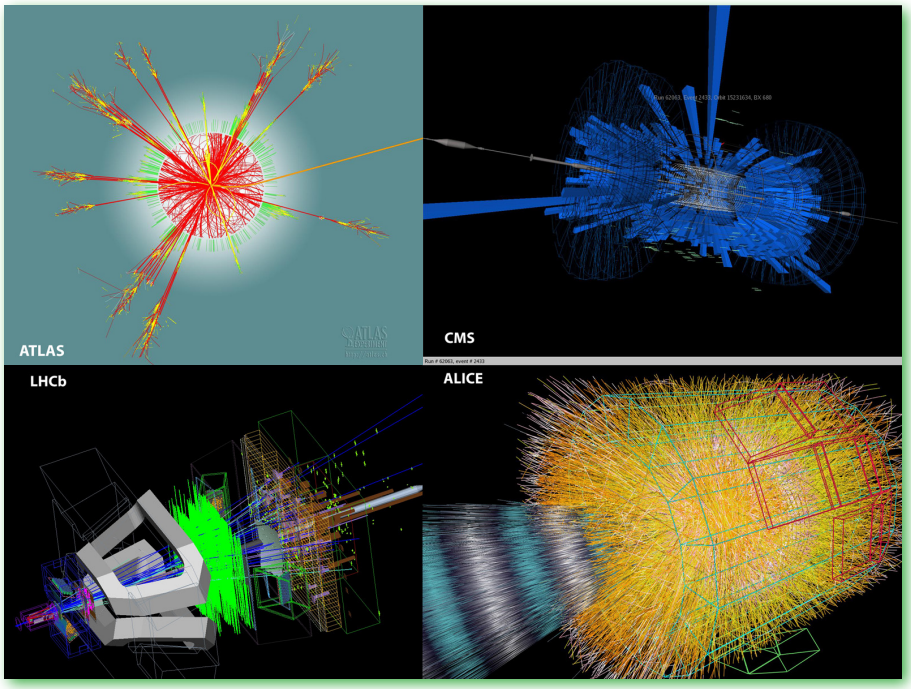
CERN Bulletin

Nos 37 & 38 – 7 & 14 September 2009

3.5 TeV : a good start!



Coming soon: the real data!

To the pessimists out there, the 3.5 TeV starting energy of the LHC will be like a half-empty glass. However, the thousands of physicists working at the experiments certainly do not share these feelings. On the contrary, they are as excited as ever since they will be the first to observe what happens to matter in these (still) unprecedented conditions.

Although one might think that 3.5 TeV for a machine designed to operate beams at 7 TeV is as frustrating as driving a Ferrari when the speed limit is 60 km/h, physicists working at the LHC experiments see the glass half full: they are now focusing on how to make the best use of this intermediate energy. For them, having the opportunity to test their detectors at non-extreme conditions is rather a reassuring feeling. "So far, the CMS detector has been commissioned using cosmic rays. After start-up, the first thing CMS will do is to check its performance again, this time with collision data - where the particles originate from the centre of the detector rather than passing from the top to the bottom as is the case with cosmic rays", explains Jim Virdee, CMS Spokesperson.

The start-up energy is still 3.5 times higher than the world's current most powerful accelerator, the Tevatron (Fermilab, US). "This energy is large enough for the LHC to produce interesting samples of top-quarks, the heaviest quark and the only one that has not yet been observed in Europe", says Fabiola Gianotti, ATLAS Spokesperson. "As events due to top-quark production contain a large number of physics "signatures" (electrons, muons, jets, jets from b-quarks, missing energy), observation of top-quark production will demonstrate that the detectors, the calibration procedures and the

(Continued on page 2)

A word from the DG

CERN and space science

The connection between CERN and space is tangible this week, as former CERN Fellow and ESA astronaut Christer Fuglesang begins the second week of his mission on space shuttle flight STS-128. I had the pleasure to meet Christer back in October 2008 at an IEEE symposium in Dresden, and he asked me whether we could give him something related to CERN for his official flight kit. We thought of caps and tee-shirts, but in the end decided to give him a neutralino as a symbol of the link between particle physics and the science of the Universe. Neutralinos are theoretical particles that the LHC will be looking for, and if they exist, they're strong candidates for the Universe's dark matter. Christer's neutralino is just a model, of course, escaped from the particle zoo, but what better symbol of the connec-

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In this issue

News

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A word from the DG

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CERN and space science

tedness of science?

Christer Fuglesang is not the only link CERN has with the space shuttle programme. We've recently learned that the AMS-2 experiment, which will be looking for antimatter and dark matter in space, has had its berth confirmed on the last ever shuttle flight in October 2010. AMS-2 is currently under construction at CERN and is destined for installation on the International Space Station. Once in orbit, CERN will be the experiment's data centre.

