CERN Bulletin

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Starry nights over CLIC

Sébastien Guillaume during the zenith camera installation.

To meet the alignment requirements for CLIC, the future linear accelerator project, CERN's surveyors have started an unprecedented campaign of measurements.

On a beautiful summer's night, Sébastien Guillaume sets up his camera equipment in the middle of the countryside and turns his lens towards the heavens, ready to spend a night photographing stars. He is neither an amateur astronomer, nor a contemporary artist looking for inspiration for an unusual work of art. The young man is in fact a PhD student in geodesy from ETH Zurich, doing research in the domain of ultra-precise measurements. To this end, he has embarked on an unprecedented campaign of measurements, together with the CERN surveyors. His goal: to show that the components of CLIC, the future electron-positron collider project, can be aligned with a precision of 10 microns (one-hundredth of a millimetre) over a distance of 200 metres. This objective may sound a little bland, but in reality achieving such a level of precision will require incredibly complex technology. Take the LHC for example: its components are aligned with a precision of approximately 0.15 mm over 100 m, which is already a remarkable achievement. CLIC needs 15 times greater alignment precision. That is the challenge facing CERN's surveying section (part of the BE/ABP Group).

One of the thorniest problems they have to face is that their measuring instruments are sensitive to the Earth's gravity. That affects in particular the ultra-precise optical levels and theodolites used for aligning accelerator components. The alignment systems currently envisaged for CLIC are no exception: long wires for horizontal positioning, and hydrostatic levelling sensors for vertical positioning. Now, the accelerator design is defined in a system of Cartesian coordinates that is independent of gravity. It is therefore important to describe the gravitational field

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A word from the DG

Making more space for more people

The upcoming operation of the LHC is attracting and will continue to attract more and more researchers. To ensure that we are able to cope with this influx, our technical services have been busy increasing the office space available on the CERN site. On 9 September, an important milestone in this process was passed when we laid the foundation stone of Building 42, which will provide 300 additional workstations for scientists analysing the LHC data, in addition to the 800 already available in the adjoining Building 40. With this building, CERN has "gone green". And not just because the scientists will be able to admire

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In this issue

News

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Starry nights over CLIC

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precisely within this purely mathematical system. The job would be straightforward if the gravitational field formed a perfect surface, e.g. an ellipsoid. But this is not the case; rather, the field varies due to the uneven way in which masses are distributed at the surface of the Earth and below. In order to correct their instruments' measurements for the effects caused by these gravitational anomalies, surveyors therefore need to determine the shape of the "geoid", which is a surface formed by all the points at which the gravitational potential energy is the same (corresponding to the value of the potential energy at mean sea level). The shape of the geoid in this region is currently known sufficiently well to permit a relative precision of a few tenths of a millimetre for several hundred metres. "Our hope is to determine its shape to within a few microns," says Mark Jones, one of CERN's surveyors, who is supervising the project. The necessary measurements will be made over a limited surface. To test the feasibility, the team decided to work directly above an 800-metre tunnel called TZ32. The tunnel, which was excavated as part of the LEP civil engineering preparations, connects to point 3 on the LHC's underground ring.

But let's get back to our stars: what are they doing in such a down-to-earth measurement project? The precise position of certain stars is known to within a millisecond of arc (that's roughly the angle formed by a fly-sized object, seen from a distance of a thousand kilometres!). By photographing these stars with a zenith camera, it is possible to determine the precise direction of the local vertical (determined by gravity) for a point on the surface that can be located to within one or two centimetres by GPS. By comparing this local vertical (which is physical) with a mathematical model (an ellipsoid) of the gravitational field, it is possible to determine the difference between the two (the deviation of the vertical). This measurement can then be combined with gravity measurements that have already been carried out and with a geological density model to establish a new geoid. "There are only two cameras of this type in the world," notes Guillaume. "But we have tried to modify this one to make it even more precise."

The PhD student plans to take 80 measurements along the 800 metres, meaning quite a few sleepless nights over the summer period. Once the measurements are done, he will need to transfer them down to a point 100 metres below. In this way, he hopes to demonstrate that the required degree of precision can be achieved. "The experts are a bit dubious, "concedes Sébastien Guillaume, but he doesn't let that concern him. It won't be the first time that CERN's surveyors have risen to a challenge, although it may be the first time that they aim for the stars!

A word from the DG

(Continued from page 1)

Making more space for more people

the beautiful Satigny countryside through their windows - this building will be more environmentally friendly than any other we have built, equipped with features such as a green roof, enhanced insulation and automatic sun blinds.

We need to increase our office space not only to cope with greater numbers of visiting scientists but also to open our doors to new countries wishing to strengthen their links with the Organization. This also means that we will have to adapt the infrastructure used by the representatives of these States. We have therefore started thinking about possible solutions, such as the construction of a new Council Chamber and a new auditorium.

