



# CERN Bulletin

## The LHC... er, what is it exactly?



**D**espite the publicity that the LHC received in newspapers around the world last year, and which will no doubt return as the re-start draws nearer, it remains a bit of a mystery for the people living in the vicinity. The residents of Meyrin were of course well represented among the visitors who came to CERN on the open days, but unfortunately the place where the Web was invented, just around the corner, remains an enigma. And that's not all: surprisingly, even the Web is sometimes known merely as "something to do with the Internet, right?"

The usual answer to "Why is the LHC being built?" is, "Uh... don't really know," followed immediately by "But it's pretty impressive, anyway!" We may enjoy the respect of our neighbours, but our work remains very remote from their everyday lives. Thus, when we ask them if they know of any

**"Hmmm, I'm not sure... and I've even been to see it!" That's a common response if you ask people in Meyrin to say what CERN or the LHC is. The Bulletin, along with CERN's video service, conducted its own impromptu survey, with some surprising results.**

practical spinoffs from CERN, the answer is first "No" and then "But I'm sure there must be some!"

"This year we set up some new initiatives to improve our visibility locally, starting with a new communication officer for the local communication, Corinne Pralavorio," says James Gillies, the Communication Group leader. Among Corinne's responsibilities: improving the profile of CERN's sites and producing a new website to provide regular updates for the neighbours of CERN, in collaboration with other groups and people in other departments. "Our next initiative will be to meet the local authorities to inform them about the LHC re-start process and the activities that will follow," explains Corinne. The meeting will take place in the Globe, in October.

(Continued on page 6)

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### A word from the DG

#### Science and Society in harmony

Yesterday I spoke at a conference hosted by an organization called Melody for Dialogue, and it struck me that this organization has much in common with a movement that contributed to CERN's foundation 55 years ago. That movement was called 'Atoms for Peace'. Notice the similarity? What is it that melody and atoms have in common that they can be used to promote dialogue and peace? I believe that they are both expressions of something shared by

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# The Latest from the LHC: Towards the big chill

**O**nly Sectors 3-4 and 6-7 are still in the cooling phase (currently between 60 and 20 K). As already mentioned in the previous update, as soon as a sector reaches the nominal cryogenic temperature, teams can start powering the magnets. At present, the current is flowing in the magnets of three sectors, while the remaining three will be powered in the coming two weeks.



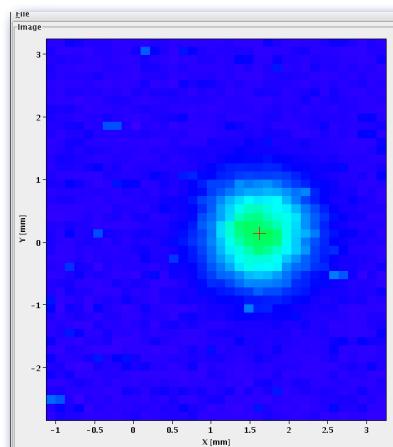
Final operations to fill the nitrogen tanks for cooling the last sector to 80K.

With 6 sectors out of 8 at nominal cryogenic temperature (1.9 K= about -271 °C), the commissioning at the LHC is progressing well. According to the present schedule, the whole machine will be cold in about two weeks.

Tests showed that both quadrupoles and dipoles are performing as expected.



During the weekend of 25-29 September, particles were extracted from the Super Proton Synchrotron (SPS) injector and injected into the transfer lines that link it to the LHC. Although the proton beams were dumped before entering the LHC, these crucial tests showed that the **whole injection chain is ready** and performs well. For the first time also, **lead ions have arrived at the doorstep of the LHC**.



Screen shot showing the first ion beam in the T12 transfer line.

The new layer of the Quench Detection System (QDS), installed in four sectors, is functioning well. In particular, the new software and hardware QDS components allowed teams to measure, with unprecedented accuracy and very quickly, the resistance of all the splices in **Sector 1-2**. The lower the resistance, the better the quality of the splice. All the measured resistances showed small values, and most are significantly below the original specifications. In addition, in the same sector, teams were able to test the new energy extraction system that dumps – twice as quickly as last year – the stored magnetic energy, thus better protecting the whole machine.



The video is available at :

[http://cdsweb.cern.ch/  
record/1209642](http://cdsweb.cern.ch/record/1209642)



## The Latest from ATLAS

**S**ince November 2008, ATLAS has undertaken detailed maintenance, consolidation and repair work on the detector (see Bulletin of 20 July 2009). Today, the fraction of the detector that is operational has increased compared to last year: less than 1% of dead channels for most of the sub-systems. "We are going to start taking data this year with a detector which is even more efficient than it was last year," agrees ATLAS Spokesperson, Fabiola Gianotti.

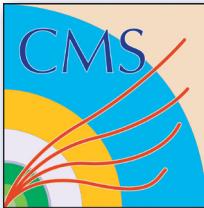
By mid-September the detector was fully closed again, and the cavern sealed. The magnet system has been operated at nominal current for extensive periods over recent months. Once the cavern was sealed, ATLAS began two weeks of combined running. Right now, subsystems are joining the run incrementally until the point where the whole detector is integrated and running as one. In the words of ATLAS Technical Coordinator, Marzio Nessi: "Now we really start physics."

