



CERN Bulletin

Nos 49 & 50 – 30 November & 7 December 2009

A magnificent team work



This shot of delighted operators with their eyes glued to screens showing the first circulating beams in the LHC was taken by the CERN Photolab and has been published in newspapers round the world.

The LHC is making the headlines of the world press but the real emotion these days can be seen in the eyes of the machine operators in the CERN Control Centre (CCC) and has spread all around CERN. Of course, this is just the beginning and the LHC will have to accomplish more challenging tasks but these first moments undoubtedly were very intense, partly due to the fact that last year's accident is still fresh in our memories.

Hundreds of people have contributed to be where we are today: the operators of the smaller accelerators (see Bulletin No. 15-16-17/2009), the teams involved in the repairs of the damages provoked by the accident (see Bulletin No. 28-29), those involved in the installation and commissioning of the new quench protection system (see Bulletin No. 22-23), the people involved in

During the last weekend and this week, the LHC has accomplished many tasks: it first circulated two beams in opposite directions, made them collide in the heart of the four giant detectors and then slightly increased their energy and finally. Virtual champagne to the hundreds of people working nights and days to repair the machine, prepare it for new start-up and finally operate it.

the cryogenics (see Bulletin No. 30-31) and finally the operators to whom the machine was handed over only about one week ago. Now, all the efforts made to design and build one of the world's most complex scientific instruments are starting to pay off.

The video, photo and communication teams were in the CCC to record these historical moments and make them available to CERNois, the Press, and the general public. Here follows a selection of videos and photos:

<http://cdsweb.cern.ch/search?f=keywor&d&p=lhcfirstphysics&ln=en>

In page 4, we copy hereafter some of the messages received by our Management and by the Communication Group. Enjoy it!

CERN Bulletin



A word from Steve Myers



Seven remarkable days

This has been a truly remarkable seven days for CERN. Things have moved so fast that it has sometimes been hard to separate fact from fiction – all the more so since facts have often seemed too good to be true.

It's been a week of many firsts. Monday was the first time we've had two captured beams in the LHC. It's the first time the LHC has functioned as a particle accelerator, boosting

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A word from Steve Myers

(Continued from page 1)

Seven remarkable days

particles to the highest beam energy so far achieved at CERN. And it's been a week in which we've seen the highest energy proton-proton collisions ever produced at CERN: our last hadron collider, the SPS was a proton-antiproton collider, a technically simpler machine than the LHC. This week's successes are all the more remarkable precisely because of the complexity of the LHC. Unlike the SPS collider, it is two accelerators not one, making the job of commissioning nearly twice as difficult.

I'd like to express my heartfelt thanks and congratulations to all those who have done such a great job in bringing the LHC to life this week, and to all the unsung heroes who worked solidly for 14 months to bring us from the dark days of late September last year, to where we are today. It has been a herculean effort, with no fewer than five distinct phases: repair; consolidation; hardware commissioning; preparing for beam; and finally operation. All deserve equal merit.

The final phase has been highly visible, and widely reported around the world, but without phases one to four, it would not have been possible. One of the remarkable successes of the LHC start-up this year has been the cryogenic system. With all the excitement of beam this week, it would be easy to overlook the fact that the LHC has been stably cold, almost without

a glitch, since 8 October. That alone marks tremendous progress since last year.

The new magnet protection systems have also been a revelation. The faulty connection that failed on 19 September had a resistance of 220 nano-Ohms. Today, we can measure the splice resistances and monitor them continuously to less than one nano-Ohm. That is reassuring to say the very least.

To accomplish all this, teams from CERN rolled up their sleeves and worked tirelessly to get the job done. They were joined by people, whose help was spontaneously offered, from partner labs and institutes around the world. My sincere thanks go to all of them.

While the eyes of the world are again on the LHC, there are a few more groups of people that I'd personally like to acknowledge. In the CERN control centre, there are four islands. One is for the LHC, the others control and monitor the technical infrastructure of CERN, the PS complex and the SPS. For the LHC to work, all of them have to be working smoothly, and they were. In the 50th anniversary week of the PS, that is no mean achievement. The injector complex even managed to take lead ions all the way into the LHC at the first attempt, boding well for the end of the 2010 run. And in a

separate control room at point 4, the 'RF guys' put in a sterling effort to capture beams from the word go, and to accelerate at the first attempt.

Last but not least then there are all the other services that have to come together to make things work: the GS department for access and safety systems; HR and FP for showing great flexibility in time of need; and SC for diligently ensuring that all safety aspects are fully covered, to name but three. All in all, the LHC is a magnificent team effort.

It's been a great week, but it's important to keep a sense of perspective. The achievements of this week are fantastic, and those that went before deserve equally as much recognition. However, we have to remember that there is still much work to do before the LHC physics programme begins. From now to the end of the year, we have some intense systems commissioning ahead of us so we can deliver good intensity beams to the experiments for calibration purposes. Then we can look forward to taking the energy up in 2010 and starting the real physics. This has been a great beginning, but the best is yet to come.

Steve Myers

The Proton Synchrotron, going strong at fifty years

Fifty years ago the PS, the first strong-focusing proton synchrotron using alternating gradient technology, first began to circulate beams at an unprecedented level of energy.

Over the years, a complex of linear and circular accelerators and storage rings grew around the PS. In the mid-1990s the complex was at its peak, with eight accelerators: Linac 2 and Linac 3, for protons and heavy ions; the Antiproton Collector and Antiproton Accumulator (AC and AA); the Low-Energy Antiproton Ring (LEAR); the Linear Injector for LEP (LIL); the Electron and Positron Accumulator (EPA); and the PS Booster (PSB). The latter made it possible to increase the PS's intensity to its current record of 3.15×10^{13} protons per pulse, more than three thousand times as many as at start-up.

In the course of its long career, the Proton Synchrotron has, notwithstanding its name, also been used to accelerate a broad range of other particles, including both light ions (deuterons, alpha particles, oxygen and sulphur) and heavy ions (indium and lead), in addition to antiprotons for the ISR and the SPS, and leptons for LEP. From 1983 to 1996, the PS worked as an antiproton decelerator

It was on the evening of 24 November 1959 that an incredulous Hildred Blewett, on detachment to CERN from the Brookhaven laboratory, exclaimed "Yes! We're through transition!" The first beam of ten billion protons had not only broken through the 5.2 GeV barrier but gone on all the way to 24 GeV, the machine's top energy at that time.

for LEAR, which since then has been converted into the heavy-ion ring LEIR.

Today, the PS continues to play a vital role in the distribution of proton beams to the SPS and the East Area and in the production of antiprotons for the AD and neutrons for nTOF. It is also an essential part of the LHC injector chain for protons and heavy ions. Among its other duties, the PS is responsible for correctly shaping and spacing the bunches that go to the LHC at the end of the injector chain.

Over the last fifty years the PS has not only provided particles for the physics community but also given rise to numerous innovations in accelerator technology, including extraction techniques (single-turn extraction by means of kicker magnets, slow extraction by means of sextupole resonance excitation, continuous transfer in five turns, and, more recently, the multi-turn extraction scheme being put in place in 2009), tomographic reconstruction of the longitudinal phase space, the use of a flying wire to measure emittance, and countless feats

of RF gymnastics. The importance of pulse-to-pulse modulation must be emphasised at this point. This technique was used from the end of the 1960s to provide a wide range of different users with a series of beams whose energies and intensities could vary from one cycle to the next.