More generally, we have launched a major building renovation campaign. Anyone who takes a walk around CERN's sites can see that renovation is no luxury, but an absolute necessity. Most of our buildings date back to the 1950s and 60s and have had only minimal maintenance since all our resources go into science. Nevertheless, we need to ensure decent working conditions for everyone on the site. And for old as well as new buildings, all our decisions must be guided by the need to respect the environment.

All this consolidation comes at a high cost. This is something we have to accept, but thankfully we can always rely on the support of the Host States - the Swiss Confederation has supported our loan application to finance Building 42 via the *Fondation des immeubles pour les organisations internationales* (FIPOI); the plots have been kindly made available by the Canton of Geneva; and the communes on both the Swiss and French sides have played host to our infrastructures for over 50 years. The foundation stone-laying ceremony was a good occasion for me to warmly thank the representatives of the Confederation, the Geneva State Council, FIPOI and the various communes for their unfailing support for CERN as it has grown to become the large and busy Laboratory it is today.

Rolf Heuer

Ceremony for the laying of the foundation stone of Building 42. From left to right: Jacques Perret, architect responsible for Building 42, Rolf Heuer, CERN Director-General, Laurent Moutinot, Geneva State Councillor in charge of the Institutions Department, Mauro Dell'Ambrogio, State Secretary for Education and Research, and Roland Sansonnens, Mayor of Meyrin.

Nature is far more imaginative than human beings!

Is today's science fiction really tomorrow's science fact (*)? If you remember the Star Trek TV series, you will have noticed that extra-dimensions are becoming more plausible than you could have imagined when Captain Kirk was leading the Enterprise. Lawrence Krauss, author of "The Physics of Star Trek", visited CERN on 28 August and told us how the LHC inspires him both as a scientist and as a writer.

Wearing his cosmologist's hat, Lawrence Krauss met the CERN audience in the Main Auditorium and gave a colloquium entitled "Cosmology as Science? From Inflation to Eternity" http://indico.cern.ch/conferenceDisplay.py?confId=60276). Wearing his other hat of bestselling writer, he told us that he finds the LHC a very inspiring human adventure. "The LHC and its experiments", he says, "represent how science can span and bridge human cultures and interests, focusing for an incredibly intense period on questions which may seem esoteric but in some way will give us insights into our place in the Universe".

CERN science has inspired many writers, from Dan Brown (Angels and Demons) to R. Sawyer (Flash Forward), as well as other less well-known authors. Krauss has not written a book about the LHC yet, but when, a year ago, he revised "The Physics of Star Trek", he wrote that the LHC was one of the most inspiring things in human history in terms of bringing human beings and scientists from around the world together.

"When I wrote the first edition of the book", he explains, "I already mentioned the fact that physicists were actually searching for remote extra dimensions. However, at that time, extra dimensions were thought to be very small, whereas now scientists think that they might be big enough to contain aliens and other civilizations. This is very similar to what happens in Star Trek and, indeed, it's one area I've changed a lot in the second edition of my book".

Unfortunately, unlike Krauss, some science-fiction writers go much further and imagine things – often dangerous to humanity or excessively obscure – that will simply never happen but that are likely to capture people's attention. "The links between science and science fiction are often overstated", says Krauss. "Despite the fact that I wrote one of the first science-fiction-related books that later inspired a whole new genre, I think that science fiction should be considered simply as a way to encourage people to learn about the real Universe. People are intimidated by science and afraid of it or bored by it but they are not intimidated by science fiction. There are a few examples where science fiction came up with things that later actually came true but I don't believe in the causal relationship that some people make a big deal of. In fact, science fiction often misses the things that are the most important. For example, science-fiction writers in the 1960s never thought of the Web. It came out of CERN and has changed our civilization more than almost anything else. The real Universe is far more fascinating than anything that science-fiction writers have ever come up with or will ever come up with, and Nature is far more imaginative than human beings".

The full video interview with Lawrence Krauss is available at:

http://cdsweb.cern.ch/record/1203557

(*) Stephen Hawking in the foreword of the "Physics of Star Trek"

The Latest from the LHC: Switching on the magnets

The architecture of the LHC, which is partitioned into eight cryogenically and electrically independent sectors, allows the commissioning of the machine on a sector-by-sector basis. When a sector reaches nominal cryogenic conditions (-271.3 °C or 1.9 K), and provided that the control systems (Quench Detection System and Powering Interlock Controllers) work correctly and give the clearance, powering tests can be performed on the magnets. Currently, three sectors are at nominal cryogenic temperature and powering tests are being carried out in all three of them.

Current began to flow in the magnets of **Sector 1-2** at the end of August. This week, the sector was the first to be powered with the new, recently installed Quench Detection System (QDS).

Magnet powering tests have also started in two other sectors, namely **Sectors 5-6 and 7-8**, where the new QDS is being installed. The two sectors are now ready for tests with higher current – the so-called Powering Phase II.