In parallel, the analysis of cosmic data collected last year has allowed ATLAS to perform detailed alignment and calibrations studies, with a precision far beyond anyone's expectations for this stage of the experiment.

On 12 October, things will really get going for ATLAS. The Control Room will be staffed 24/7 and ATLAS will take cosmic data continuously until first beam. During this time, the alignment, calibration, timing and performance of the detector will be studied, and shifters will settle into their working patterns.

"Everybody here is eager to jump on the first data and extract the physics results," says Gianotti.

ATLAS Collaboration



## The Latest from CMS

CMS is on track to be ready for physics one month in advance of the LHC restart. The final installations are being completed and tests are being run to ensure that the experiment is as well prepared as possible to exploit sustained LHC operation throughout 2010.

Physics week in Bologna, Italy, was a valuable time for CMS collaborators to discuss preparations for numerous physics analyses, as well as the performance of the detector during the recent data-taking period with cosmics (CRAFT 09). During this five-week exercise, more than 300 million cosmic events were recorded with the magnetic field on. This large data-set is being used to further improve the sub-detector alignment, calibration and performance whilst awaiting p-p collisions.

Meanwhile, in the experimental cavern, Wolfram Zeuner, Deputy Technical Coordinator of CMS, reports "We are now very nearly closed up again. We are just doing the final clean-up work and are ready to close the rotating shielding which is the last step in making the detector ready for beam. We still have to make a few tests of the magnet and the magnet monitoring system to validate improvements made after the CRAFT experience. Everything is on track and will be ready one month in advance of the beam. This extra time will be used to pump down the beam-pipe to establish operating vacuum, and to exercise and improve the operation of the detector. The current break in magnet operation has allowed some major projects to be completed. Full maintenance of the cooling system has been performed in anticipation of continuous operation until autumn 2010, and a lot of work has also been done to optimise the magnetic and radiation shielding in the forward hadron calorimeter (HF) region."

With the 2008-2009 shutdown and re-commissioning exercise successfully completed, CMS is eager to find out what Nature has in store at the LHC.

*CMS Collaboration*



## The Latest from ALICE

After intensive installation operations from October 2008 until July 2009 (see Bulletin 31/7/2009), ALICE started a full-detector cosmics run in August, which is scheduled to last until the end of October.

In addition to the Silicon Pixel and ACORDE detectors, the latter specially built for triggering on cosmic muons, ALICE is now making extensive use of the trigger provided by the Time Of Flight array. The high granularity and the low noise ( $0.1 \text{ Hz}/\text{cm}^2$ ) of the TOF MRPCs, combined with the large coverage ( $\sim 150 \text{ m}^2$ ), offers a wide range of trigger combinations.

This extended cosmic run serves many purposes: to test the performance of each individual detector; to ensure their integration in the central Data Acquisition; to perform alignment and calibration; to check the reconstruction software; to fine-tune the tracking algorithms; and last but not least, to train the personnel for the long shifts ahead.

More than 100 million events have been accumulated in the central detectors, both with and without magnetic field, and they are now being reconstructed and analyzed. Even the forward muon system, which is oriented parallel to the LHC beam, has collected several 10,000 of the very rare quasi-vertical cosmic rays which traverse the full length of the spectrometer at a rate of one particle every couple of minutes.

Over the last weeks, data taking with the 'cosmic accelerator' has become an almost routine operation, reaching high efficiency and stable conditions, and demonstrating that the ALICE detector and its operating crew are in good shape for first collisions later this year.

*ALICE Collaboration*



## The Latest from LHCb

This month the LHCb Collaboration has observed the first Cherenkov rings from the RICH1 detector. These rings were emitted by cosmic particles passing through the detector.

Cherenkov radiation occurs when a charged particle passes through a medium faster than the speed of light. As it travels, the particle emits photons along a cone. This cone is measured and, along with a measurement of momentum, is used to identify the particle.

There are two types of radiators in RICH1, the first gaseous and the other made from aerogel. Both rings seen on the picture are from the same particle passing through the two different radiators.

This is the first time that the RICH detector has seen a particle as it will see them when the LHC re-starts.

It has also been a time for the experiment to begin commissioning. After network upgrades, LHCb held a commissioning week, an opportunity for physicists working on all the different detectors within LHCb to test the system.

During this week the LHCb team managed full detector readout at almost 1MHz, which is impressive. Data packets were sent at 100kHz through to the LHCb computer farm, and each sub-detector was tested to ensure the system could handle data at this rate.

The test turned out to be very useful since some data loss at an extremely low rate could be detected. The source of the problem has been identified and referred back to the manufacturer.

With this successful high rate test LHCb has demonstrated once again that the experiment is ready to take data when the LHC re-starts. The LHCb team is also looking forward to a dedicated beam dump (TED) run in October, when the final tuning of the Silicon Trackers and VELO under operational conditions will take place.

*LHCb Collaboration*

# The back-story on FlashForward

The LHC is just about to start its first operation with lead ions. Suddenly the entire population of the world blacks out for about two minutes. During this time, every person on the planet experiences his life 21 years in the future. They wake up again in the present to see the mass destruction caused by this worldwide blackout, and are left to ponder over what they saw in the future.