These are very positive stories for CERN, and examples of a more fundamental truth: science can't be pigeonholed. People talk of different disciplines like physics, chemistry and biology. Or sub-disciplines such as particle physics, astrophysics and cosmology. Science is such a vast domain that it has to be this way, but it's frequently at the interface between disciplines that the best science emerges.

I was also reminded last week that the parallels between particle physics and the space programme go further than the science. Both also push back the frontiers of technology, and it's an inevitable part of the process for both to encounter setbacks along the way. With 2009 being the 40th anniversary of the first lunar landing, the world is celebrating the success of the Apollo programme, but many years of hard work were necessary before the triumph of 1969. And as we marvel at the amazing pictures sent back from the Hubble Space Telescope, the instrument's initial blurred vision has been consigned to history. Even Christer experienced the reality of living at the technology frontier last week, as his launch was delayed due to a technical fault in a liquid hydrogen valve. Today, we can celebrate the success of his launch, and look forward to celebrating the joint successes, technological and scientific, of particle physics and the space science programme in years to come.

Rolf Heuer

3.5 TeV : a good start!

(Continued from page 1)

reconstruction tools are in good shape. At that point, we will be ready to embark on the discovery phase, which, at this energy, might even include supersymmetry", she adds.

The ALICE detector is optimized for lead-ion collisions, the second part of the LHC scientific programme that will start towards the end of the initial run, in 2010. "As it turns out, the proton-proton collision energy equivalent to full energy ion beams is about 5.5 TeV, and therefore the initial 7 TeV (that is, 3.5 TeV per beam) proton run is actually better suited for comparing proton-proton collisions to lead collisions than the full 14 TeV! For both our proton and heavy ion physics programs the lower start-up energy will therefore be extremely useful", explains Jurgen Schukraft, the experiment's Spokesman.

The most specialized of the four large detectors is LHCb. It will search for new physics by observing the interactions between new particles and the beauty quarks. "The kind of indirect search for new particles that we perform makes our experiment less sensitive to the LHC collision energy", explains Andrei Golutvin, LHCb Spokesperson. What really matters to us is to have a stable run at a reasonable luminosity. The 3.5 TeV is enough for us to perform new measurements of some rare decays of the beauty quarks with unprecedented accuracy. If we discover any discrepancy with the expected values, we will be able to point to some new physics".

The current plan for the LHC is to safely move up in energy to around 5 TeV per beam in 2010 and to gradually push up the luminosity by increasing the number of protons per bunch and the number of bunches. "We fully support such a plan in which steps will be taken in the light of experience", says Virdee. "Although significant exploration of the Higgs 'territory' will take longer than expected, we could be fortunate enough to see signs of new phenomena such as supersymmetry or extra-dimensions if they exist in Nature at these energies".

Did you know?

What is a TeV?

1 TeV corresponds to 10^{12} electronvolts. The electronvolt is an energy unit particularly convenient in particle physics because, in absolute terms, the energies that particle physicists deal with are very small. If we take the LHC as an example, the total collision energy is 14 TeV, making it the most powerful particle accelerator in the world. Still, if we convert this into joules – the energy unit accepted by the International System – we obtain only 22.4×10^{-7} joules.
This is a very small amount of energy if compared, for example, to the energy of an object weighing 1kg and falling from a height of 1m, that is, 9.8 joules.

What does "luminosity" mean?

Luminosity is a measure of how efficiently a particle accelerator produces collision events. It determines the rate at which these collisions take place. In a collider, particles are stored in a string of bunches to make a beam. Each bunch is about the size of a grain of rice and contains a few billion particles. Pushing the limits of technology, accelerator physicists increase luminosity by putting more particles in each bunch, colliding more bunches per second, and squeezing the bunches to the smallest possible size at the collision point (extract from Symmetry Magazine).

Sprucing up the site

From the Globe to restaurants and meeting rooms, feverish activity is under way on both of the CERN sites to replace old equipment, carry out maitenance on existing facilities and buildings and increase their energy efficiency.