Access conditions for powering

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ACCELERATOR MODE : SECTOR DEPENDENT

	SECTOR MODE	LASS OK FOR PH2
SECTOR 12	PO PHASE 1	
SECTOR 23	COOLDOWN	
SECTOR 34	COOLDOWN	
SECTOR 45	COOLDOWN	
SECTOR 56	PO PHASE 1	
SECTOR 67	COOLDOWN	
SECTOR 78	PO PHASE 1	
SECTOR 81	COOLDOWN	

Current status of LHC sectors.

Prince Albert II of Monaco visits CERN

With a strong curiosity for the work of CERN, HSH Prince Albert II of Monaco visited CMS and the CERN Control Centre on 2 September.

"The Prince is interested in and sensitive to what CERN is doing. Monaco is closely linked to France, which is an important member of CERN. He wishes to express his help to the scientific community in every trip. He wants to meet scientists and to be really personally involved," explained Francois Chantrait, DHead of the Press Service of the Prince's Palace.

CERN Director-General Rolf Heuer welcomed the Prince of Monaco to Point 5 with a presentation about CERN before they descended 100 metres underground to see the CMS experiment. Although the detector was closed up for test runs, he was able to see its grand scale as well as look at some of the intricate sample parts exhibited by CMS Spokesperson, Jim Virdee.

The Prince wrote in the CERN Visitors' Book that he perceives a realisation of promising research in particle physics and, even here on the Swiss-French border, a harmonious collaboration that is not just European but international. He salutes CERN's determination, courage and ambition, as well as the enormous opportunities for collaborating with science and industry.

Hadron Dragons strike again

The CERN Dragon Boat team – the Hadron Dragons – achieved a fantastic result at the "Paddle for Cancer" Dragon Boat Festival at Lac de Joux on 6 September.

Under blue skies and on a clear lake, the Hadron Dragons won 2nd place in a hard-fought final, following top times in the previous heats. In a close and dramatic race – neck-and-neck until the final 50 metres – the local Lac-de-Joux team managed to inch ahead at the last moment.

The Hadron Dragons were delighted to take part in this festival. No one would turn down a day out in such a friendly and fun atmosphere, but the Dragons were also giving their support to cancer awareness and fund-raising in association with ESCA (English-Speaking Cancer Association of Geneva).

Riding on their great success in recent competitions, the Hadron Dragons plan to enter the last Dragon Boat festival of 2009 in Annecy on 17-18 October. This will coincide with the *Coupe de France* finals, and this will be a great chance to race alongside and see some of the best teams in France battling it out. If you are interested in taking part, please contact Cath Noble at club.kayak@cern.ch for more information.

The Hadron Dragons were: Cath Noble (Team Captain), Anna Schroeder, Elias Alvarez Granda, Frank Peters, Gilbert Dulac, Gilles Garet, Guy Crockford, John Hefferman, Kate Kennedy, Matthias Schroeder, Miriam Munoz (drummer), Miroslava Senajova, Pierre Maesen, Pierre Ninin, Slavomir Kubacka, Timothée Garet, Viliam Senaj and Winnie Wong.

CERN Hadron Dragons heading for the start line.

Another way of managing large amounts of data

Jeff Hammerbacher is Vice President of Products and Chief Scientist at Cloudera, a US software company that provides solutions for managing and analysing very large data sets. His invited talk on 21 August was a good opportunity to exchange views with the CERN experts who face similar problems.

Although still relatively young, Jeff has considerable experience in developing tools for storing and processing large amounts of data. Before Cloudera Jeff conceived, built and led the Data team at Facebook. He has also worked as a quantitative analyst on Wall Street. Jeff holds a Bachelor's Degree in mathematics from Harvard University.

At CERN, handling large amounts of data is the job of the Grid; Hadoop, the software Cloudera is developing, is intended for the same scope but has different technical features and implementations. "The Grid software products are designed for many organisations to collaborate on large-scale data analysis across many data centres. In contrast, Hadoop is designed to optimize large-scale data storage and processing for a single organisation using many servers in a single data centre", explains Jeff. "We do not use Grid software at Cloudera. However, at the University of Nebraska-Lincoln, they export data stored in their Hadoop cluster to "the Grid" via the GridFTP software (see http://www.cloudera.com/blog/2009/05/01/high-energy-hadoop/ for more details), so there is some opportunity for Hadoop clusters to serve as a single site within a larger Grid".

A lot of research and development has been carried out in several high-energy physics (HEP) laboratories to solve the problem of the increasing amount of data flow and the LHC will be a very powerful test bench with its 15 petabytes of data produced every year. "At Cloudera, we've been in close contact with a few HEP labs storing hundreds of terabytes of data in HDFS, the storage component of the Hadoop software. In fact, HDFS is now installed at 2 CMS Tier2 sites in the US, 2 CMS Tier3 sites, and at 1 non-LHC Grid site", says Jeff. "Given the success of Hadoop at other sites, we have reason to believe that the experts at CERN will find some value in the software".