This is the plot of science-fiction author Robert Sawyer's novel *FlashForward*. Sawyer first published the book back in 1999, but in fact the plot takes place at CERN in 2009. "CERN was the setting right from the beginning," explains Sawyer. "I knew you were building the Large Hadron Collider, that it would come online around 2009 and that it would be the most powerful particle accelerator in history. For my plot, I was looking for a way to project consciousness forward in time, and for it to be something humans had caused, rather than a natural phenomenon—and the idea of this super-high-energy physics experiment at CERN seemed to fit the bill perfectly."

Unlike some other novels set at CERN, Sawyer's includes very detailed, and more or less accurate, descriptions of CERN's facilities and the surrounding area. "I confess to being a bit disappointed when Dan Brown chose to set part of his later novel *Angels and Demons* at CERN, too," admits Sawyer, "but I honestly think I made much better use of the facility."

**Micro black holes that consume the world, strangelets that trigger a runaway reaction, and even an antimatter bomb to blow up the Vatican. If you thought you'd heard all the possible ways the LHC might cause cataclysmic disaster, think again: how about shifting the entire consciousness of humanity 21 years into the future? This is the plot of science-fiction author Robert Sawyer's novel *FlashForward*, which is currently being transformed into a big-budget TV series. The Bulletin caught up with the author to find out more.**

Sawyer frequently sets his novels at real-life scientific institutions, from Canada's Sudbury Neutrino Observatory to the Lawrence Berkeley National Laboratory in California, and often uses scientists as his main characters. As he explains: "I think it's a good way to anchor the reality of what I'm doing in my science-fiction novels. A lot of people confuse science fiction and fantasy, but science fiction is not just crazy made-up stuff; rather, it is rigorous extrapolation from what we actually know into things that might plausibly happen."

His novel has received a renewed bout of attention because the ABC television network premiered a big-budget TV adaptation on 24 September. The series, by the same producers as "Lost", will also be called *FlashForward*, but will differ significantly from the novel. For instance, the TV adaptation is no longer set at CERN, and will focus on FBI agents rather than scientists. But, Sawyer assures us, it will not be 'dumbed down' too much, although he won't give much away: "ABC Studios are very secretive about precisely what's going to happen in the show. But I am the creative consultant on the series, and I'm slated to write one of the first-season episodes myself. And David Goyer, who is leading the team adapting my novel, is a very scientifically literate person. I

think it's a safe bet that whatever the series ends up doing, it will not leave people who are scientifically knowledgeable rolling their eyes."

While the cause of the flash-forward in the TV adaptation remains a closely guarded secret, in the novel it coincides with the start of the LHC. But how – in fantasy – might the LHC cause a jump in time? "The novel postulates that the Pauli exclusion principle, which states that no two electrons or protons can simultaneously occupy the same quantum state, also applies to the concept of now—there can be no two simultaneous nows, and a displaced sense of consciousness can only occupy a currently unoccupied—consciousness-free—time," he explains.

Although Sawyer's trick to justify the world's flash forward has nothing to do with what the LHC can really do (read and watch John Ellis' interview about the science behind the novel), it was certainly not Sawyer's intention to create another possible scare story on the safety of the LHC. As he points out: "FlashForward was first published in 1999, long before this nonsense started circulating about the LHC possibly creating a black hole or otherwise destroying the world. If I'd known that all of that was going to erupt in the media, I might have chosen another setting for my novel! On the other hand, for a time, more people were talking about particle physics and particle accelerators than at any previous moment in history, so I suppose that was good. Who'd have predicted that something as esoteric as the machine designed to find the Higgs boson would be front-page news around the world?"

So will Sawyer be responsible for the next rush of media attention for CERN? Who knows? If only we had a machine that would allow us to see into the future...

Mathew Stracy,  
CERN Bulletin

CERN organization for Nuclear Research

## SCIENCE AND FICTION: FLASHFORWARD

CERN > FlashForward

Two minutes and seventeen seconds that changed the world...

Robert Sawyer's novel *FlashForward* is currently being transformed into a big budget ABC TV series. Sawyer's story follows a research team using the particle accelerator at CERN in pursuit of the elusive Higgs Boson, a theoretical subatomic particle. But instead of finding the Higgs, the consciousness of the entire human race is thrown ahead by twenty-one years.

Chapter excerpts:  
Chapters 1 and 2  
Chapter 12

MEET THE AUTHOR

Why did Sawyer set his novel at CERN? How did he research the physics? What are his hopes for the discoveries at the LHC? [Written and video interviews >](#)

SCIENCE BEHIND THE STORY

CERN physicist John Ellis talks about the science behind the *FlashForward* story.