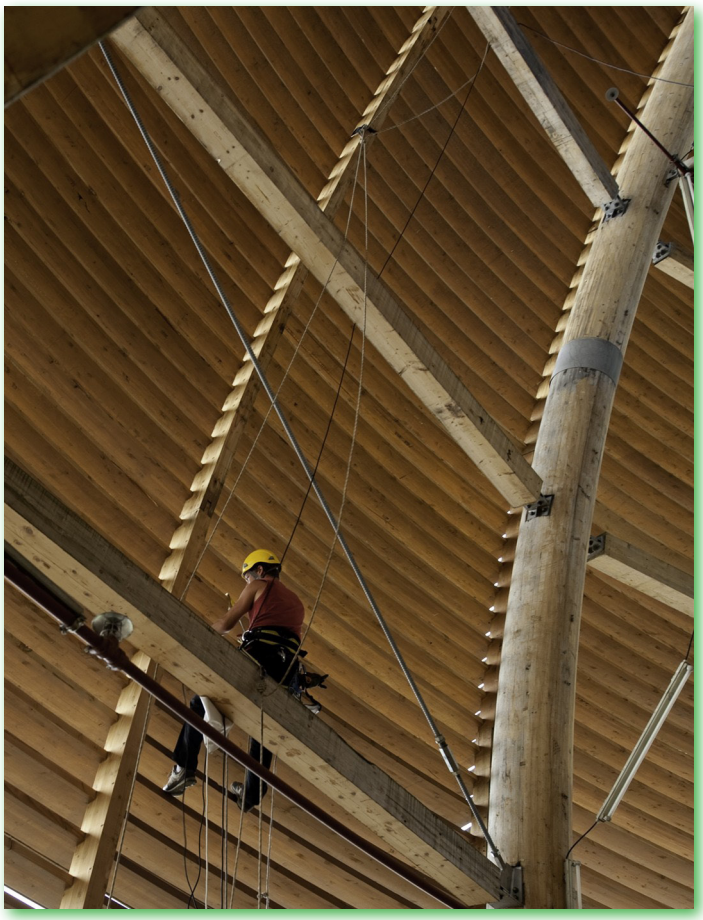
The visual landmark of CERN, the Globe, has been undergoing maintenance work since July. The 40 m diameter sphere, made entirely of wood, is currently being sanded down and new treatments are being applied to the wood to protect the whole building. The work will continue until the beginning of October.

Major work is also under way on some of the most emblematic rooms of the Lab, such as the Conference Room in Building 60 and the Council Chamber: while the first has been completely refurbished, with around 15 extra seats added and new audiovisual facilities installed, in the latter the air conditioning and the main electrical switchboards have been replaced.

In accordance with the plans for consolidating the site with the environment in mind, the heating plant for the Prévessin site is currently being renovated and modified to increase efficiency. It will be completed by mid September, ready for winter.

Two of the three on-site restaurants are undergoing work: Restaurant 3 is having a much needed makeover, with repairs to the ceiling, new lighting and a new bar; on the Meyrin site, the lighting in Restaurant 2 is being replaced to improve its efficiency.

Finally, on September 9, there will be a ceremony to mark the start of construction of Building 42, the new extension of Building 40, (see http://cdsweb.cern.ch/record/1150664?ln=en). Local dignitaries including the Mayor of Meyrin, the Geneva State Councillor of the Department of Construction and Information Technology, and the State Secretary for Education and Research will give speeches at the ceremony. The building is due to be ready for use by the end of 2010.



Work being carried out on the Globe of Science and Innovation.

Where science and art collide

Over the years CERN has inspired artists, it has been the setting for novels and films, it has hosted its own music and film festivals and even theatre productions. Being here is certainly inspirational, both for permanent staff and visitors alike. But there is no official framework to foster CERN's cultural side. Ariane Koek hopes to change that by setting up a cultural policy for CERN, linking the imagination of scientists with that of artists.

"What I love about CERN is that it represents international collaboration, openness and creativity," says Ariane Koek. "Here people dare to think about the impossible and make it possible." Koek, whose background includes being a producer of cultural television and radio programmes at the BBC and CEO of a creative writing charity, has come to CERN for three months as part of a fellowship from a UK institution, the Clore Duffield Foundation.

"Every year around twenty people in the UK who are leaders in the cultural field are awarded a fellowship to develop themselves, explore the world and open up their horizons," she explains. As part of her fellowship she had to choose a project outside her 'comfort zone'. "For me it was a no-brainer, I immediately chose CERN. I've always been fascinated by physics - the way it combines an intense logic with an intense imagination. I often used to invite scientists to talk on the cultural arts and politics shows I was making."

The CERN communications team, excited by her proposal, immediately invited her here. One of her main ideas is to set up an International Artist in Residence scheme for CERN. In fact, about 5 years ago CERN hosted a similar scheme which culminated in an exhibition of the work created (http://cdsweb.cern.ch/record/45513?ln=en). But Koek wants to do much more than this. "The residency wouldn't be limited to the visual arts, it would be open to dancers, film makers, writers, and digital artists and musicians," she explains.

"CERN already attracts lots of cultural interest" she says, " I know that Japanese artist Mariko Mori visited recently, and Antony Gormley even donated a sculpture to CERN, not to mention its being the setting for a major Hollywood film." But these collaborations are normally arranged on an ad hoc basis. For example, as Koek explains: "Artists normally visit because they know someone who works at CERN. So the process isn't very transparent – which is in contrast to the way the rest of CERN works." Koek's goal is to set up a permanent system to bring artists to CERN. After applying, the successful candidates would be picked by an international panel of judges made up of artists and scientists.