The core of Cloudera's offerings is based on open source software. Why? "In my experience, a talented team in a vacuum cannot produce great, mature software," says Jeff. "You need a difficult problem to serve as a foil. Making your code open source provides the best means of exposing software to demanding users and difficult problems. Building a map of all documents and links on the web was an immense problem that Yahoo! was able to solve with Hadoop, and the project is far better today because of it. Similarly, building a multi-petabyte data warehouse with millions of users was a problem Facebook was able to solve with Hadoop, and the rest of the community now benefits from their contributions.

Another reason open source software is at the core of our offerings is our belief in intellectual honesty and showing your work. No matter what you read, you can always download the source of our distribution of Hadoop and try things out for yourself. The team at Yahoo! has done a great job benchmarking Hadoop (breaking world records in the process, see http://developer.yahoo.net/blogs/hadoop/2009/05/hadoop_sorts_a_petabyte_in_162.html for details) and making their benchmarking code and configuration available for you to run yourself. If you're going to store petabytes of data for many years, that sort of transparency is critical. In this regard, the value of open source is similar to the value of reproducible research in science".

Jeff's visit to CERN was the opportunity to start an informal collaboration between CERN and Cloudera. "We're all big data junkies at Cloudera, having come from places like Google, Facebook, and Yahoo!, and we're always on the lookout for bigger data problems to solve—and it doesn't get much bigger than the LHC!" he concludes.

A video of Jeff Hammerbacher's presentation at CERN is available at:
http://indico.cern.ch/conferenceDisplay.py?confId=59791

Neutrino physics in the spotlight

Following on from the Council recommendation made in Lisbon in 2006 and responding to the needs of a large community of scientists, CERN will organize the European Strategy for Future Neutrino Physics workshop on 1-3 October. One of the main goals of the workshop is to start establishing a roadmap for the coherent participation of Europe in neutrino physics.

"The format of the workshop will consist of invited talks to present the current situation and future possibilities; unlike other workshops, 30% of the time will be reserved for discussion", explains Ewa Rondio from the organising committee. "Resources for future neutrino experiments will be difficult to acquire. A coordinated approach and the participation of a large community of interested scientists are undoubtedly crucial factors".

The workshop will be the opportunity to highlight the areas where substantial research and development activities are required in order to design the facilities of the next decade. "The workshop is an important tool to bring to light the synergies existing between neutrino physics and other areas of physics, such as cosmology and nuclear physics", adds Rondio. A poster session will be included, particularly to encourage the participation of younger members of the neutrino community.

"The next steps in neutrino physics will require a very large effort both on the accelerators and the detectors, which demands coordination of efforts at a global level, in terms of R&D and resources planning. The coming workshop will constitute a significant step to towards defining a consistent European strategy and the role of CERN in the future development of the field", says Sergio Bertolucci, CERN Director for Research and Scientific Computing.

Full information about the workshop is available at:

http://indico.cern.ch/conferenceDisplay.py?confId=59378

50 years CERN Courier Celebration

The 50th anniversary of the first publication of the CERN Courier provided the opportunity for a modest celebration on 2 September 2009. All six of the principal editors that the magazine has had over its 50-years history met together for the first time. After getting acquainted and reacquainted over lunch, they gathered in the library at CERN to answer questions about the production of the magazine over the years. From left to right, from the present editor to the first one: Christine Sutton, James Gillies, Gordon Fraser, Brian Southworth, Alec Hester and Roger Anthoine.

A jolly good call for Marie Curie Fellows

A new funding opportunity to train young researchers has just been announced by the European Commission. One of the calls within FP7 Marie Curie Actions requests proposals for Initial Training Network (ITN) projects, with a deadline of 22 December 2009. Project proposals are strongly encouraged at CERN and authors can receive support and guidance from the Marie Curie Steering Group.

ITN projects have one key aim: training. Academic and industrial partners work together to form a network to recruit and train Marie Curie Fellows. Fellows are young researchers (typically PhD-level) from any country who combine project-based research with tailor-made training programmes, gaining an unprecedented boost to their careers.

Winnie Wong, a Canadian doctoral student of microelectronics, arrived at CERN in 2006 as a Marie Curie Fellow on the ELACCO project. "The fellowship funding gave me training opportunities and access to resources that researchers don't normally have" says Wong. "I wouldn't have considered a PhD if I hadn't been a Marie Curie Fellow."

"It's the best of both worlds: training plus working in an international organisation", enthuses Dan Savu, a Romanian Marie Curie Fellow in the ATLAS data acquisition team. "I'll shortly be going on secondment to an American industrial partner of the ACEOLE project, as part of my training programme."

Winnie Wong: "I wouldn't have considered a PhD if I hadn't been a Marie Curie fellow"

Dan Savu: "It's the best of both worlds: training plus working in an international organisation"

CERN has had great success with Marie Curie Actions (see "Did You Know" box).

In addition to ITNs, there are individual Marie Curie Fellowships, and through the COFUND-CERN project CERN's fellowship programme receives EU funding for 40 CERN fellows. A recent proposal looks set to get the go-ahead for funding within the International Research Staff Exchange Scheme (IRSES) and decisions are expected soon for proposals within Industry-Academia Partnerships and Pathways (IAPP).