FREQUENTLY ASKED QUESTIONS

The US/LHC website has a useful *FlashForward* FAQ here: [www.uslhcc.us/lhc\\_in\\_flashforward](#)

## Additional material:

More information about Sawyer and his novels can be found on his website:

<http://sfwriter.com/>

A complete interview with Robert Sawyer produced by S. Cochran is available:

<http://flashforward.web.cern.ch/flashforward/>

A video interview can be found here:

<http://cdsweb.cern.ch/record/1207824>

The video interview with John Ellis of the CERN Theory Group is available here:

<http://cdsweb.cern.ch/record/1202585>

For previews and news on the new ABC series visit:

<http://beta.abc.go.com/shows/flash-forward/>

# An interesting idea, but....

"I like science fiction; when I was a teenager I had a lot of it and I think that it actually contributed to my decision to eventually become a researcher in science", says John Ellis, CERN theoretical physicist.

In Robert Sawyer's book, lead ion collisions at the LHC cause the whole of humankind to experience a flash-forward. However, although the LHC will be the first particle accelerator to collide heavy ions at an unprecedented (for experiments on Earth) energy, Nature does it every day and nothing terrible has ever happened. "It turns out that a large fraction of high energy cosmic rays is actually heavy nuclei", explains Ellis. "So, in fact, heavy ion experiments have been done by Nature also for billions of years. Nuclei, perhaps not as heavy as lead,

**The idea of causing the consciousness of the entire human race to jump into the future for about two minutes is an amusing one. However, in this case, imagination has nothing to do with what can really happen in our world and, in particular, nothing that can ever be caused by the LHC operation. John Ellis, from the Theory group, explains why.**

but certainly as heavy as iron, have been striking the Earth's atmosphere for billions of years. They have also been striking other astrophysical objects – things like neutron stars for example – and nothing cataclysmic has happened".

The way human consciousness works is a fascinating theme in itself. A lot of scientists from many different disciplines – including theoretical physics – are indeed studying the complex processes that go on in the brain. "I think it's very important to under-

stand how the brain works and the origin of consciousness. There has been some conjecture where quantum physics plays an essential role but I don't see any evidence. It is not something that has directly to do with particle physics but certainly it is a very interesting speculation", concedes Ellis.

Science fact is very different from science fiction. The book is nevertheless interesting reading for scientists. Some of the LHC experimentalists must rue the fact that seeing the Higgs boson is not quite as simple as Sawyer describes. And, not that it's a big deal, but in FlashForward the Higgs boson comes out of lead ion collisions ...

The full video interview with John Ellis is available here:

<http://cdsweb.cern.ch/record/1202585>



## Notes from the LHC

When Eureka, the Times' new monthly science magazine, asked Bill Bryson to contribute an article, he was 'thrilled' to visit CERN. "This is a place that I've heard about for a long long time," he said. "I've had images in my mind and I always wanted to come here and see what it was like. I arrived just at the right time, one of the most exciting times in CERN's history." One of the first surprises for him was driving through the charming French countryside from the CERN Control Centre and accelerator complex in Prévessin, to the CMS experiment in Cessy, whereas the campus in Meyrin was more in line with what he imagined CERN's 'academic-type buildings' to look like.

Bryson's book 'A Short History of Nearly Everything' explains in simple terms the whys, hows and whens of science. The book won him the Aventis Prize for best general science book in 2004. However, it only mentions CERN very briefly. "Everything I wrote about CERN in my book was based on not having ever been here", he explains. "What CERN is doing is tremendously exciting and interesting and is something that even non-scientists ought to be taking an interest in," he enthused. Indeed, one of the

**The best-selling American author of 'A Short History of Nearly Everything', Bill Bryson, visited CERN on 14 September. When asked whether, after this visit, he would rewrite the chapter about CERN, he replied: "Oh yes, absolutely"!**

things he will explain to the Eureka readers will be why finding the Higgs boson is more important than just 'interesting', as there are so many knock-on effects.

During the morning's visits he admitted: "It's so complicated. I usually write books and have time to research the background. Now I've just got notes and scraps of thought from a flying visit to convert into an article. But it's amazing. You usually only read about these things in the newspapers so to come to visit, to have it become a reality, to be able to talk to the physicists and to begin to understand it, is truly amazing." And by the afternoon, when he visited the Computer Centre, the Antiproton Decelerator and the ALPHA antihydrogen experiment, he was beginning to understand how the different parts of CERN fit together – particularly how the computing aspects support the LHC experiments.

"You made me feel terribly welcome here. I could ask any questions I wanted. There isn't any sort of 'oh, I don't want to talk about that'. It's a very open and honest organi-



Bill Bryson visited CERN on 14 September.

zation. I think that's wonderful, really!", he concluded.

Rebecca Learn

The video of the interview is available at:

<http://cdsweb.cern.ch/record/1208151>

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*The second edition of The Times Eureka magazine featuring CERN will be published in the UK on 5 November 2009.*



## A word from the DG

(Continued from page 1)

### Science and Society in harmony

**all of humanity. Whatever culture we belong to, music is a part of it. And wherever in the world we're from, we're all curious about our surroundings. Science and music are two of the things that make us human.**