But the cultural policy is not just about bringing artists into CERN, it will also help to foster creativity from within CERN. "This will be a two-way relationship, " she confirms. "As well as the artist benefiting from the inspiration of CERN, they would also give a seminar at the beginning of their residency and they would showcase their work at the end." She also wants the artists to give 'surgeries' in which they will be available to talk and give advice to the many artistically minded here at CERN.

The latest from the LHC

On 26 August, the first two fully tested crates for the new quench protection system (QPS) were installed in **Sector 1-2.** These are the first of 436 crates that will be installed around the ring. The two crates include detectors for both the enhanced busbar protection and the symmetric quench protection (see http://cdsweb.cern.ch/record/1178509?ln=en for more details).

To test the crates before installation, a dedicated test bed has been created, capable of simulating all the conditions in the LHC, from a symmetric quench to an increase in busbar resistance. The teams are working two shifts a day, including weekends, to test the new crates. Two more test benches are also being built to increase the production rate. The whole task is on target for completion in mid October.

Another important new task for the QPS team is to try and speed up the energy extraction from the magnets. The quicker the energy can be extracted the lower the risk of dangerously high temperatures should a quench occur.

The time constant for the dipoles will be halved to about 50 seconds. The decision to run at 3.5 TeV, and therefore with lower current in the magnets, has in fact made this task relatively straightforward. By switching two of the three 'dump' resistors into a series circuit instead of having all three resistors in parallel, allows the energy to be converted to heat much faster. This modification is currently ongoing and takes only a few hours for each of the 16 extraction systems. In the quadrupole circuits the task is more complex. Reducing the time constant to the desired 10 seconds, from a previous 35 seconds, requires adding extra resistors.

Another advantage of the new QPS system is that it will allow accurate resistance measurements to be taken remotely. Over the past 3 months the QPS team has checked nearly 40 000 individual resistance measurements by hand, and in the process clocked up an impressive 500 km walking around the ring. A small testing device is currently being developed to automate this process using the new QPS system. This will save a huge amount of time and effort for the next rounds of interventions – for example when the LHC energy is increased.

In Sector 8-1 the flexible hose, which caused the helium leak into the insulation vacuum, has now been replaced and the sector is now being cooled down again.

Work to install the 'pressure release springs' is progressing well, with only one sector remaining - **Sector 3-4**.

In **Sector 6-7** repairs are being made to fix the short-circuit to ground, which occurred in the dipole circuit on 20 August (see previous update).

AMS gets lift on space shuttle Discovery

AMS-02, the CERN-recognized experiment that will seek dark matter, missing matter and antimatter in Space aboard the International Space Station (ISS), has recently got the green light to be part of the STS-134 NASA mission in 2010.

In a recent press release, NASA announced that the last or last-but-one mission of the Space Shuttle programme would be the one that will deliver AMS, the Alpha Magnetic Spectrometer, to the International Space Station. The Space Shuttle Discovery is due to lift off in July 2010 from Kennedy Space Center and its mission will include the installation of AMS to the exterior of the space station, using both the shuttle and station arms.

"It wasn't easy to get a lift on the Space Shuttle from the Bush administration," says professor Samuel Ting, spokesperson of the experiment, "since during his administration all the funds for space research were concentrated on the Moon and Mars programmes and science on the ISS was a low priority. After spending 100 billion dollars on the ISS, it was worth making an effort to have good science there."

Last year both the US House of Representatives and Senate unanimously approved a bill requesting NASA to install AMS on the Space Station, which was finally signed by President Bush a month later (see previous Bulletin article http://cdsweb.cern.ch/record/1142551?ln=en).

The AMS is a cosmic ray particle physics detector based on technologies developed at CERN, where it is currently based (in Prévessin, Assembly Hall B867). It will examine fundamental issues about matter and the origin and structure of the Universe directly from space. Its main scientific goals are the search for dark matter, missing matter and antimatter, which overlaps with the scientific objectives of the LHC. "The difference– says professor Ting – is that the LHC will very carefully look into a region of energy limited by the collider's energy. In space there is no limit to energy".

The installation of AMS to the right side of the Station's truss will be quite a delicate operation. AMS will be lifted out of the Shuttle by the Shuttle's robotic arm and handed on to the Station's robotic arm, which will then install AMS in its location. Among the astronauts selected for this flight are the European astronaut Roberto Vittori, a colonel in the Italian Air Force with a degree in physics, who will come to CERN in October with the rest of the crew to learn more about the experiment. The data collected by AMS will be transmitted instantaneously from the ISS to the Marshall Space Flight Center in Huntsville, Alabama, and finally to CERN, where all the detector controls and physics analyses will be performed.