Project proposals are overseen by the Marie Curie Steering Group, comprising representatives from HR, the CERN-EU Office and the CERN Departments, and chaired by David Plane. "Participation in Marie Curie Actions is really win-win" says Plane. " A tremendous opportunity for young researchers and for CERN itself".

For details of CERN Marie Curie projects and the current ITN call, see http://cern.ch/cerneu/fp7/people/ or contact eu.projects@cern.ch.

Did you know?

Within EU Framework Programme 6 (2002 to 2006), CERN secured funding for 99 Marie Curie Fellowship contracts ranging from 3 months to 3 years – a total of 166 Fellow-years of additional resources. Since Framework Programme 7 began (2007), 74 Marie Curie Fellows have benefitted from partial or full EU funding, representing 133 Fellow-years.

Guy von Dardel 1919-2009

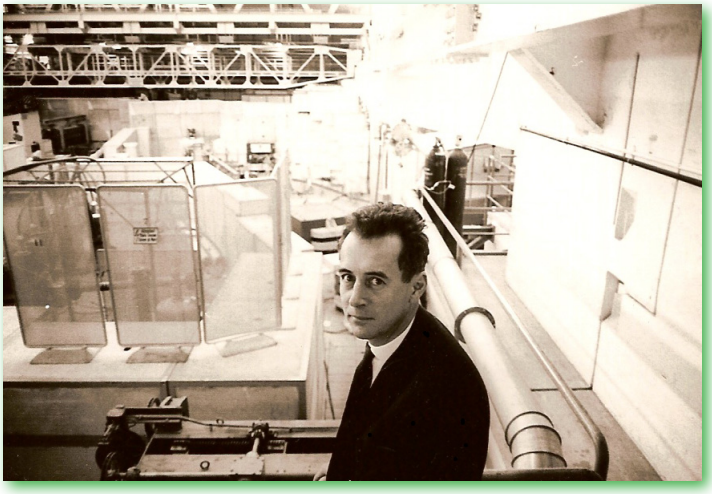
Guy von Dardel, a well-known figure at CERN and in the international particle physics community, passed away on 28 August.

Guy von Dardel came to CERN when it was founded in 1954 and was a full-time staff member until 1964, performing several experiments and working on technical developments. These included the first measurement of the neutral pion's life-time. Called to Lund University in 1964, he became professor there in 1965 and director of the 1.2 GeV electron accelerator.

In the late 1960s, he performed an experiment at CERN's PS that measured the decays of the Λ. Then, in the early 1970s, he involved the Lund group in a series of experiments at the Intersecting Storage Rings (ISR), where he measured the production of various types of particles. In particular, he participated in a series of experiments that observed the production of a high abundance of particles with large transverse momenta. This required an explanation in terms of a substructure in the colliding protons.

Guy von Dardel was chairman of the European Committee for Future Accelerators (ECFA) from 1976 to 1977. During this period he was instrumental in starting CERN's preparations for the Large Electron Positron (LEP) collider. He was later involved in the L3 experiment at LEP.

In the mid-1980s, together with James Cronin, he conducted a new version of the experiment that measured the lifetime of the neutral pion. The result was consistent with the first measurement, but with an order of magnitude better precision.



Guy von Dardel (Courtesy Len Sirman Press).

As a scientist, Guy von Dardel was Known for his large flow of ideas: ideas for physics experiments and ideas about instrumentation. He was also strong in providing rapid and rough estimates, an important ability when discussing new ideas. He was an inspiration for all those he worked with.

His half-brother Raoul Wallenberg disappeared at the end of the Second World War after having saved tens of thousands of Jewish lives. Guy von Dardel made countless journeys to the Soviet Union and Russia in an attempt to discover his brother's fate, and compiled an extensive archive on the subject.

We share our sorrow with his family and convey our deepest condolences to his wife Matilda and the rest of his family.

His colleagues and friends

Official news

CONTRACT POLICY FOR CERN STAFF MEMBERS

Public information meeting on Monday 28 September 2009 at 10.00 a.m.

With effect from 1 August 2009, new provisions regarding staff employment contract policy have entered into force. These provisions are set out in:

- The Staff Rules and Regulations (https://hr-docs.web.cern.ch/hr-docs/srr/srr.asp) and
- Administrative Circular No. 2 (Rev. 4) (https://hr-docs.web.cern.ch/hr-docs/admincirc/admincirc.asp).

Further details are available in:

- Frequently Asked Questions (https://cern.ch/hr-career/policies/staff_policy2009.asp).

The new provisions are outlined below:

Limited-duration contracts

From 1 August 2009, limited-duration contracts will be awarded for a maximum period of five years (instead of four years previously) and no extensions beyond five years will be granted.

Contracts for periods shorter than five years can be exceptionally awarded, e.g. for a project whose mission or financial resources are time-limited.

Indefinite contracts : award procedure

A number of changes have been introduced regarding the procedure for the award of indefinite contracts.