Despite its long and distinguished career, the PS is nowhere near ready for retirement. In 2013 the machine will be equipped with a new proton pre-injector called Linac 4. It is not until the 2020s that the PS is expected to give way to its successor, dubbed PS2. CERN's Proton Synchrotron is thus in line for at least ten more years of service. Its long life is a tribute to the care with which the original designers built this machine, which has withstood the test of time, and to the care which their successors lavished on the upkeep and modernisation of its components. Happy birthday, PS, and many happy returns!

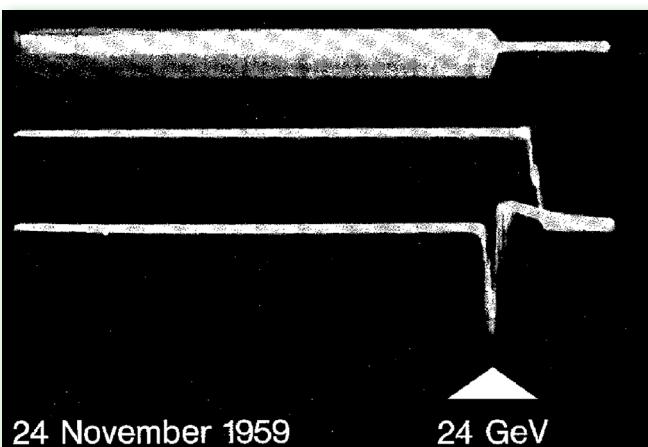
Django Manglunki

Further reading: October issue of the CERN Courier with articles about the PS Anniversary

<http://cerncourier.com/cws/article/cern/40742>

A symposium to commemorate many significant events that have marked high-energy physics in the past 50 years will be held at CERN on 3-4 December 2009:

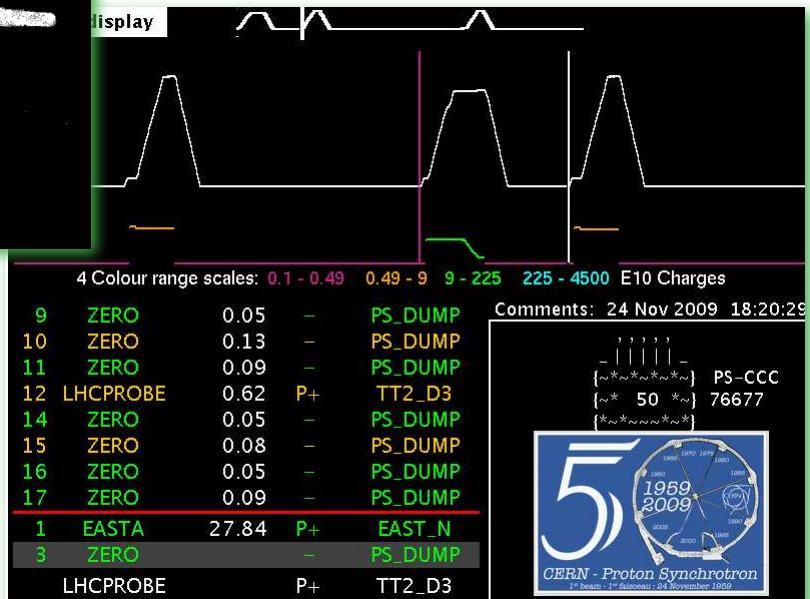
<http://ps-50.web.cern.ch/ps-50/>



24 November 1959

24 GeV

These first oscilloscope traces (from top to bottom: beam intensity, terminal voltage of main magnet, and timing signal marking the end of acceleration) show how a proton beam was accelerated to 24 GeV, making the PS the most powerful particle accelerator in the world at the time. (Photo CERN Courier, no. 11 vol.9, Nov. 1969)



An operational screenshot from the PS, taken on its 50th anniversary. The three white peaks depict different phases (cycles) of the PS's operation. In the first and third cycle, the PS is producing a very low-intensity beam for LHC commissioning. In the second cycle, protons are being spilled over for use in the East Area.

Messages de félicitations reçus par la Direction du CERN et le groupe Communication

Here follows a selection of messages by various laboratories and personalities to congratulate CERN for its recent achievements.

Je suis heureux d'adresser à l'équipe qui vient de mettre en marche le LHC les félicitations du dernier survivant des fondateurs du CERN.

François de Rose

Dear Rolf,
from all your friends and colleagues at Fermilab: our heartiest congratulations on the first collisions at LHC!! We are delighted with the rapid progress.

Pier Oddone, FERMILAB Director

As many thousand people all around the world, I have been following the LHC being turned back on! It is really great to see the machine coming on so smoothly up to now. I keep my fingers crossed and wish you all the best.
Please send my congratulations to all the people involved (a huge task indeed!)

Guy Wormser, Directeur du Laboratoire de l'Accélérateur Linéaire d'Orsay

Dear Rolf,
It is our great pleasure to hear that the commissioning of the LHC has re-started and the first collisions at the injection energy took place. On the occasion of my CERN visit last Tuesday, I visited the accelerator control room as well as the ATLAS control room. I was deeply impressed by the people there working hard towards the first collisions in the near future. I imagine that you have had a hard time after the incident last September. You and your colleagues have managed to recover the machine in a short period of time, implementing the much safer quench protection system. I have no doubt that your leadership has encouraged the people who were working hard for the recovery and consolidation of the LHC. We congratulate you and your staffs on the achievement and we wish you all the best as you take further steps towards the higher energy collisions, which the worldwide physics community is waiting for.

Atsuto Suzuki, Director-General of KEK



The CCC during the first moments of operation of the LHC.

Lieber Herr Heuer,
ich freue mich sehr ueber den guten Start des LHC und gratuliere Ihnen und dem ganzen CERN herzlich zu diesem wunderbaren.

Erfolg Volker Soergel, Professor Emeritus at the University of Heidelberg, former Research Director at CERN (1979-1981)



Hats off in the CCC for the first beams in the LHC (Friday 20 November 2009).

Lieber Herr Heuer
Ich freue mich mit Ihnen und allen Freunden des CERN über den heutigen denkwürdigen Tag, der in die Geschichte der Organisation eingeht. Herzliche Gratulation und für die kommenden Tage, Wochen und Monate weiterhin viel Glück und Erfolg!

Martin Steinacher,
Chair of CERN Finance Committee

Siete stati grandi!!!
My sincere congratulations,

Federico Ferrini,
Italian delegate to Finance Committee

Dear Rolf,
This sounds really great! Congratulations to you and to all CERN staff!
Looking forward to this formidable adventure,

Michel Spiro, French Council delegate

Dear Professor Heuer,
We were very happy receiving you information that LHC is successfully running again and realizing first collision data. Please accept our congratulation together with your staff.

Jiri Niederle, Czech Council delegate

Dear Steve,
Congratulations! We congratulate beams once again circulating in LHC. This is a milestone towards full success of the LHC. We are looking forward to hearing your further progress.

Chuang Zhang, Project Leader, Beijing Electron Positron Collider II

Dear Rolf Steve Sergio
Congrats so far - quite a day for the LHC - good luck. I have neighbours who are twittering and they said to pass on their encouragement and excitement. So good luck from many

John Dainton, Founding Director and Chief Scientist, Crockford Institute

Dear Prof. Heuer,
Let me congratulate you and the team of scientists, engineers and technicians on recent successes in starting LHC with the proton beams colliding. We anxiously wait, as does the rest of the world, to learn more of your endeavours on this ongoing mega search for basic constituents of matter.