The crew of the Space Shuttle flight to carry AMS to the ISS:
Commander: Navy Capt. Mark Kelly
Pilot: Retired Air Force Col. Gregory H. Johnson
Mission Specialists: Air Force Col. Michael Fincke, Greg Chamitoff and
Andrew Feustel. European Space Agency astronaut and Italian Air Force
Col. Roberto Vittori.

A video of AMS installation (courtesy of NASA) is available at the following URL:
http://www.cern.ch/project-tv
- AMS at NASA :
http://www.nasa.gov/mission_pages/station/science/experiments/AMS-02.html

Installation of AMS detectors in the Prévessin experiment hall.

CERN celebrates André Martin's 80th birthday

On 27 August 2009 CERN's Main Auditorium was the venue for a celebration in honour of André Martin's 80th birthday. Regarded as one of the most important theoretical physicists of his generation, André Martin is one of CERN's most distinguished figures. The celebration began with a conference, followed by a concert and a reception.

After the conference, André Martin made an emotional speech looking back over his fifty-year career and paying tribute to all those who had made important contributions during his time at CERN. "I was extremely happy, and I am very touched by this marvellous celebration you have organised for me. It was a wonderful idea, and I very much enjoyed the concert of Blandine Eynaud and John Devore. My wife, Schu, and I love the music of Gabriel Fauré", he said at the end.

André Martin joined CERN in 1959 as a Fellow in the Theory Division and became a permanent CERN theorist in 1964. He was awarded the Gian Carlo Wick Gold Medal on 20 August 2007 in recognition of his work on the total cross-section for interactions between two particles and his contributions to the understanding of heavy quark-antiquark systems. He retired in 1994 but continues his work as a theoretical physicist at CERN.

André Martin, pictured at the ceremony held in honour of his 80th birthday.

Open Day at the World Trade Organization

On Sunday 6 September, the World Trade Organization will open its doors to the public. Throughout the day there will be guided tours of the building, which will reveal the many works of art donated by countries over the years; on the main terrace, food stands will give visitors a flavour of the worldwide membership of the WTO and provide the opportunity to sample regional specialities; and children can have fun with face painting, a bouncy castle and a drawing contest on the theme "Draw me globalization" and/or "Draw me the WTO".

The full programme of activities is available at:
http://www.wto.org/english/forums_e/open_day_e/open_day09_e/programme_e.pdf

Official news

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.

ANNUAL REPORT OF THE PENSION FUND

The 2008 Annual Report and Accounts of the Pension Fund, which were approved by theCouncil at its session of 19 June 2009, are now available from Departmental secretariats.

The document is also available on the Pension Fund website:

http://pensions.web.cern.ch/Pensions/

Pension beneficiaries can obtain the document from Emilie Clerc (tel. + 41 22 767 87 98), Building 5-5/017.

Secretariat of the Pension Fund
72742

GENERAL MEETING OF THE PENSION FUND

All members and beneficiaries of the Pension Fund are invited to attend the

Annual General Meeting to be held

in the CERN Council Chamber
on Wednesday 9 September 2009
from 14:00 to 16:30 p.m.

The Agenda comprises:

1. Opening Remarks - F. Ferrini
2. Results and presentation of the Annual Report 2008. - C. Cuénoud

   Recent evolution of financial markets. 2009-2010 work plan - T. Economou.

   Copies of the 2008 Report are available from Departmental secretariats.
3. Report on funding policy and principles of the Pension Fund: Working Group 2 Report. - F. Ferrini
4. Questions from members and beneficiaries

   Persons wishing to ask questions are encouraged to submit them, where possible, in writing in advance, addressed to the Secretariat of the Pension Fund.
5. Conclusions - F. Ferrini

As usual, participants are invited to drinks after the meeting.

NB The minutes of the 2008 General Meeting are available from the Administration of the Fund (tel. + 41 22 767 27 42 ; e-mail Sevda.Budun-Kocaturk@cern.ch

FOR A NEW CHALLENGE: JOBS @ CERN

Did you realise that there are often new opportunities in many areas at CERN? Take a look at the HR website and spread the word! Currently there are positions open in the following activities:

5 Physicists / 26 Engineers / 7 Technical Engineers / 23 Technicians / 15 Administrative work

For further information and to apply, please go to:

http://www.cern.ch/jobs

HR Department

Take note

TECHNIQUES DE L'INGÉNIEUR, A LONG-AWAITED RESOURCE

Since 1 August 2009, a new online resource *Les techniques de l'Ingénieur* has been available at CERN: and its corpus of over 4,000 articles covering 11 disciplines is now accessible from your computer.