**The theme of the conference was environmental awareness, and I told the participants that although CERN's research won't bring immediate solutions to the pressing environmental problems of the world, if it were not for similar curiosity-driven research in the past, much of what we take for granted today would not exist. No Einstein, no GPS systems. No quantum mechanics, no modern electronics. No Large Hadron Collider? Well, it's too early to say, but applications will certainly come. Investments made in the past at CERN for basic research are allowing CERN to carry out an experiment that will help in understanding our environment. With facilities at CERN, we can simulate part of the spectrum of cosmic ray particles bombarding the Earth's atmosphere. We can also simulate the upper atmosphere. Put the two together and you have an experiment that can measure the impact of cosmic rays on how clouds form. This is just one modest example of fundamental science leading to tangible benefit - without basic research, there's no applied science. And it's also an example of how good things can happen when disciplines merge. So, while particle physics research must remain our main focus, we are also enriched by engagement with broader societal issues.**

*Rolf Heuer*

## The LHC... er, what is it exactly?

(Continued from page 1)

In the meantime, while the new image of CERN for our neighbours is being created, contacts mainly take the form of direct acquaintance with someone working here. One of the people interviewed says, for example: "I have a friend who's a physicist. He keeps me informed about things, and I had a chance to visit the ring." He adds, "We'll have to see what comes out of it, but it should be something positive. If it contributes to scientific progress, that wouldn't be bad at all. Good luck to you!"

Among those who agreed to take part in our street poll, several individuals had the whimsical notion that subatomic particles are "like tiny little objects of everyday life". Others remembered that "the machine is presently being repaired. It ran for a month and then had to be stopped, but soon it will be re-started." The most important fact to

emerge, though, is that it took only a minimum of prompting from the interviewer for most people to recall that CERN is a place where basic research is being done, with some enthusiastically adding: "I'm all for it!" In all the interviews, not a hint of wariness about what is being done at CERN came across. So the people of Meyrin and CERN are clearly good neighbours!

You can watch the complete video of the street poll conducted last week in Meyrin. Forthcoming Bulletin issues will include further episodes, including the Pays de Gex, Geneva, the University, and of course CERN itself!

A video of the interview is available at:

<http://cdsweb.cern.ch/record/1209885>

## Inauguration of the Kjell Johnsen Auditorium

**O**n Wednesday 23 September, the Kjell Johnsen Auditorium was inaugurated in Building 30. Named after the leader of the construction team of the Intersecting Storage Rings (ISR) - the first proton collider in the world - this 200 square-metre auditorium can seat 200 people. It is equipped with a computer projector, ethernet and wireless Internet connection.

*Antoine Cappelle*



# CERN pays tribute to Herwig and Ingeborg Schopper

Schopper's role in world science has been enormous in such frontier fields as nuclear and particle physics as well as other areas of advanced scientific research; in the promotion of international scientific co-operation; and in the advancement of peace through scientific endeavour, to give only a few examples. He has served as Director of DESY, Director-General of CERN and President of the SESAME Council. His leadership has resulted in remarkable contributions towards the triumphs of these laboratories, characterised particularly by the successful construction of the LEP Collider.

During the symposium colleagues recalled his long scientific career in nuclear and particle physics and looked back at other areas of science to which Schopper has made decisive contributions and in which he retains an ardent interest.

Samuel Ting, recipient of the 1976 Nobel Prize in Physics and spokesperson of the

On 15 September CERN hosted a tribute to commemorate Herwig Schopper's 85th birthday. The symposium was also dedicated to Schopper's wife Ingeborg, who passed away on 14 September, and CERN's Director-General Rolf Heuer led the audience in observing a minute of silence in her honour.

AMS experiment, began with an overview of Schopper's contributions to nuclear and particle physics.

Cecilia Jarlskog of Lund University took a trip back in time recalling Schopper's pioneering work in the 1950s and 1960s on parity violation.

Moving beyond CERN, Albrecht Wagner, former Director of DESY, recalled Schopper's support to the construction of the electron-positron collider PETRA in the period 1976-1978, the accelerator which turned DESY into a truly international high-energy physics laboratory.

Mariano Gago, Minister for Science, Technology and Higher Education of Portugal (and particle physicist), and Juan Antonio Rubio, Director-General of CIEMAT,

evoked memories of Schopper's essential part in the development of particle physics on the Iberian Peninsula and elsewhere in Europe.

Finally, Costas Papanicolas of the Cyprus Institute and Khalid Toukan of SESAME explained why the success of these research centres would not have been possible without the dedication of Schopper. His efforts have been a guiding force in bringing nations together through science in the eastern Mediterranean and in the Middle East regions.

*Emmanuel Tsesmelis*

The presentations and a recording of the symposium are available at:

<http://indico.cern.ch/conferenceDisplay.py?confId=66622>



Herwig Schopper with his colleagues and friends at the symposium organised for his 85th birthday in the Main Auditorium.

# A pop-up voyage to the heart of matter

"The challenge with the design of every pop-up was to find a solution that both looked good and was scientifically correct," explains Emma. "This

was particularly difficult for the Big Bang, where the expansion of the Universe had to be spherically symmetrical and not spiky!"

Over 8 pages, the story of ATLAS and the LHC unfolds, pops up, rotates, and, in some cases, readers even have to get hands-on and build elements themselves. Emma worked on the project with Anton Radevsky, a Bulgarian paper engineer based in Sofia, who designed all the pop-ups and painted the beautiful illustrations. "Anton's questions were not always easy to answer - like the request for a photo of the outermost layer of the experiment", says Emma. Those of you who have been down to the ATLAS cavern will know there is simply no space to step back to take a photo.