Ansar Parvez, Chairman of Pakistan Atomic Energy Commission

Hi James,
I would like to congratulate you and your team for the fine way you are handling the present public and press relations. I am full of admiration. But have you ever thought of using the fact that yesterday's collisions were already the highest energy p-p collisions ever observed at a collider? I am of course referring to the fact that all comparable colliders are studying proton-antiproton collisions! While it may be obvious to particle physicists that that is rigorously the same thing, I cannot believe that the general public understand it like that. In addition, I have always felt that more credit should be given to CERN for the fact that the LHC consists of TWO 27 km rings far harder to get working than a single ring!!!! Keep up the good work.

Keith Potter
School of Physics and Astronomy,
The University of Manchester

Dear Rolf,
Dear Thorsten,
Dear Colleagues,
We are delighted to see this fantastic re-start of LHC. Congratulations to all who contributed, in particular to the CERN staff and management. In the name of the Polish HEP community.

Michał Turała,
Polish Academy of Science,
former ECP Division Leader at CERN

EIROForum science goes in schools

Inspiring teachers to motivate students: the formula is well-known at CERN. Here, more than 20 schools for science teachers are organized every year. Some of them see the participation of teachers from all over Europe, others are organized for national groups.

The first EIROForum school was held at CERN last week. In about four days, 35 teachers from 15 countries could get a flavour of the science done in four of the seven organizations participating in EIROForum. This was a chance for them to feel part of the top-level European scientific research.

The successful experience of CERN served as a model to the other six international organizations that are members of EIROForum (read box). "The title of this first common school is 'The evolution of the Universe'", explains Rolf Landua, head of the CERN Education group and organizer of the school. "The programme of lectures involves scientists from CERN, ESA, ESO and EFDA because the research done in these four organizations focuses on finding replies to this common question".

This is just the first of the many teacher schools that EIROForum plan to organize. "Our goal is to organize one common school every year", says Landua. "The next one will be held at ESRF in Grenoble and will focus on life science. In particular, it will involve scientists from ESRF, ILL

and EMBL, the organizations that are not directly involved in the programme of this first school."

The key point of these courses is to show the teachers what we know about the beginning and the evolution of the Universe, but also - and that may be even more important - how this knowledge was obtained. The lectures by scientists from different fields of physics demonstrated how the scientific disciplines work together to unravel Nature's mysteries. "The lectures were very interesting and they will be very valuable in my teaching", says Jens Nielsen from Norway. And Svejina Dimitrova from Bulgaria and Dana Jancinova from Slovakia add: "We need to update our knowledge regularly. Such courses are very useful to us and we will be able to bring our enthusiasm to students".

The model has clearly worked this time too. The hope of the organizers is now that "happy teachers can make happy students", as Landua often repeats.

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Did you know?

EIROForum groups together seven scientific intergovernmental organizations: CERN, EFDA, EMBL, ESA, ESO, ESRF, ILL. Its mission is to combine the resources, facilities and expertise of its member organisations to support European science in reaching its full potential. EIROforum also simplifies and facilitates interactions with the European Commission and other organs of the European Union, national governments, industry, science teachers, students and journalists.



The 35 teachers participating in the first EIROForum school organized at CERN.

Maths and physics, a love story

In Denis Guedj's plays, the number One is a self-absorbed character. Zero is not to be

underestimated, and the Line Segment wants the Curve to straighten out. In his novels, mathematical entities come to life—and turn out to have exciting stories to tell. Denis Guedj is a mathematician and professor of the history of science and epistemology at the University of Paris VIII; over the years he has also indulged a personal passion for bringing maths to the stage. His novels and plays reach a broad public. Among his notable successes is a crime thriller called "The Parrot's Theorem", which has been translated into 20 languages. His work's popularity owes much to the author's refusal to be didactic. "If it works, it's because I don't try to teach maths," he explains. "I tell stories whose characters happen to be mathematical entities. But the story is always the main thing."

At last week's "Fête de la science", Denis Guedj kept spectators enthralled with his play "One zero show", put on at the Globe of

Denis Guedj brings one of his plays to CERN. The writer and mathematician is working on a new novel in which LHC research figures prominently.

Science and Innovation. The show, created in 1994, features the numbers one and zero as they engage in a power struggle, using mathematical operations as weapons.

Denis Guedj's decision to stage the play at CERN comes from a long-standing relationship between the playwright and the Laboratory. During the LEP era, he wrote a screenplay set at CERN. The project never came to fruition. "But three years ago I decided that it was time once again to immerse myself in the research being done at CERN, and to write a novel about the LHC," he explains. The novel, entitled "Collisions" in French, tells the story of a collision at CERN—so far, no surprises. But it's not quite what one might expect. It's the story of the chance encounter of a man and a woman, and through them, the encounter of two worlds. CERN isn't just a backdrop to the story. As his readers have come to expect, Denis Guedj masterfully weaves some of

the great enigmas of physics into the plot. "Ironically, this isn't particularly easy to do with physics," he emphasises. "You can't get more dramatic than a meeting between matter and antimatter. Telling the story of such an encounter would be trivial, the challenge is to give the story suspense." The author is currently putting the finishing touches to his novel, which is to be published next April.

In the meantime, a different question plagues CERN's "communicators". Among members of the general public, mathematics and fundamental physics are often perceived as esoteric disciplines that have little social relevance. Accordingly, the question of their usefulness in a world of short-term profit is often raised. "We have to fight against the ideology of short-term utility," stresses Denis Guedj. "You can't reduce human beings to a collection of bare needs. When I'm asked what mathematics are good for, I say, first of all, that maths are my living. And then I ask, what is love good for?"

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The 20th Hadron Collider Physics Symposium in Evian

The 20th Hadron Collider Physics Symposium took place in Evian, on the shores of Lake Geneva, from 16-20 November 2009, some 17 years after the historic ECFA-CERN Evian meeting in March 1992 when Expressions of Interest for LHC detectors were presented for the first time. The 2009 event was organized jointly by CERN and the French high-energy physics community (CNRS-IN2P3 and CEA-IRFU). More than 170 people registered for this Symposium.

This year's Symposium was held at an important time for both the Tevatron and the LHC. It stimulated the completion of analyses for a significant Tevatron data sample, and it allowed an in-depth review of the readiness of the LHC and its experiments just before first collisions. The programme included sessions on top-quark and electro-weak physics, QCD, B physics, new phenomena, electro-weak symmetry breaking, heavy ions, and the status of the Tevatron and LHC machines and their experiments. Many new Tevatron results were presented for the first time, including an update on the Higgs search. The sessions were well-motivated by excellent theoretical overviews. The Symposium ended with an outlook on

The Hadron Collider Physics Symposium series has been a major forum for presentations of physics at the Tevatron over the past two decades. The merger of the former Topical Conference on Hadron Collider Physics with the LHC Symposium in 2005 brought together the Tevatron and LHC communities in a single forum.

future developments for the Tevatron and the LHC as well as physics road-maps and plans for the regions of Asia, Europe and North America.

The 21st Hadron Collider Symposium will be held in Toronto, Canada from 23-27 August 2010 and the high-energy physics community is looking forward to results

from the first physics runs at the LHC and the latest results from the Tevatron. Future events are also planned for Paris in 2011 and Japan in 2012.

