec Windows 7 au CERN", 3 June 2010 at 10:30 - 11:30, (Français)
- "Get the most of Office 2007!", 21 June 2010 at 15:30 - 16:30, (English)
- "Profitez bien de Office 2007!", 23 June 2010 at 15:30 - 16:30, (Français)

More information about the IT3T - IT Technical Training Tutorials 2010 can be found at:

[https://cern.ch/winservices/  
Help/?kbid=170115](https://cern.ch/winservices/Help/?kbid=170115)

IT Department

## OFFICE SOFTWARE INDIVIDUAL COACHING

If one or several particular topics cause you sleepless nights, you can get the help of our trainer who will come to your workplace for a multiple of 1-hour slots. All fields in which our trainer can help are detailed in the course description in our training catalogue (Microsoft Office software, Adobe applications, i-applications etc.)

Please discover these new courses in our catalogue!

<http://cta.cern.ch/cta2/f?p=110:9>

Technical Training Service  
[Technical.Training@cern.ch](mailto:Technical.Training@cern.ch)  
Tel 74924



# Seminars

## MONDAY 7 JUNE

### CERN HEAVY ION FORUM

10:00 - TH Auditorium, Bldg. 4

### **Heavy-Ion Forum on Parton Distribution Functions**

G. WATT , H. PAUKKUNEN / UNIVERSIDADE DE SANTIAGO DE COMPOSTELA, I. SCHIENBEIN / UNIVERSITE JOSEPH FOURIER

### TH JOURNAL CLUB ON STRING THEORY

14:00 - Bldg. 1-1-025

### **Physics of exotic branes**

P. GONZALEZ CAMARA

## TUESDAY 8 JUNE

### ACCELERATOR PHYSICS (CAS)

09:00 - BE Auditorium Prévessin, Bldg. 864-1-D02

### **Specialized accelerator physics school - Radiation To Electronics (R2E)**

### CERN JOINT EP/PP SEMINARS

11:00 - Bldg. 60-6-015

### **Low-Scale Technicolor at the LHC**

K. LANE / BOSTON UNIVERSITY

### TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

### **An introduction to quantum sheaf cohomology** - E. SHARPE / VIRGINIA TECH.

### ACCELERATOR PHYSICS (CAS)

18:00 - BE Auditorium Prévessin, Bldg. 864-1-D02

### **RF for Accelerators**

D. BRANDT / CERN, S. PAPE MOLLER / AARHUS UNIV.

## WEDNESDAY 9 JUNE

### TH COSMO COFFEE

11:00 - Bldg. 1-1-025

### **Split seesaw mechanism and dark matter** - TAKAHASHI,F. / ITPMU

## THURSDAY 10 JUNE

### INDUCTION PROGRAMME

08:30 - BLDG. 40-S2-D01 - SALLE DIRAC

### **2nd Part** - C. GRANIER, M. SGOURAKI / CERN

## THURSDAY 10 JUNE

### COMPUTING SEMINAR

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

### **Technical Computing - Improving Our Ability to Understand the World** - B. HILF / MICROSOFT CORP.

### TH BSM FORUM

14:00 - Bldg. 1-1-025

### TBA

A. KATZ / TECHNION- ISRAEL INSTITUTE OF TECHNOLOGY

## FRIDAY 11 JUNE

### LHC SEMINAR

11:00 - Main Auditorium, Bldg. 500

### **L'Aventure du LHC**

LYN EVANS / CERN

## MONDAY 14 JUNE

### COMPUTING SEMINAR

10:00 - Bldg. 513-1-024

### **ORACLE Java / Weblogic**

M. PRITCHARD / ORACLE CORP.

### ACADEMIC TRAINING LECTURE

### REGULAR PROGRAMME

11:00 - Bldg. 1-1-025

### **Statistics (1/4)**

G. COWAN / ROYAL HOLLOWAY COLLEGE, LONDON UNIV.

### TH JOURNAL CLUB ON STRING THEORY

14:00 - Bldg. 1-1-025

### **TBA (NOTE SPECIAL DAY)**

J. MALDACENA

## TUESDAY 15 JUNE

### ACADEMIC TRAINING LECTURE

### REGULAR PROGRAMME

11:00 - Bldg. 1-1-025

### **Statistics (2/4)**

G. COWAN / ROYAL HOLLOWAY COLLEGE, LONDON UNIV.

### TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

### **CFT, fusion graphs for Lie groups at level k and quantum symmetries**

R. COQUERAUX / CPT MARSEILLE

## TUESDAY 15 JUNE

### COLLOQUIUM ON THE OCCASION OF LYN EVANS' RETIREMENT

15:00 - Main Auditorium, Bldg. 500

### **The Large Hadron Collider - from Inception to Operation**

## WEDNESDAY 16 JUNE

### ACADEMIC TRAINING LECTURE

### REGULAR PROGRAMME

11:00 - Bldg. 1-1-025

### **Statistics (3/4)**

G. COWAN / ROYAL HOLLOWAY COLLEGE, LONDON UNIV.

### TH THEORETICAL SEMINAR

14:00 - TH Auditorium, Bldg. 4

### **The S-MSSM: the singlet saves the day** - A. DELGADO / UNIVERSITY OF NOTRE DAME

## THURSDAY 17 JUNE

### TH BSM FORUM

11:00 - Bldg. 1-1-025

### **TBA (NOTE SPECIAL TIME)**

A. VICHI / INSTITUT DE PHYSIQUE THEORIQUE-EPFL

### ACADEMIC TRAINING LECTURE

### REGULAR PROGRAMME

11:00 - Bldg. 1-1-025

### **Statistics (4/4)**

G. COWAN / ROYAL HOLLOWAY COLLEGE, LONDON UNIV.

### TH STRING THEORY SEMINAR (note special day)

14:00 - TH Auditorium, Bldg. 4

### **Dynamics of warp and conformal factor in string compactification**

M. DOUGLAS / SIMONS CENTER / RUTGERS/ IHES

### CERN COLLOQUIUM

16:30 - Main Auditorium, Bldg. 500

### **The search for permanent electric dipole moments, in particular for the one of the neutron** - K. KIRCH

## FRIDAY 18 JUNE

### TECHNICAL SEMINAR

09:00 - BE Auditorium Meyrin, Bldg. 6-2-024

### **Forum Utilisateurs CATIA au CERN**

J.-P. CORSO / CERN