In the end, around 50 CERN colleagues con-

**How do you make a pop-up Big Bang? Well it seems that many of you out there have an opinion on this somewhat esoteric question. When Emma Sanders, co-author of ATLAS' new pop-up book carried out an informal survey amongst physicists, the question provoked some strong reactions.**

tributed to the book in one way or another. When ATLAS physicist Christoph Rembser first heard about the project, he thought it was a "brilliant idea," particularly for once the detectors are no longer accessible. "It is much better for the imagination to see it in 3D," he explained. Christoph worked on the pop-up tracker and told the Bulletin, "it was a challenge to explain in 3D without words how the detector works."

Despite the book not yet being published, it has already attracted the attention of science blogs such as Nature ([http://blogs.nature.com/news/thegreatbeyond/2009/09/picture\\_post\\_a\\_popup\\_big\\_bang\\_1.html](http://blogs.nature.com/news/thegreatbeyond/2009/09/picture_post_a_popup_big_bang_1.html)) and Symmetry (<http://www.symmetry-magazine.org/breaking/2009/09/01/atlas-pops-up-on-bookshelves/>) and can be pre-ordered on Amazon. Alternatively, wait

until it is available in the CERN shops -at the Reception, the library and the ATLAS secretariat- from the beginning of December when it will go on sale at 30CHF.

In the meantime, those on Facebook can follow progress by becoming a fan at:

<http://www.facebook.com/pages/Pop-up-Voyage-to-the-Heart-of-Matter/153102255147?ref=nf>

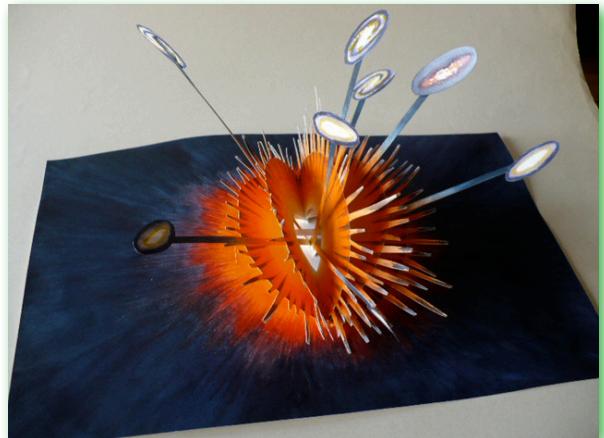
Other books by Anton Radevsky include the pop-up book of spacecraft and the pop-up book of modern architecture.

A video of the Presentation of the Pop-Up book : "Voyage to the heart of Matter - The ATLAS Experiment at CERN" by Pippa Wells is available at:

<http://cdsweb.cern.ch/record/1207825>



Paper engineer Anton Radevsky in animated discussion with ATLAS' Philippe Farthouat and Christoph Rembser.



Too spiky: an early version of the pop-up Big Bang.

## Literature in Focus Meet the author Denis Guedj

**A**uthor of some fifteen works, mostly novels, Denis Guedj comforts us in our belief that science and literature, far from being poles apart, can combine to make the most wonderful TRUE stories. Fiction is not in opposition to truth but offers it an emotional dimension, while discipline and imagination unite to enrich the novels.

Denis Guedj will, among other things, present his recent works: *Villa des hommes* (R. Laffont) and *One zéro show* (Seuil). The latter is a play which the author will stage at CERN on 16 November.

After the presentation, the author will be available to sign copies of his books.

**Wednesday 7 October 2009  
at 4.00 p.m., Library (Bldg 52/1-052).**

**Tea and coffee will be served.**

# Stephen Hawking returns to CERN

If you happened to pass through Building 4 during the first weeks of September, you might have noticed the name of Stephen Hawking on one of the doors on the second floor, which hosts most of CERN theorists' offices. Three years after his last visit to CERN, Stephen Hawking gladly accepted the invitation from the University of Geneva to hold a public lecture on the occasion of its 450th anniversary and requested an office at CERN for the length of his stay. The "master of the Universe", as the Geneva University journal dubbed him, attracted over 4000 people to his lecture on "The Creation of the Universe" held on

15 September in the Main Auditorium of Uni Dufour. His more technical colloquium on the same subject at CERN a week earlier, was no less popular and quite "provocative" according to some of the physicists in the audience. With his repeated reference to the "non-need" for a "creating agent" for the Universe, more than one member of the audience was induced to think that his proposal for "boundary conditions" of the Universe would aim at scientifically disproving the existence of God. "Hawking's and Hertog's initial conditions are really an incredible achievement from the theoretical physics point of view", says Luis

fully developed, and many issues concerning the quantum structure of space and time are not clarified".

The Theory Group of CERN's Physics Department offered Hawking the typical stay of a visiting scientist, with visits to the CCC led by Paul Collier and to the AMS experiment led by Samuel Ting (he had visited ATLAS in 2006). Hawking, whose dream to go to Space will be soon fulfilled by British billionaire Richard Branson, particularly enjoyed Ting's in-depth explanations of the complexity of the AMS experiment, due to lift off onboard Space Shuttle Discovery in 2010. He also followed with great interest the guided tour into a crowded CCC with Paul Collier. We take his concluding remarks on leaving the CCC as a good omen for the LHC's forthcoming start-up: "I hope this time it works!".