The Organizing Committee would like to thank all the participants for their important contributions to the Symposium as well as the sponsors – CERN, IRFU/CEA, IN2P3/CNRS, the Rhône-Alps region and the Universities of Grenoble and Savoie. The town of Evian also kindly participated in the organization.

Ludwik Dobrzynski and Emmanuel Tsesmelis



Snapshots of CERN

The exhibition "Accelerating Nobels" attracted over 600'000 visitors during Genoa's 7th edition Science Festival. It showed science photographer Volker Steger's 21 portraits of physics

Nobels holding their own impromptu drawing of their best discovery.

"The theme of the festival was 'The Future.' The exhibition showed the long history of particle physics discoveries at CERN which all lead to what the LHC is going to find, including probably more Nobels," explained Paola Catapano, CERN Communications Group. "People are impressed by Nobel Laureates but often don't understand what they do. These original portraits of Nobels with their drawings encouraged them to read more about the work carried out in particle physics at CERN."

Amid high media interest, La Repubblica newspaper featured "Nobel Lampi di Genio" on the front page of their festival report and a Rai television documentary showed "Accelerating Nobels" as one of the main attractions of the festival. Its central location in the Palazzo Ducale next to the festival's ticket office also ensured that most visitors saw the exhibition, which was sponsored by ASG Superconductors, one of the three companies to build the LHC dipoles located in Genoa. The portraits are now proposed to make a "Chemin des Nobels" at CERN

Art was the language of communication between science and the thousands of visitors attending CERN's two photographic exhibitions in Italy and Spain in October. The artistic images of CERN's Nobel Prize winners, Large Hadron Collider (LHC) machinery and detectors raised peoples' curiosity and understanding of particle physics.

between the Globe and the site of the UA1; the experiment that found the W and Z bosons and for which Carlo Rubbia and Simon Van der Meer won a Nobel Prize.

A second exhibition showing CERN through the lens of science photographer Peter Ginter attracted 6'500 visitors per day outside of Valencia's City of Arts and Science (Ciudad de las Artes y de las Ciencias). The 54 artistic photographs, which were previously displayed along Geneva's Quai Wilson in 2008, capture the great human and scientific adventure of the construction of the LHC and its experiments.

"The main objective is to bring the LHC to the general public to increase their interest in science, and in particular, physics," says Maria Jose Gracia Vidal, of Centro Nacional de Física de Partículas, Astropartículas y Nuclear (CPAN), the organising institute. "CPAN wants to inform the public about the participation of the Spanish scientists in this project so that they can understand



CERN through the lens of Peter Ginter outside of Valencia's City of Arts and Science

and appreciate the economical investment given to science. We expect more interest for physics and to attract more people to study this matter at university."

Currently, the exhibition and its accompanying guided visits and conferences are on a ten-city tour around Spain until February 2010.

Rebecca Learm



The exhibition "Accelerating Nobels" at the Genoa's 7th edition Science Festival.

Fresh perspectives for a better world

The United Nations Institute for Training and Research (UNITAR), the University of Geneva, (UNIGE) and CERN recently set up a new partnership and launched a lecture series, which will

invite experts in the humanities and technologies to share fresh perspectives on ways to work for a better world. The inaugural lecture at CERN hosted two speakers, Mo Ibrahim and Alpheus Bingham, each of them behind initiatives using technology to address difficult problems.

Mo Ibrahim founded Celtel International, one of Africa's most successful mobile network operators. Ibrahim's company dramatically changed society in Africa – allowing millions of citizens to connect wirelessly, and thus promoting economic growth and social freedom. A study released this year by the World Bank (see <http://go.worldbank.org/NATLOH7HV0>) found that a 10% increase in mobile-phone usage in developing countries increases GDP per person by 0.8%. The same study also linked a 10% increase in high-speed Internet connections with an economic growth of 1.3%. Citizens, for example, can avoid being swindled by checking market prices in neighbouring towns before agreeing to buy or sell goods. Self-employed workers can make calls to advertise their services. Money can be transferred remotely with mobile phones

While it's no surprise that technology has the ability to change the world, it sometimes changes it in surprising ways. The Citizen Cyberscience Centre project, is promoting change for humanitarian causes through distributed volunteer initiatives, such as volunteer computing and 'volunteer thinking'. The inaugural lecture of a planned series was held in late October at CERN.

in Africa – making banking transactions and travelling more safe.

Perhaps more unexpectedly, technology is also promoting democracy in Africa. Mobile phones help observers monitor the outcome of elections – making fraud easier to spot. They are also used to report human-rights violations or to coordinate conservation projects.

Having sold his company for \$3.4 billion in 2004, Ibrahim, along with his daughter Hadeel, is now behind a humanitarian foundation that supports good leaders in Africa by awarding prizes. He also uses his influence to promote business activities in Africa, believing that the continent is not only ripe with opportunities, but that it is also what is best for Africans. "I don't believe in charities," he says. "I believe in business. People should do clean business and that will do the job."

The second invited speaker was Alpheus Bingham, founder of InnoCentive, a Web-based community that has shown a way to

make it easier to connect difficult problems with novel solutions. Through its website InnoCentive puts "Seeker organizations", who have a problem they are seeking a solution for, in contact with "Solvers," who can win cash for offering the best solution.

Bingham's belief is that, in many instances, outsiders (often in a loosely-related field) manage to bring fresh perspectives and innovative solutions to problems that have stumped "experts." "InnoCentive harnesses the global reach of the Internet to let "Seekers" find the right "Solvers", he explains.

"We hope the lecture series will focus attention on the broader aims of the Centre," says Ben Segal, Citizen Cyberscience Centre collaborator, "of supporting development and education by harnessing the power of volunteer thinking and volunteer computing technology."

This centre will help regional authorities, humanitarian workers and scientists harness the computers and the minds of volunteers on the Web, to help predict the impact of new vaccines for neglected diseases, study the effects of climate change on developing regions, or turn satellite images into useful maps of remote regions – to cite just a few examples of what citizen cyberscience projects are already doing today.

Danielle Amy Venton

Give your feedback on the new Users' page

As a first step towards reforming the CERN website the Communication group is proposing a 'beta' version of the

Users' pages. The primary aim of this version is to improve the visibility of key news items, events and announcements to the CERN community.

The beta version is very much a work in progress: your input is needed to make sure that the final page meets the needs of CERN's wide and mixed community. The Communication group will read all your comments and suggestions, and will establish a web steering group that will make sure that the future CERN web pages align with the needs of the community.

More information on this process, including the gradual 'retirement' of the grey Users' pages we are all so used to, will be posted in future editions of the Bulletin.

Visit the new page

<http://user.web.cern.ch/user/beta/>

Please note that feedback submissions are restricted to CERN IP addresses and can only be done via a computer on the CERN site.

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If you have not done it yet, visit the new Users' page and provide the Communication group with your feedback. You can quickly and easily do it via an online form. A dedicated web steering group will design the future page on the basis of your comments.

 **Users and staff**

Home > Users and staff

News and announcements

Latest information on H1N1 17 November
Latest issue of the Bulletin 13 November
Particles have gone half way around the LHC 9 November
Caution: wet leaves on roads make for hazardous driving conditions 7 November
QPS installation completed 6 November

Media and the LHC re-start

H1N1 latest details
[LHC Access](#) (NICE password required)

Events

For a comprehensive list of events please consult Indico.