This multidisciplinary database covers many subjects ranging from mechanics to the environment. The articles are written by scientific experts recognized in their fields. Online access includes the archives since 1946; it also serves to monitor the latest trends and innovations, and new industry products. This database is therefore both a valuable resource in past and present scientific and technological information and a tool to observe future developments.

Anyone can create a free account on this resource. This account is needed to configure your personal alerts and download pdf files of the documents you are interested in.

More information on the Library website:

http://library.web.cern.ch/library/Library/techniques.html

Direct access to the database:

http://www.techniques-ingenieur.fr/home.html

Take note

ACCU MEETING

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

1. Chairman's remarks
2. Adoption of the agenda
3. Minutes of the previous meeting
4. Matters arising
5. News from the CERN Management
6. Code of conduct
7. Equal Opportunities at CERN
8. An update on safety at CERN
9. The CERN shuttle service
10. Reports from ACCU representatives on other committees
11. Users' Office news
12. Other business
13. Agenda of the next meeting

Anyone wishing to raise any points under item 12 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 on ACCU are (CERN internal telephone numbers in brackets):

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

The 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. Tiirakari 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/

Management & Communication training

CERN MANAGEMENT & COMMUNICATION TRAINING PROGRAMME

Timetable of courses from September to December 2009

Please check our web site to find out the number of places available, which may vary.

Management Curriculum

Project Scheduling & Costing	3, 4 September	(2 places available)
Communicating Effectively – Residential	15, 16, 17 September	(6 places available)
Personal Awareness & Impact – Follow-up	17, 18 September	(full)
Project Management	22, 23 September	(full)
Personal Awareness & Impact	22, 23, 24 September	(full)
Introduction to Leadership	7, 8, 9 October	(full)
Managing Teams	10, 11, 12 November	(full)

Communication Curriculum

Managing Time	22 September + 27 October + 18 November	(3 places available)
Making presentations	14, 15 October + 9 November	(Full)
Communiquer efficacement dans votre équipe	19, 20 octobre	(complet)
Communiquer efficacement	21, 22 octobre + 9, 10 novembre	(complet)
Techniques d'exposé et de présentations	10, 11 novembre + 8 décembre	(1 place disponible)
Service Orientation/Orientation service	12, 13 November/novembre	(5 places available/disponibles)

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=300

Management & Communication programme
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TECHNICAL TRAINING
technical.training@cern.ch

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				
C++ Programming Part 1 - Hands-On Introduction	26-Oct-09	28-Oct-09	3	English
C++ Programming Part 2 - Advanced C++ and its Traps and Pitfalls	3-Nov-09	6-Nov-09	4	English
CERN openlab Multi-threading and Parallelism Workshop	11-Nov-09	12-Nov-09	2	English
CERN openlab/Intel Computer Architecture and Performance Tuning Workshop	6-Oct-09	7-Oct-09	2	English
Developing secure software	14-Sep-09	14-Sep-09	0.5	English
Emacs - way beyond Text Editing	29-Oct-09	29-Oct-09	1	English
Intermediate Linux System Administration	19-Nov-09	24-Nov-09	4	English
ITIL Foundations (version 3)	14-Sep-09	16-Sep-09	3	English
ITIL Foundations (version 3)	12-Oct-09	14-Oct-09	3	English
ITIL Foundations (version 3)	18-Nov-09	20-Nov-09	3	English
JAVA - Level 1	12-Oct-09	14-Oct-09	3	English
JAVA - Level 2	16-Nov-09	19-Nov-09	4	English
JAVA 2 Enterprise Edition - Part 1: Web Applications	22-Oct-09	23-Oct-09	2	English
JAVA 2 Enterprise Edition - Part 2: Enterprise JavaBeans	28-Sep-09	30-Sep-09	3	English
JCOP - Finite State Machines in the JCOP Framework	29-Sep-09	1-Oct-09	3	English
JCOP - Finite State Machines in the JCOP Framework	10-Nov-09	12-Nov-09	3	English
JCOP - Joint PVSS-JCOP Framework	5-Oct-09	9-Oct-09	4.5	English
JCOP - Joint PVSS-JCOP Framework	23-Nov-09	27-Nov-09	4.5	English
Oracle - Advanced SQL	19-Oct-09	21-Oct-09	3	English
Oracle - Programming with PL/SQL	28-Sep-09	30-Sep-09	3	English
Oracle - SQL	16-Sep-09	18-Sep-09	3	English
Oracle Database 10g: SQL Tuning	07-DEC-09	09-DEC-09	3	English
Oracle Databases: Advanced PL/SQL Programming	2-Nov-09	4-Nov-09	3	English
Project Development using Python	01-DEC-09	04-DEC-09	4	English
Python - Hands-on Introduction	23-Sep-09	25-Sep-09	3	English
Web Applications with Oracle Application Express (APEX) 3.2	16-Nov-09	18-Nov-09	3	English
ELECTRONIC DESIGN				
Advanced VHDL for FPGA Design	30-Nov-09	04-DEC-09	5	English
Altium Designer 6.0 - Foundation & Board Implementation	16-Sep-09	24-Sep-09	5	French
Comprehensive VHDL for FPGA Design	12-Oct-09	16-Oct-09	5	English
Electromagnetic Compatibility (EMC) : Introduction	17-Sep-09	17-Sep-09	0.5	Bilingual
Electromagnetic Compatibility (EMC): Applications	23-Sep-09	23-Sep-09	0.5	Bilingual
LabVIEW Basic I with RADE introduction	30-Nov-09	02-DEC-09	3	English
LabVIEW Basic I with RADE introduction	28-Sep-09	30-Sep-09	3	French
LabVIEW Basics 2	03-DEC-09	04-DEC-09	2	English
LabVIEW FPGA cRIO	2-Nov-09	4-Nov-09	3	French
LabVIEW Intermediate 1	26-Oct-09	28-Oct-09	3	French
LabVIEW Intermediate II with RADE applications	29-Oct-09	30-Oct-09	2	French
Siemens - STEP7 : level 1	27-Oct-09	30-Oct-09	4	French
Siemens - STEP7 : level 2	14-Sep-09	18-Sep-09	5	English
MECHANICAL DESIGN				
AutoCAD 2009 - level 1	23-Sep-09	2-Oct-09	4	French
AutoCAD Electrical 2009	5-Oct-09	4-Nov-09	5	French
CATIA V5 -- Drafting Advanced	6-Nov-09	13-Nov-09	2	French