From now on, posts leading to the award of an indefinite contract will be opened at least twice a year and, for each post, a description of the technical competencies, functions, and the qualifications, experience and knowledge required will be published on the CERN intranet. The first release of indefinite contract posts is scheduled for the end of September/beginning of October 2009. Information will be available on-line shortly via the link "indefinite contract applications" (https://hr-recruit.web.cern.ch/hr-recruit/staff/IndefiniteContracts.asp).

If you are a staff member with a limited-duration contract and you have successfully completed your probation period:

- you may apply for one or more of these posts, provided you are suitably qualified;
- you may apply for posts in any Department.

Applications must be submitted via the CERN intranet during the publication period – the minimum publication period will be three weeks, and the application deadline will be indicated in the published post description.

After the application deadline, a shortlist of candidates will be drawn up by the Department opening the post and the HR Department. Only candidates:

- whose qualifications and technical skills best correspond to those defined in the post and
- whose limited-duration contract is still in force at the moment the decision on the award of an indefinite contract is taken;

will be considered for the shortlist.

Shortlisted candidates will be invited to an interview with a CERN-wide contract review board. The review board will be composed of one or more:

- member(s) of a Panel nominated by the Director-General;
- representative(s) of the Department opening the post;
- representative(s) of the HR Department;
- expert(s), where needed.

The Review Board will make a recommendation to the Director-General, who will decide on the award of an indefinite contract.

You are invited to consult the documentation indicated at the beginning of this article for further details.

The next release of indefinite contract posts is scheduled for Spring 2010.

The HR Department will hold a public meeting on Monday 28 September at 10.00 a.m. in the Main Auditorium, 500/1-001 (broadcasted also in the BE Auditorium, 864/1-D02) to explain the new provisions, and in particular the procedure for the award of indefinite contracts.

HR Department

NEW STATEMENT OF LEAVE FORMAT

Following the communication of the Standing Concertation Committee published in Weekly Bulletin No. 18-19 of 27 April 2009, the current statement of leave on monthly pay slips has been replaced with the EDH Leave Transactions report that displays the up-to-date situation of individual leave balances at all times. The report is available on EDH (https://edh.cern.ch/Info/AbsenceTransactions).

Additionally, the layout of the pay slip has been modernised. The new version of the pay slip will be send out from September 2009 onwards.

Finance and Purchasing Department, Personnel Accounting
Human Resources Department, Organisation and Procedures
General Infrastructure Services Department, Administrative Information Services

Official news

NEW SAFETY COURSE!

Do you need to know how to use the portable breathing apparatus ("Biocell") in order to work at CERN?

If so, you will need to sign up for a new course on how to use this personal protection system. The training starts with a refresher on how the Biocell works. You will then have an opportunity to use a training unit in realistic conditions simulating a tunnel incident: darkness, non-toxic smoke, the noise of a gas leak, an audible alarm to signal oxygen deficiency, and flashing hazard lights.

Once you have participated in this 90-minute training session (in French or English), you will know how to use your Biocell in the event of an emergency.

In the near future, completion of the course will become mandatory in order to obtain access rights for the LHC and SPS tunnels.

Register for the Biocell course through the Safety training catalogue at:

http://cta.cern.ch/cta2/f?p=110:9:4262544393185446::NO::X_LANGUAGE:EN

Contact: safety.training@cern.ch

Take note

PREPARATION FOR RETIREMENT SEMINAR

The Human Resources Department is organizing a **preparation for retirement seminar**, which will take place on the afternoons of the **11, 13, 25 and 27 November 2009**. Similar seminars in the past have always proved highly successful.

Retirement marks the end of a person's working life and the start of a new chapter. This period of transition is experienced differently from one individual to another. In all cases, being well-informed and prepared greatly facilitates the change in lifestyle.

We would like to draw your attention to the following information:

Staff concerned: All staff members aged 58 and above have been sent a personal invitation to attend. Spouses are welcome.

Staff members below 58 who are interested in attending the seminar may also apply. Their applications will be accepted subject to the availability of places.

Registration: In view of the number of people concerned and the limited capacity of the Main Auditorium, you are requested to register in advance via Indico at the following address:

http://indico.cern.ch/conferenceDisplay.py?confId=50273

You may register for all the sessions or only for the subjects of interest to you.

One afternoon each will be devoted to retirement in the Host States, Switzerland and France respectively. These two sessions are particularly designed for those:

- who are living in one of these countries, and
- who intend to take up residence there on retirement,
- who have worked and acquired pension rights there.

Presentations: The speakers will be experts from either within or outside the Organization. Each speaker will make a presentation, underlining the key points for future pensioners to note and/or take into account. They will then take questions. Most of the presentations will be given in French. However, you are welcome to put your questions in English. Members of the CERN-ESO Pensioners' Association (GACEPA) will attend each session and may possibly supplement the presentations with comments based on their own experience. The details of the (provisional) programme can be found at :

http://indico.cern.ch/conferenceDisplay.py?confId=50273

Questions: You may submit your questions **in advance** when you register via Indico. They will be transmitted to the speaker concerned to allow him to reply. Naturally, it will not be possible to discuss details of individual cases, for which the various internal and external services are available to you.