- Girls Can Do Science Tool 14 November
- Fête de la science 16-22 November
- In the Globe: Accelerating Science until 21 November

UPCOMING HEP EVENTS

For more HEP events please consult CDS

- Hadron collider symposium 2009 16-20 November
- Sir John Adams - his legacy to the world of particle accelerators 20 November
- Detector Seminar: Selected highlights from the IEEE 2009 conference - Trends in gaseous detectors 23 November
- 86th Plenary ECFA meeting 26-27 November
- Detector Seminar: Electron transport calculations for detector gas mixtures 27 November
- From the Proton Synchrotron to the Large Hadron Collider - 50 years of memories in high-energy physics 3-4 December
- The strange friendship of Pauli and Jung - when physics met psychology 10 December
- CERN joint EP/PP Seminar: Recent Results from FNAL long baseline program and future plans 14 December

 Suggest an announcement or event to appear on this page

 CERN on Twitter
50hrs ago today #CERN Proton Synchrotron accelerated its first beam of particles and provides beams for #LHC <http://bit.ly/7fZBIC> Tue 24 Nov

Scheduled access to the #LHC tunnel is on the cards for today - then back to commissioning. #CERN [Tue 24 Nov](#)

 CERN's tweets via RSS

The Bulletin
[cern.ch/bulletin](#)
news, for CERN people

New arrivals

On Tuesday 24 November 2009, members of CERN Management welcomed recently-recruited staff members and fellows at the second part of the Induction Programme (photographed here with Anne-Sylvie CATHERIN, Head of HR Department).

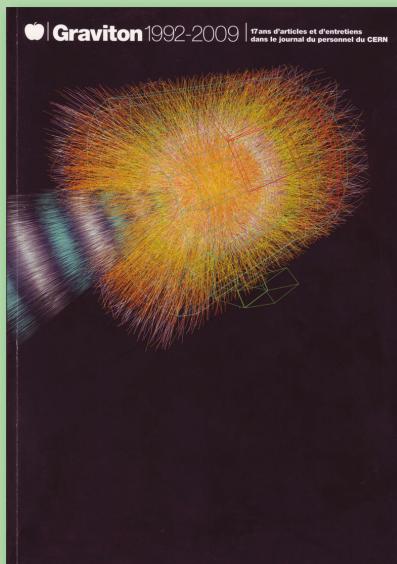
HR Department



Literature in Focus Graviton 1992-2009

The CERN Library invites you to attend its next "Literature in Focus" event, which will take place at 4.00 p.m. on Tuesday, 1st December.

The Graviton was created in 1992 on the initiative of a group of members of the personnel, as a platform for CERN employees to have their say and also to provide more information on the various activities of the Organization and other centres of research. Over the years numerous members of the personnel have contributed to the Graviton's interviews and articles. Many of these articles have now been brought together in a collection edited by Franco Francia. Published in English and French, this book is a perfect opportunity to look back at some of the highlights of CERN's history.



Franco Francia will present the collection in the CERN Library (Bldg. 52 1-052) at 4.00 p.m. on 1st December.

Tea and coffee will be served.

Central Library Bookshop Christmas Sale on 3 and 4 December

If you are looking for an idea for your Christmas gifts, the Bookshop of the Central Library offers you a wide choice of titles in Physics, Mathematics and Computing at very reasonable prices. The Bookshop of the Central Library will have a stall next to Restaurant no. 1 from 3 to 4 December. Come and visit us!

The title list of the Bookshop in the Central Library - which is integrated into the CERN library catalogue - is available from

http://cdsweb.cern.ch/collection/CERN_Bookshop

This Bookshop is located in the Central Library, Building 52 1-052 and is open on weekdays from 8.30 a.m. to 7 p.m. It can be contacted by e-mail at bookshop@cern.ch. CERN staff and users can buy books and CDs at discount prices.

Literature in Focus The Large Hadron Collider: A Marvel of Technology

Inside an insulating vacuum chamber in a tunnel about 100 meters below the surface of the Franco-Swiss plain near Geneva, packets of protons whirl around the 27-km circumference of the Large Hadron Collider (LHC) at a speed close to that of light, colliding every 25 nanoseconds at four beam crossings. The products of these collisions, of which hundreds of billions will be produced each second, are observed and measured with the most advanced particle-detection technology, capable of tracking individual particles as they generate a signature track during its passage through the detectors. All this information is captured, filtered and piped to huge networks of microprocessors for analysis and study by an international team of physicists. When the Large Hadron Collider (LHC) comes on line in 2009, it will be the largest scientific experiment ever constructed, and the data it produces will lead to a new understanding of our universe. Many thousands of scientists and engineers were behind the planning and

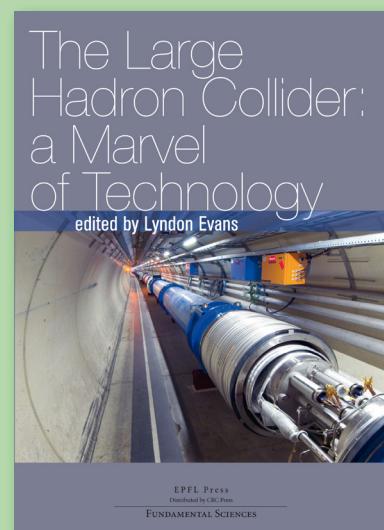
construction of this marvelous machine; a few key members of this team have agreed to write about their role in this adventure, with the common goal of revealing the LHC to a broader readership: its fundamental technology; the basics of the theory behind the experiments; the challenges in planning and civil engineering; the four key experiments; and the informatics infrastructure that will channel the data to the workstations of scientists around the world.

Book contributors: Lyndon Evans, John Ellis, Jean-Luc Baldy, Luz Anastasia Lopez-Hernandez, John A. Osborne, Anders Unnervik, Lucio Rossi, Ezio Todesco, Pierre Strubin, Cristoforo Benvenuti, Philippe Lebrun, Laurent Tavian, Volker Mertens, Brennan Goddard, Trevor Linnecar, Tejinder Virdee, Peter Jenni, Tatsuya Nakada, Jürgen Schukraft, Chris Fabjan, Les Robertson, John Harvey, and Pere Mato.

Wednesday 16 December, 4.00 p.m.
By the Pas Perdus, 61-1-201

You are cordially invited to the aperitif celebrating the publication of the LHC Book. Lyn Evans and many of the authors will be present to sign copies!

All royalties paid into a fund to support students and post-docs.



Staff members with 25 years' service at CERN in 2009

The 62 staff members who have spent 25 years within CERN in 2009 were invited by the Director-General to a reception in their honour on 17 November.