Technical training

Marie-Laure LECOQ 74924
ENSEIGNEMENT TECHNIQUE
TECHNICAL TRAINING
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CATIA V5 – Surfacique 1	2-Oct-09	9-Oct-09	2	French
CATIA-Smarteam Level 1	28-Sep-09	13-Oct-09	6	French
CATIA-Smarteam Level 1	14-Oct-09	29-Oct-09	6	French
CATIA-Smarteam Level 2	4-Nov-09	20-Nov-09	7	French
CATIA-Smarteam Level 2	25-Nov-09	11-DEC-09	7	French
SmarTeam - CATIA data manager at CERN	15-Oct-09	30-Oct-09	3	French
SmarTeam - CATIA data manager at CERN	9-Nov-09	27-Nov-09	3	French
OFFICE SOFTWARE				
A hands-on overview of EVO	9-Nov-09	9-Nov-09	0.5	English
ACCESS 2007 - Level 1 : ECDL	14-Sep-09	15-Sep-09	2	French
CERN EDMS - Introduction	21-Sep-09	21-Sep-09	1	English
CERN EDMS - Introduction	14-Sep-09	14-Sep-09	1	French
EXCEL 2007 - level 1 : ECDL	8-Oct-09	9-Oct-09	2	French
EXCEL 2007 - Level 2: ECDL	16-Nov-09	17-Nov-09	2	English
EXCEL 2007 (Short Course I) - HowTo... Work with formulae	9-Nov-09	9-Nov-09	0.5	Bilingual
EXCEL 2007 (Short Course II) - HowTo... Format your worksheet for printing	9-Nov-09	9-Nov-09	0.5	Bilingual
EXCEL 2007 (Short Course III) - HowTo... Pivot tables	10-Nov-09	10-Nov-09	0.5	Bilingual
EXCEL 2007 (Short Course IV) - HowTo... Link cells, worksheets and workbooks	10-Nov-09	10-Nov-09	0.5	Bilingual
Introduction to Dreamweaver MX	26-Oct-09	27-Oct-09	2	French
Novelties of EXCEL 2007	23-Oct-09	23-Oct-09	1	Bilingual
Novelties Office 2007: POWERPOINT 2007	13-Nov-09	13-Nov-09	1	Bilingual
Novelties Office 2007: WORD 2007	22-Oct-09	22-Oct-09	1	Bilingual
Office 2007 - Novelties	27-Nov-09	27-Nov-09	1	Bilingual
OUTLOOK 2007 (Short Course I) - E-mail	5-Nov-09	5-Nov-09	0.5	Bilingual
OUTLOOK 2007 (Short Course II) - Calendar, Tasks and Notes	5-Nov-09	5-Nov-09	0.5	Bilingual
OUTLOOK 2007 (Short Course III) - Meetings and Delegation	6-Nov-09	6-Nov-09	0.5	Bilingual
Project Planning with MS-Project	9-Nov-09	13-Nov-09	2	French
Sharepoint Collaboration Workspace	12-Oct-09	13-Oct-09	2	English
Sharepoint Collaboration Workspace	30-Nov-09	01-DEC-09	2	French
Sharepoint Designer (Frontpage) - Level 2	19-Oct-09	20-Oct-09	2	French
Sharepoint Designer (Frontpage)- Level 1	07-DEC-09	08-DEC-09	2	English
Sharepoint Designer (Frontpage)- Level 1	21-Sep-09	22-Sep-09	2	French
Videoconferencing and collaborative tools	9-Nov-09	9-Nov-09	0.5	French
WORD 2007 - level 1 : ECDL	15-Oct-09	16-Oct-09	2	French
WORD 2007 - level 2 : ECDL	19-Nov-09	20-Nov-09	2	French
WORD 2007 (Short Course II) - HowTo... Mail merge (with Outlook)	12-Nov-09	12-Nov-09	0.5	Bilingual
WORD 2007 (Short Course III) - Working with long document: styles and tables of contents	12-Nov-09	12-Nov-09	0.5	Bilingual
SPECIAL COURSE				
Designing effective websites	8-Oct-09	9-Oct-09	2	English
Egroups training	20-Oct-09	20-Oct-09	0.5	English
Egroups training	2-Oct-09	2-Oct-09	0.5	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: employees of CERN contractors, with some restrictions). In particular, quoted prices and programmes refer specifically to the CERN community.