Documentation: The overhead presentations, the complete video recording and a summary of the question-and-answer sessions will be available on Indico at the same site as the programme.

Please also note that the brochure "When you leave CERN" is available on the Human Resources Department website at the following address:

https://cern.ch/hr-services/Int/doc/depart.pdf

If you envisage retiring in the coming two or three years, I strongly encourage you to register for this seminar.

Anne-Sylvie Catherin
Head of the Human Resources Department

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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

Business Objects Basic	5-Nov-09	6-Nov-09	French
C++ Programming Part 1 - Hands-On Introduction	26-Oct-09	28-Oct-09	English
C++ Programming Part 2 - Advanced C++ and its Traps and Pitfalls	3-Nov-09	6-Nov-09	English
CERN openlab Multi-threading and Parallelism Workshop	11-Nov-09	12-Nov-09	English
CERN openlab/Intel Computer Architecture and Performance Tuning Workshop	6-Oct-09	7-Oct-09	English
Emacs - way beyond Text Editing	29-Oct-09	29-Oct-09	English
Intermediate Linux System Administration	19-Nov-09	24-Nov-09	English
JAVA - Level 1	12-Oct-09	14-Oct-09	English
JAVA - Level 2	16-Nov-09	19-Nov-09	English
JAVA 2 Enterprise Edition - Part 1: Web Applications	22-Oct-09	23-Oct-09	English
JCOP - Finite State Machines in the JCOP Framework	29-Sep-09	1-Oct-09	English
JCOP - Finite State Machines in the JCOP Framework	10-Nov-09	12-Nov-09	English
JCOP - Joint PVSS-JCOP Framework	5-Oct-09	9-Oct-09	English
JCOP - Joint PVSS-JCOP Framework	23-Nov-09	27-Nov-09	English
Oracle - Advanced SQL	19-Oct-09	21-Oct-09	English
Oracle - Programming with PL/SQL	28-Sep-09	30-Sep-09	English
Oracle Database 10g: SQL Tuning	07-DEC-09	09-DEC-09	English
Oracle Databases: Advanced PL/SQL Programming	2-Nov-09	4-Nov-09	English
Project Development using Python	01-DEC-09	04-DEC-09	English
Python - Hands-on Introduction	23-Sep-09	25-Sep-09	English
Web Applications with Oracle Application Express (APEX) 3.2	16-Nov-09	18-Nov-09	English

ELECTRONIC DESIGN

Advanced VHDL for FPGA Design	30-Nov-09	04-DEC-09	English
AutoCAD Electrical 2009	5-Oct-09	4-Nov-09	French
Comprehensive VHDL for FPGA Design	12-Oct-09	16-Oct-09	English
DIAdem - basics	13-Oct-09	15-Oct-09	English
Electromagnetic Compatibility (EMC): Applications	23-Sep-09	23-Sep-09	Bilingual
LabVIEW Basic I with RADE introduction	28-Sep-09	30-Sep-09	French
LabVIEW Basic I with RADE introduction	30-Nov-09	02-DEC-09	English
LabVIEW Basics 2	03-DEC-09	04-DEC-09	English
LabVIEW FPGA cRIO	2-Nov-09	4-Nov-09	French
LabVIEW Intermediate 1	26-Oct-09	28-Oct-09	French
LabVIEW Intermediate II with RADE applications	29-Oct-09	30-Oct-09	French
Siemens - STEP7 : level 1	27-Oct-09	30-Oct-09	French

MECHANICAL DESIGN

CATIA V5 -- Drafting Advanced	6-Nov-09	13-Nov-09	French
CATIA V5 – Surfacique 1	2-Oct-09	9-Oct-09	French
CATIA-Smarteam Level 1	28-Sep-09	13-Oct-09	French
CATIA-Smarteam Level 1	14-Oct-09	29-Oct-09	French
CATIA-Smarteam Level 2	4-Nov-09	20-Nov-09	French
CATIA-Smarteam Level 2	25-Nov-09	11-DEC-09	French
SmarTeam - CATIA data manager at CERN	20-Oct-09	6-Nov-09	French
SmarTeam - CATIA data manager at CERN	9-Nov-09	27-Nov-09	French