Mr. ARNAUDON	Luca	BE	Dr. GRAFSTROM	Per	PH	Mr. MOREL	Michel	PH
Mr. BEL	Jean-François	TE	Mr. HANCOCK	Steven	BE	Mr. PAOLUZZI	Mauro	BE
Mr. BERTINELLI	Francesco	TE	Mr. HATCH	Mark	PH	Mr. PARCHET	Daniel	GS
Mr. BLAND	Alastair	BE	Mr. HEMMER	Frederic	IT	Mr. PEIRO	Giuseppe	TE
Dr. BLOCH	Philippe	PH	Mr. HOURICAN	Michael	TE	Mrs. PELLOUX	Marie-Claude	FP
Mr. BORCIER	Luc	EN	Mr. JOSA	Francisco	EN	Mr. PEPINSTER	Paul	GS
Mr. BRUNEL	Xavier	PH	Mr. JUGET	Jean-François	GS	Dr. RADERMACHER	Ernst	PH
Dr. BURKIMSHER	Paul	EN	Mrs. KEHRER	Tjitske	DG	Mr. RAMA	Nino	GS
Mr. CAMPI	Domenico	PH	Dr. KIRKBY	Jasper	PH	Mrs. SALVI	Lisa	TE
Dr. CATTAI	Ariella	PH	Mr. KOTTELAT	Luc-Joseph	PH	Mr. SCHIPPER	Jan	TE
Mr. DALIN	Jean-Michel	EN	Mr. LANCON	Philippe	PH	Dr. SCHMIDT	Rudiger	TE
Mr. DANGOISSE	Claude	IT	Dr. LANDUA	Rolf	PH	Dr. SCHUKRAFT	Jürgen	PH
Mr. DAVIDS	Daniel	EN	Mr. LEPEULE	Patrick	TE	Mr. SERMEUS	Luc	TE
Mr. DI MAIO	Franck	BE	Mr. LIMIA-CONDE	Francisco	PH	Mr. SEXTON	Ian	EN
Mr. FERRARI	Claude	EN	Mr. LOPEZ	Carlos	TE	Dr. SHIERS	Jamie	IT
Mr. FISCHER	Klaus	TE	Mr. LOUWERSE	Reinier	BE	Mr. SIMONET	Gilles	TE
Mr. FOLLEY	Adrian	PH	Mr. MARTINI	Robin	GS	Mr. SOUCHEYRE	Jean-Paul	BE
Mr. FORMENTI	Fabio	TE	Mr. MCMONAGLE	Gerard	BE	Mrs. VAN CAUTER-TANNER		
Dr. GATIGNON	Laurentius	EN	Dr. MEYER	Thomas	PH		Laurence	BE
Mr. GIACHINO	Rossano	BE	Mr. MOLENDIJK	Johannes	BE	Mr. VESTERGARD	Henrik	TE
Dr. GONIDEC	Allain	PH	Mr. MOLLER	Mats	IT	Mr. WILLIAMS	Lloyd Ralph	TE





Official news

COMMUNICATION FROM THE SAFETY

In any emergency, you should call 744444 (+41 22 76 74444). There is something that bears repeating - especially in the light of recent events. The new Safety Bulletin, no. 2009-01 [lien vers le document EDMS 1035295 : <https://edms.cern.ch/document/1035295/1>], reminds us that, although raising the alarm and giving first aid in an emergency are everyone's job, "medical transport is a job for professionals."

You are urged to read, print and share the Safety Bulletin n° 2009-01: remember for all emergencies you should dial 74444!

We appreciate your comments and suggestions. Write to safety-general@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.



External meeting

GENEVA UNIVERSITY

École de physique - Département de physique nucléaire et corposculaire

24, quai Ernest-Ansermet
1211 GENÈVE 4
Tél: (022) 379 62 73 - Fax: (022) 379 69 92

Monday 7 December 2009

PHYSICS COLLOQUIUM

at 17:00 - Stückelberg Auditorium

Topological insulators and topological superconductors

Professor Shoucheng Zhang

Department of Physics, Stanford University, CA

Recently, a new class of topological states has been theoretically predicted and experimentally realized. The topological insulators have an insulating gap in the bulk, but have topologically protected edge or surface states due to the time reversal symmetry. In two dimensions the edge states give rise to the quantum spin Hall (QSH) effect, in the absence of any external magnetic field. I shall review the theoretical prediction of the QSH state in HgTe/CdTe semiconductor quantum wells, and its recent experimental observation. The edge states of the QSH state supports fractionally charged excitations. The QSH effect can be generalized to three dimensions as the topological magneto-electric effect (TME) of the topological insulators. Topological insulators Bi₂Te₃, Bi₂Se₃ have been discovered theoretically and experimentally to have surface states consisting of a single Dirac cone.

I shall present realistic experimental proposals to observe the magnetic monopoles on the surface of topological insulators. Topological superconductors and superfluid have been theoretically proposed recently, in both two and three dimensions. They have a full pairing gap in the bulk, and their mean field Hamiltonian look identical to that of the topological insulators. However, the gapless surface states consists of a single Majorana cone, containing only half the degree of freedom compared to the single Dirac cone on the surface of a topological insulators. I shall discuss their physics properties and the search for these novel states in real materials.

A drink with the speaker will be offered after the colloquium.

Organizer: Prof. Markus Büttiker

October 2009 - n°1

Safety BULLETIN de Sécurité

Edited by: DG/SCG (EDMS 1035295 v.1)

We all have a duty to raise the alarm and give first aid

Medical transport is a job for the PROFESSIONALS

What happened?

In 2009, a number of people suffering from illness or injury have made their own way to the CERN infirmary or Fire Brigade or have been taken there by a colleague:

- **In March:** 10 p.m., a person fell ill and went to the infirmary. Luckily, two individuals were able to arrange transportation to the hospital by the Fire Brigade.
- **In April:** A person suffering from a strong allergic reaction was taken to the infirmary by a colleague. Another person was injured while working on a production machine. A colleague took him to the Fire Brigade.
- **In June:** After falling in a stairwell, the victim went to the infirmary around 6.00 p.m. Subsequently, the individual decided to call the Fire Brigade.

In each of these cases, the action taken could have led to a secondary accident or a further degradation of the person's condition.

What should be done to avoid this type of incident?

If you are involved in an accident or feel unwell, **DO NOT go to the Infirmary or Fire Brigade by yourself**. If you come across someone in such a condition, **DO NOT take them there**.

The CERN Fire Brigade operates a round-the-clock service, every day of the year. They are trained and equipped to handle rescues and other emergencies, including the safe transportation of ill or injured persons to the nearest appropriate medical centre.

Only the CERN Fire Brigade is authorised to contact the emergency services outside CERN.

If you want to know more about emergency response techniques, a training course to become a CERN First-Aider is available.



EMERGENCY: 7 44 44 (from a CERN phone)
From outside: +41 22 76 74444



Take note

COMMUNICATION TO LINUX USERS

We would like to inform you that the aging "phone" Linux command will stop working:

- On lxplus on 30 November 2009,
- On lxbatch on 4 January 2010,

and is replaced by the new "phonebook" command, currently available on SLC4 and SLC5 Linux.

As the new "phonebook" command has different syntax and output formats from the "phone" command, please update and test all scripts currently using "phone" before the above dates.

You can refer to the article published on the IT Service Status Board <https://cern.ch/ssb> under the Service Changes section.

Please send any comments to it-dep-phonebook-feedback@cern.ch

*Best regards,
IT-UDS User Support Section*



Language training

INFORMATION SERVICE ("PERMANENCE")

An information service ("permanence") for language training has been set up. If anyone has a question or requires information on any aspect of English or French training please come to our office (5/4-016) at the following times:

Lucette Fournier

French courses

Mondays	13.30 - 15.30
Tuesdays	10.30 - 12.30

Tessa Osborne

English courses

Wednesdays	12.00 - 14.00
Thursdays	11.00 - 13.00

CERN SHOP - CHRISTMAS SALE IN BLDG. 33

Looking for Christmas present ideas? CERN Shop will give the CERN Card Holders a special reduction of 10% of all CERN Shop articles **from Friday 11.12.2009 to Thursday 17.12.2009**. Come to visit the CERN Shop in the Reception, Building 33.



PH-EDU-PO

CAR STICKERS FOR 2010

The 2010 car stickers are now available. Holders of blue stickers will receive their 2010 stickers through the internal mail from 1st December onwards.