*Paola Catapano*

Movie with highlights of the visit here:

<http://cdsweb.cern.ch/record/1208925>



Stephen Hawking visiting the CERN Control Centre.



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.



## SAFETY COURSE : USE OF THE BIOCELL

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

You can follow this course until December 17.... So REGISTER!





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.

## STANDING CONCERTATION COMMITTEE

### MAIN POINTS EXAMINED AT THE MEETING OF 24 JUNE 2009

#### Results of the 2009 MARS exercise

The Committee took note of the results of the 2009 MARS exercise presented by the Head of the HR Department, expressing satisfaction for the early availability of the statistics and for the fact that the analysis of the results covered the last three years.

#### Status report on the work on the five-yearly review

The Committee took note of a presentation by P. Gildemyn on the data collection procedure for the 2010 five-yearly review (staff, fellows, associate members of the personnel, CHIS) and of the proposed work schedule.

#### Implications for employment conditions of the discussions at the Finance Committee and Council on 17 and 18 June 2009

The Chairman briefly reported on the discussions at the meetings of the Finance Committee and Council in June 2009, on the 2010-2014 medium-term plan and the 2010 preliminary draft budget, as well as on the modified strategy and goals for 2009. The Committee took note that the Finance Committee and Council had approved the proposed amendments to the Staff Rules and Regulations relating to the new contract policy, which had come into effect on 1st August 2009.

#### Mutual Aid Fund - annual report for 2008 and preliminary budget for 2009

The Committee took note of the 2008 annual report presented by the Chairman of the Mutual Aid Fund and approved the contributions from the Administration budget and the Staff Association to the Fund's 2009 budget.

#### Carry-forward of annual leave for the 2008-2009 leave year

In view of special needs highlighted by certain departments following the LHC repair work, the following arrangements were agreed for the exceptional carry-forward of annual leave from 30 September 2009:

- Subject to the authorisation of the Head of Department, which will be granted on a case-by-case basis, staff members will be entitled to carry forward up to 15 extra days of annual

leave with effect from 30 September 2009, thereby raising the carry-forward of leave to a maximum of 45 days. For those participating in the short-term saved leave system, this entitlement will be increased by 22 days, giving a maximum total carry-forward of 67 days (annual leave and saved leave).

- Leave carried forward on this exceptional basis must be taken between 1st October 2009 and 30 September 2010.

### MAIN POINTS EXAMINED AT THE MEETING OF 3 SEPTEMBER 2009

#### Administrative Circular No 30 (Rev. 2 Corr.), "Financial benefits on taking up appointment and on termination of contract"

Two changes were made to the text of Administrative Circular No. 30. The first change concerns travel expenses, which no longer need to be paid back when they have been paid in advance and the member of the personnel resigns during the first year of service. The second change introduces a clarification regarding cases where the start of the period during which the cost of storing furniture is covered by the Organization is deferred to the termination of the contract. The Committee agreed to recommend the Director-General to approve Administrative Circular No. 30 (Rev. 2 Corr.).

#### Administrative Circular No. 2 (Rev. 4), "Recruitment, appointment and contract development of staff members" + Frequently Asked Questions (FAQ)

Following the approval of the new contract policy by the Finance Committee and Council in June 2009, the HR Department, the representatives of the departments and the Staff Association worked together in July and August to finalise Administrative Circular No. 2 and the associated Frequently Asked Questions (FAQ). The Chairman thanked all those involved for their hard work during the summer to ensure that the deadline for the two documents was met.

Following consultation on a number of outstanding issues, the Committee agreed to recommend the Director-General to approve Administrative Circular No. 2 (Rev. 4) and the Frequently Asked Questions (FAQ) document.

#### SCC sub-groups: finalisation of terms of reference and composition

The Committee endorsed the terms of reference and composition of two SCC sub-groups, one responsible for changes to the Staff Rules and Regulations and administrative circulars and the other for the 2010 five-yearly review of the financial and social conditions of the members of the personnel.

#### Education fees: Indexation of the amounts for accommodation, meals and school transport

The Committee approved the calculated indexation of the amounts for accommodation, meals and school transport for the 2009-2010 academic year. Accommodation fees for the 2009-2010 school year will be paid in the form of a lump-sum of 521 CHF per month (paid at the rate of 100%). The amount used for the calculation of meal payments will be 18 CHF per meal (paid at the rate of 75%). The ceiling for school transport fees has been set at 592 CHF for the 2009-2010 school year.

### REMINDER - EXTENSION/ SUPPRESSION OF ALLOWANCE FOR DEPENDENT CHILDREN AGED 20 to 25

Members of the personnel with dependent children aged 20 to 25 (or reaching 20 during the 2009/2010 school year), for whom a dependent child's allowance is currently paid, are invited to provide the Education Fees service with a:

#### SCHOOL CERTIFICATE

Unless we receive, **by October 31, 2009 at the latest**, a school certificate or similar written proof (contract of work placement, sandwich courses or apprenticeship) covering your child / children for the school year 2009/2010, we will be obliged to stop payment of the dependent child's allowance as well as affiliation to the health insurance at the appropriate date and retroactively if necessary.