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OFFICE SOFTWARE

A hands-on overview of EVO	9-Nov-09	9-Nov-09	English
CERN EDMS - Introduction	21-Sep-09	21-Sep-09	English
EXCEL 2007 - level 1 : ECDL	8-Oct-09	9-Oct-09	French
EXCEL 2007 - Level 2: ECDL	16-Nov-09	17-Nov-09	English
EXCEL 2007 (Short Course I) - HowTo... Work with formulae	9-Nov-09	9-Nov-09	Bilingual
EXCEL 2007 (Short Course II) - HowTo... Format your worksheet for printing	9-Nov-09	9-Nov-09	Bilingual
EXCEL 2007 (Short Course III) - HowTo... Pivot tables	10-Nov-09	10-Nov-09	Bilingual
EXCEL 2007 (Short Course IV) - HowTo... Link cells, worksheets and workbooks	10-Nov-09	10-Nov-09	Bilingual
Indico - Conference Organization	20-Nov-09	20-Nov-09	English
Indico - Meeting Organization	20-Nov-09	20-Nov-09	English
Introduction to Dreamweaver MX	26-Oct-09	27-Oct-09	French
Novelties of EXCEL 2007	23-Oct-09	23-Oct-09	Bilingual
Novelties Office 2007: POWERPOINT 2007	13-Nov-09	13-Nov-09	Bilingual
Novelties Office 2007: WORD 2007	22-Oct-09	22-Oct-09	Bilingual
Office 2007 - Novelties	27-Nov-09	27-Nov-09	Bilingual
OUTLOOK 2007 (Short Course I) - E-mail	5-Nov-09	5-Nov-09	Bilingual
OUTLOOK 2007 (Short Course II) - Calendar, Tasks and Notes	5-Nov-09	5-Nov-09	Bilingual
OUTLOOK 2007 (Short Course III) - Meetings and Delegation	6-Nov-09	6-Nov-09	Bilingual
Project Planning with MS-Project	9-Nov-09	13-Nov-09	French
Sharepoint Designer (Frontpage)- Level 1	21-Sep-09	22-Sep-09	French
Sharepoint Designer (Frontpage)- Level 1	07-DEC-09	08-DEC-09	English
Videoconferencing and collaborative tools	9-Nov-09	9-Nov-09	French
WORD 2007 - level 1 : ECDL	15-Oct-09	16-Oct-09	French
WORD 2007 - level 2 : ECDL	19-Nov-09	20-Nov-09	French
WORD 2007 (Short Course II) - HowTo... Mail merge (with Outlook)	12-Nov-09	12-Nov-09	Bilingual
WORD 2007 (Short Course III) - Working with long document: styles and tables of contents	12-Nov-09	12-Nov-09	Bilingual

SPECIAL COURSE

Designing effective websites	8-Oct-09	9-Oct-09	English
Egroups training	20-Oct-09	20-Oct-09	English
Egroups training	2-Oct-09	2-Oct-09	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.

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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 21 SEPTEMBER

TH JOURNAL CLUB ON STRING THEORY

14:00 - Bldg. 1-1-025

Dynamical SUSY breaking with unoriented D-brane instantons

M. BIANCHI / ROMA II - TOR VERGATA

TUESDAY 22 SEPTEMBER

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

Cosmology in the String Landscape

T. HERTOG

CERN JOINT EP/PP SEMINARS

16:30 - Main Auditorium, Bldg. 500

New BaBar results on e+ e- --> pi+ pi- and the muon magnetic moment

M. DAVIER / LAL-ORSAY

WEDNESDAY 23 SEPTEMBER

LHCC MEETING

09:00 - Main Auditorium, Bldg. 500

99th LHCC meeting

CERN HEAVY ION FORUM

11:00 - TH Auditorium, Bldg. 4 3-006

Higher-Twist Dynamics in Large transverse Momentum Hadron Production

F. ARLEO / LAPP-LABORATOIRE D'ANNECY-LE-VIEUX DE PHYSIQUE DES PARTICULES-IN

THURSDAY 24 SEPTEMBER

TH PHENCLUB

11:00 - Bldg. 1-1-025

TBA

F. RIKKERT / CERN

TH BSM FORUM

14:00 - Bldg. 1-1-025

TBA

M. PIAI / SWANSEA

BE SEMINAR

14:15 - BE Auditorium Meyrin, Bldg. 6-2-024

PTC: A Polymorphic Tracking Code

E. FOREST / KEK, JAPAN AND CERN

CERN COLLOQUIUM

16:30 - Main Auditorium, Bldg. 500

The Planck Mission

R. MANDOLESI / INAF IASF BOLOGNA

TUESDAY 29 SEPTEMBER

SPSC MEETING

09:00 - Main Auditorium, Bldg. 500

93rd Meeting of the SPSC

C. VALLEE / CNRS-IN2P3

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA

S. SHATASHVILI

CERN JOINT EP/PP SEMINARS

16:30 - Main Auditorium, Bldg. 500

First results from the MEG/RE12 experiment at PSI: search for the $\mu^+ \to e^+ + y$ decay as a sensitive test of supersymmetric-GUT theories

A. BALDINI / INFN SEZIONE DI PISA

WEDNESDAY 30 SEPTEMBER

COMPUTING SEMINAR

11:00 - IT AUDITORIUM, BLDG. 31-3-004

M. Acevedo (Useful Web Sàrl)

FRIDAY 2 OCTOBER

EN SEMINAR

11:00 - TE Auditorium, Bldg. 30-7-018

Motorization and low-level control of the LHC collimators

A. MASI / CERN, EN-STI