Holders of red stickers are required to go to the Registration Service (Building 55, first floor), which is open non-stop from 7.30 a.m. to 4.00 p.m. Mondays to Fridays, in order to obtain their new stickers.

They will be asked to present documents relating to the vehicles concerned. Owners of vehicles registered on green and CD plates may disregard this message.

LOCKS KEYS SERVICE

The GS-LS-SEM section is pleased to inform you that as from Monday 30 November 2009, the opening hours of the Locks Keys Service will be the following:

08-30 to 12-30 / 13-30 to 16-30, Monday to Friday.

Thank you.

*Claude Ducastel
GS-SEM-LS
73333*

*Reception and Access Control Service
GS/SEM/LS*

NEW COURSES

Specific English and French courses -Exam preparation

We are now offering specific courses in English and French leading to a recognised external examination (e.g. Cambridge, DELF and BULATS).

If you are interested in following one of these courses and have at least an upper intermediate level of English or French, please enrol through the following link:

English courses

http://cta.cern.ch/cta2/f?p=110:9:1375795393410117::NO::X.Course_ID,X_Status:4132%2CD

French courses

http://cta.cern.ch/cta2/f?p=110:9:1375795393410117::NO::X.Course_ID,X_Status:4132%2CD

Or contact:

Tessa Osborne 72957 (English courses)

Lucette Fournier 73483 (French courses)

Language Training

Nathalie Dumeaux Tel. 78144
nathalie.dumeaux@cern.ch



Take note



PUBLICATION OF THE BULLETIN

The final edition (Nos 51-52/2009 and 1-2/2010) of the last Weekly Bulletin of the year will be published on Friday 11 December and will cover events at CERN from 14 December 2009 to 8 January 2010. Announcements for publication in this issue should reach the Publication Section (Communication group) or the Staff Association, as appropriate by noon, on Tuesday 8 December.

The table below lists the 2010 publication dates for the paper version of the Bulletin and the corresponding deadlines for the submission of announcements. Please note that all announcements must be submitted by 12.00 midday on Tuesdays at the latest.

BULLETIN PUBLICATION 2010

Bulletin No. Week number	Submission of announce- ments (before 12.00 midday)	Bulletin Web version	Bulletin Paper version
2-3	Tuesday 5 January	Fridays 8 and 15 January	Wednesday 13 January
4-5	Tuesday 19 January	Fridays 22 and 29 January	Wednesday 27 January
6-7	Tuesday 2 February	Fridays 5 and 12 February	Wednesday 10 February
8-9	Tuesday 16 February	Fridays 19 and 26 February	Wednesday 24 February
10-11	Tuesday 2 March	Fridays 5 and 12 March	Wednesday 10 March
12-13	Tuesday 16 March	Fridays 19 and 25 March	Wednesday 24 March
14-15	Tuesday 30 March	Thursday 1 and Friday 9 April	Wednesday 8 April
16-17	Tuesday 13 April	Fridays 16 and 23 April	Wednesday 21 April
18-19-20 (Ascension)	Tuesday 27 April	Fridays 30 April and 7 May	Wednesday 5 May
21-22	Tuesday 18 May	Fridays 21 and 28 May	Wednesday 27 May
23-24	Tuesday 1 June	Fridays 4 and 11 June	Wednesday 9 June
25-26	Tuesday 15 June	Fridays 18 and 25 June	Wednesday 23 June
27-28	Tuesday 29 June	Fridays 2 and 9 July	Wednesday 7 July
29-30	Tuesday 13 July	Fridays 16 and 23 July	Wednesday 21 July
31-32-33	Tuesday 27 July	Friday 30 July	Wednesday 4 August
34-35	Tuesday 17 August	Fridays 20 and 27 August	Wednesday 25 August
36-37	Tuesday 31 August	Fridays 3 and 10 September	Wednesday 8 September
38-39	Tuesday 14 September	Fridays 17 and 24 September	Wednesday 22 September
40-41	Tuesday 28 September	Fridays 1 and 8 October	Wednesday 6 October
42-43	Tuesday 12 October	Fridays 15 and 22 October	Wednesday 20 October
44-45	Tuesday 26 October	Fridays 29 October and 5 November	Wednesday 3 November
46-47	Tuesday 9 November	Fridays 12 and 19 November	Wednesday 17 November
48-49	Tuesday 23 November	Fridays 26 November and 3 December	Wednesday 1 December
50-51-52/1-2	Tuesday 7 December	Friday 10 December	Wednesday 15 December

If you wish to publish a news article or an item in the General Information or Official News sections, please contact

Bulletin-Editors@cern.ch

If you wish to publish an announcement in the Staff Association section, please contact

Staff.Bulletin@cern.ch

Publications Section, DG-CO group



Take note



ACCU MEETING

**DRAFT Agenda
for the meeting to be held
on Wednesday 9 December 2009
At 9:15 a.m. in room 60-6-002**

- | | |
|------------------------------------|--|
| 1. Chairman's remarks | 7. An update on Safety at CERN |
| 2. Adoption of the agenda | 8. Reports from ACCU representatives on other committees |
| 3. Minutes of the previous meeting | 9. Users' Office news |
| 4. Matters arising | 10. Election of the ACCU Chair |
| 5. News from the CERN Management | 11. Any Other Business |
| 6. Restaurant 1 extension | 12. Agenda for the next meeting |

Anyone wishing to raise any points under item 11 is invited to send them to the Chairman in writing or by e-mail to

Christopher.Onions@cern.ch

Chris Onions (Secretary)

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

Austria	G. Walzel (76592)	Netherlands	G. Bobbink (71157)
Belgium	C. Vander Velde (71539)	Norway	J. Nystrand (73601)
Bulgaria		Poland	M. Witek (78967)
Czech Republic	P. Závada (75877)	Portugal	P. Bordalo (74704)
Denmark	J.B. Hansen (75941)	Slovak Republic	A. Dubnickova (71127)
Finland	K. Lassila-Perini (79354)	Spain	S. Cabrera Urbán (71170)
France	F. Kunne (76342) A. Rozanov (71145)	Sweden	K. Jon-And (71126)
Germany	H. Lacker (78736) O. Biebel (72974)	Switzerland	M. Weber (71271)
Greece	G. Tsipolitis (71162)	United Kingdom	M. Campanelli (72340) S. McMahon (77598)
Hungary	F. Siklér (76544)	Non-Member States	D. Acosta (71566) E. Etzion (71153)
Italy	F. Navarria (Chairman) (74703) N. Pastrone (78729)	CERN	C. Jiang (71972) N. Zimine (75830) E. Auffray (75844) F. Teubert (73040)

CERN Management is represented by S. Bertolucci (Director for Research and Computing), S. Lettow (Director for Administration and General Infrastructure) and J. Salicio Diez/PH with C. Onions/PH as Secretary. The Human Resources Department is represented by J. Purvis, the General Infrastructure Services Department by M. Tirakari and the CERN Staff Association by M. Goossens. Other members of the CERN Staff attend as necessary for specific agenda items. Anyone interested in further information about ACCU is welcome to contact the appropriate representative, or the Chairman or Secretary (75039 or Christopher.Onions@cern.ch).

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



NEW OFFICE SOFTWARE COURSE FORMAT!