Language training

GENERAL AND PROFESSIONAL ENGLISH COURSES

The next session will take place:

From 5th October 2009 to 5th February 2010 (2 weeks break at Christmas).

These courses are open to all persons working on the CERN site, and to their spouses.

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

http://cern.ch/Training

or contact Nathalie Dumeaux, tel. 78144.

Oral Expression

The next session will take place from 5th October 2009 to 5th February 2010 (2 weeks break at Christmas).

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

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

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

Writing Professional Documents in English

The next session will take place from end of $eptember to end of January 2010 (2 weeks break at Christmas).

This course is designed for people with a good level of spoken English who wish to improve their writing skills.

The timetable will be fixed after discussion with the students.

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

http://cern.ch/Training

or contact Mrs Dumeaux: Tel. 78144.

or Tessa Osborne: Tel. 72957

Formation en langues - Language Training
Cours d'anglais - English courses
Nathalie Dumeaux Tél. 78144
nathalie.dumeaux@cern.ch

GENERAL AND PROFESSIONAL FRENCH COURSES

The next session will take place **from 12 October to 18 December 2009**.

These courses are open to all persons working on the CERN site, and to their spouses.

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

http://cern.ch/Training

or contact Mrs. Nathalie Dumeaux : Tel. 78144.

Language Training
French Training
Nathalie Dumeaux Tel. 78144
nathalie.dumeaux@cern.ch

Seminars

MONDAY 7 SEPTEMBER

CONFERENCES & WORKSHOPS

08:00 - Main Auditorium, Bldg. 500

COSMO 09

R. DURRER, G. DVALI, J. ELLIS, G. GIUDICE, J. LESGOURGUES, A. RIOTTO, M. SHAPOSHNIKOV

COMPUTING SEMINAR

10:30 - Room B, Bldg. 61-1-009

An Introduction to Drupal 7/Ms

A. BYRON / LULLABOT

TUESDAY 8 SEPTEMBER

TECHNICAL PRESENTATION / PRÉSENTATION TECHNIQUE

10:00 - 12:00 - Room A, Bldg 61-1-017

Leuze Electronics

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

String Cosmology parallel session within Cosmo09 conference

TECHNICAL PRESENTATION

14 : 00 - Main Building, Room A, 61-1-017

SEMIC RF Electronic GmbH & Orient Microwave Corporation

WEDNESDAY 9 SEPTEMBER

TH THEORETICAL SEMINAR

14:00 - TH Auditorium, Bldg. 4 3-006

From linear SUSY to constrained superfields

N. SEIBERG / IAS

CERN COLLOQUIUM

15:30 - Main Auditorium, Bldg. 500

The Creation of the Universe

STEPHEN HAWKING / UNIVERSITY OF CAMBRIDGE

MONDAY 14 SEPTEMBER

TH INSTITUTES

08:00 - TH Auditorium, Bldg. 4

Particle Cosmology

G. DVALI, J. ELLIS, G. GIUDICE, J. LESGOURGUES, A. RIOTTO / CERN, S. HANNESTAD / AARHUS, E. KOLB, G. STARKMAN

TUESDAY 15 SEPTEMBER

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA

D. BERENSTEIN

WEDNESDAY 16 SEPTEMBER

TH THEORETICAL SEMINAR

14:00 - TH Auditorium, Bldg. 4

RESERVED FOR THE PARTICLE COSMOLOGY WORKSHOP

THURSDAY 17 SEPTEMBER

TH PHENCLUB

11:00 - Bldg. 1-1-025

TBA

B. GRINSTEIN