Always keen to anticipate your training needs, the Technical Training service is pleased to propose two new Office Software course formats :

- "Focus on...": On a monthly basis we will propose a theme such as "Sharepoint Collaboration Workspace" or "Word 2007" or "charts", etc. You will be invited to send us in advance your questions regarding the proposed topic and register for the course through our Training Catalogue. During the session, our trainer will answer all the questions received and participants will increase their knowledge thanks to the solutions discussed for everyone. The course will last two hours, from 9-00 to 11-00 a.m. - with open questions on the proposed topic at the end.
- "Office software Individual coaching": If one or several specific topics are causing 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 consult these new courses in our catalogue:

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

Technical Training Service
Technical.Training@cern.ch
Tel 74924



CERN TECHNICAL TRAINING: AVAILABLE PLACES IN FORTHCOMING COURSES

The following course sessions are scheduled in the framework of the 2009 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

Developing secure software	07-DEC-09	07-DEC-09	0.5 day	English
PERL 5 - Advanced Aspects	10-DEC-09	10-DEC-09	1 day	English
Project Development using Python	01-DEC-09	04-DEC-09	4 days	English

Electronic design

Advanced VHDL for FPGA Design	30-Nov-09	04-DEC-09	5 days	English
LabVIEW - Working efficiently with LabVIEW 8	07-DEC-09	07-DEC-09	1 day	English
LabVIEW Basic I with RADE introduction	30-Nov-09	02-DEC-09	3 days	English
LabVIEW Basics 2	03-DEC-09	04-DEC-09	2 days	English

Mechanical design

Office software

Dreamweaver CS3 - Level 2	04-DEC-09	04-DEC-09	1 jour	French
CERN EDMS - Introduction	02-dec-09	02-dec-09	1 jour	French
Sharepoint Designer (Frontpage) - Level 1	07-DEC-09	08-DEC-09	2 days	English

Special course

Egroups training	15-DEC-09	15-DEC-09	0.5 jour	French
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If you are interested in attending any of the above course sessions, please talk to your supervisor and/or your DTO, and apply electronically via EDH from the course description pages that can be found at: <http://cta.cern.ch/cta2/f?p=110:9> under 'Technical Training' with the detailed course program. Registration for all courses is always open – sessions for the less-requested courses are organized on a demand-basis only. CERN Technical Training courses are open only to members of the CERN personnel (staff members and fellows; associates, students, users, project associates; apprentices: employees of CERN contractors, with some restrictions). In particular, quoted prices and programmes refer specifically to the CERN community.





Seminars

MONDAY 30 NOVEMBER

COMPUTING SEMINAR

11:00 - IT Auditorium, Bldg. 31

The Data Warehouse Challenge at Credit Suisse - Prepared for the Next Lehman Case?

K. STOCKINGER / CRÉDIT SUISSE

EPFL SEMINARS

11:00 - EPFL, Auditoire II du BSP

Folding Proteins and Assembling Viruses. Insights in the Biosciences using Ultrasenstive Fluorescence Methods

- D. LAMB / DEPT. OF CHEMISTRY, LUDWIG-MAXIMILIANS-UNIVERSITAT MUNCHEN

TH JOURNAL CLUB ON STRING THEORY

14:00 - Bldg. 1-1-025

The Three Dimensional Dual of 4D Chirality

- M. PORRATI / NYU

TUESDAY 1 DECEMBER

CERN JOINT EP/PP SEMINARS

11:00 - MAIN AUDITORIUM, Bldg.500

Higgs Searches -- Latest Results from the Tevatron

K. PETERS / UNIVERSITY OF MANCHESTER

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA - M. BUICAN

WEDNESDAY 2 DECEMBER

TH THEORETICAL SEMINAR

14:00 - TH Auditorium, Bldg. 4

Towards automated calculations of one-loop radiative corrections

Z. KUNSZT / ETH ZURICH

THURSDAY 3 DECEMBER

SYMPORIUM

14:00 - Main Auditorium, Bldg. 500

From the PS to the LHC - 50 Years of Nobel Memories in High-Energy Physics

- J. STEINBERGER, G. PLASS, E. PICASSO, S. MYERS, C. RUBBIA, B. RICHTER, L. EVANS, R. HEUER, L. LEDERMAN, J. CRONIN, S. GLASHOW, J. FRIEDMAN, F. WILCZEK, M. VELTMAN, G. 'T HOOFT, D. GROSS, S. TING, S. WEINBERG

FRIDAY 4 DECEMBER

SYMPORIUM

9:00 - Main Auditorium, Bldg. 500

From the Proton Synchrotron to the Large Hadron Collider - 50 Years of Nobel Memories in High-Energy Physics

J. STEINBERGER, G. PLASS, E. PICASSO, S. MYERS, C. RUBBIA, B. RICHTER, L. EVANS, R. HEUER, L. LEDERMAN, J. CRONIN, S. GLASHOW, J. FRIEDMAN, F. WILCZEK, M. VELTMAN, G. 'T HOOFT, D. GROSS, S. TING, S. WEINBERG

MONDAY 7 DECEMBER

COMPUTING SEMINAR

11:00 - IT Auditorium, Bldg. 31

Vulnerability Assessment and Secure Coding Practices for Middleware

E. HEYMANN / UAB, B. P. MILLER / U.WISCONSIN

ACADEMIC TRAINING LECTURE

REGULAR PROGRAMME

11:00 - TH Auditorium, Bldg. 4

Detectors for Linear Colliders (1/4)

M. BATTAGLIA / PH DEPARTMENT), M. THOMSON / DEPARTMENT OF PHYSICS, CAMBRIDGE UNIVERSITY

TH JOURNAL CLUB ON STRING THEORY

14:00 - Bldg. 1-1-025

TBA - S. GUKOV / CALTECH

TUESDAY 8 DECEMBER

ACADEMIC TRAINING LECTURE

REGULAR PROGRAMME

11:00 - TH Auditorium, Bldg. 4

Detectors for Linear Colliders (2/4)

M. BATTAGLIA / PH DEPARTMENT), M. THOMSON / DEPARTMENT OF PHYSICS, CAMBRIDGE UNIVERSITY

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA - Á. PAREDES / ICC BARCELONA

WEDNESDAY 9 DECEMBER

ACADEMIC TRAINING LECTURE

REGULAR PROGRAMME

11:00 - TH Auditorium, Bldg. 4

Detectors for Linear Colliders (3/4)

M. BATTAGLIA / PH DEPARTMENT), M. THOMSON / DEPARTMENT OF PHYSICS, CAMBRIDGE UNIVERSITY

TH THEORETICAL SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA

P. MASTROLIA / CERN

THURSDAY 10 DECEMBER

ACADEMIC TRAINING LECTURE

REGULAR PROGRAMME

11:00 - TH Auditorium, Bldg. 4

Detectors for Linear Colliders (4/4)

M. BATTAGLIA / PH DEPARTMENT), M. THOMSON / DEPARTMENT OF PHYSICS, CAMBRIDGE UNIVERSITY

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA

S. REFFERT / UNIVERSITY OF AMSTERDAM

CERN COLLOQUIUM

16:30 - Council Chamber, BLDG. 503

The Strange Friendship of Pauli and Jung - When Physics Met Psychology

A. I. MILLER / UNIVERSITY COLLEGE LONDON

FRIDAY 11 DECEMBER

OTHER SEMINAR

10.00 - Globe, Bldg. 80

Media Training

PARTICLE AND ASTRO-PARTICLE PHYSICS SEMINARS

14:00 - Bldg. 1-1-025

Very-Short-BaseLine Electron Neutrino Disappearance

C. GIUNTI / INFN TORINO