Education Fees service (33-1-017)  
HR Department - Tel. 72862



## Take note

### MAIL OFFICE

Members of the personnel are kindly requested to empty their mail boxes.

Any mail remaining in mail boxes will be collected and resorted by Mail Office staff on **Thursday 8 October 2009**.

Only **specifically** addressed mail will be re-delivered.

### PREPARATION FOR RETIREMENT SEMINAR

The Human Resources Department is organizing a **preparation for retirement seminar**, which will take place on the afternoons of **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 the subjects of interest to you.

One afternoon each will be devoted to retirement in the two 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 both within and 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 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

### VACCINATION AGAINST SEASONAL INFLUENZA

As every year, the Medical Service is taking part in the campaign to promote vaccination against seasonal influenza.

Vaccination against seasonal influenza is especially recommended for **people suffering from chronic lung, cardio-vascular or kidney conditions or diabetes, for those recovering from a serious illness or surgical operation and for everyone over the age of 65**.

The influenza virus is transmitted by air and contact with contaminated surfaces, hence the importance of washing hands regularly with soap and / or disinfection using a hydro-alcoholic solution.

From the onset of symptoms (**fever > 38°, chills, cough, muscle aches and / or joint pain, fatigue**) you are strongly recommended to stay at home to avoid spreading the virus.

In the present context of the influenza A (H1N1) pandemic, it is important to dissociate these two illnesses and emphasise that the two viruses and the vaccines used to combat them are quite different and that protection against one will not provide protection against the other.

People working on the CERN site who wish to be vaccinated against seasonal flu may attend the CERN infirmary (Bldg 57, ground floor), bringing with them their dose of vaccine.

The Medical Service will make out a prescription on the day of the jab for the reimbursement claim through UNIQA.

The Medical Service will not administer vaccines to family members or pensioners, who should contact their usual doctor.



## 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 September 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*



## External meeting

### GENEVA UNIVERSITY

**École de physique - Département de physique nucléaire et corpusculaire**

24, quai Ernest-Ansermet  
1211 GENÈVE 4

Tél: (022) 379 62 73 - Fax: (022) 379 69 92

**Wednesday 14 October 2009**

PARTICLE PHYSICS SEMINAR

at 17:00 – Stückerberg Auditorium

**Long-lived particle searches  
at colliders**

By Dr. Philippe Mermod / Oxford University

The discovery of exotic long-lived particles would address a number of important questions in modern physics such as the origin and composition of dark matter and the unification of the fundamental forces. This talk will focus on searches for long-lived charged massive particles, where "charged" refers to the magnetic, electric or colour charge. Previous searches at the LEP and Tevatron Colliders allowed to put mass and cross section limits on various kinds of long-lived particles, such as Magnetic Monopoles and metastable leptons and up-type quarks. The new energy regime made available at the LHC will probe physics regions well beyond these limits. For instance, a new long-lived particle with mass 300 GeV carrying colour charge is expected to be copiously produced at the LHC and leave striking events in the detectors. I will outline a signature-based search strategy for long-lived massive hadrons in early ATLAS data

*Information :*

*<http://dpnc.unige.ch/seminaire/annonce.html>*

*Organizer : J.-S. Graulich*

## 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
CERN openlab/Intel Computer Architecture and Performance Tuning Workshop	6-Oct-09	7-Oct-09	English
CERN openlab Multi-threading and Parallelism Workshop	11-Nov-09	12-Nov-09	English
Emacs - way beyond Text Editing	29-Oct-09	29-Oct-09	English
Hands-On Object-Oriented and Generic Programming in C++	3-Nov-09	6-Nov-09	
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	10-Nov-09	12-Nov-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 Databases: Advanced PL/SQL Programming	2-Nov-09	4-Nov-09	English
Oracle Database 10g: SQL Tuning	07-DEC-09	09-DEC-09	English
Project Development using Python	01-DEC-09	04-DEC-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
Comprehensive VHDL for FPGA Design	12-Oct-09	16-Oct-09	English
DIAdem - basics	13-Oct-09	15-Oct-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
AutoCAD Electrical 2009 (until 3 november 2009)	5-Oct-09	4-Nov-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-Smartteam Level 1	28-Sep-09	13-Oct-09	French
CATIA-Smartteam Level 1	14-Oct-09	29-Oct-09	French
CATIA-Smartteam Level 2	4-Nov-09	20-Nov-09	French
CATIA-Smartteam 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

### OFFICE SOFTWARE

A hands-on overview of EVO	9-Nov-09	9-Nov-09	English
ACCESS 2007 - Level 1 : ECDL	5-Oct-09	6-Oct-09	French
CERN EDMS for Engineers	21-Oct-09	21-Oct-09	Bilingual
CERN EDMS for Local Administrators	25-Nov-09	26-Nov-09	English



CERN EDMS MTF in practice	14-Oct-09	14-Oct-09	Bilingual
Dreamweaver CS3 - Niveau 1	26-Oct-09	27-Oct-09	French
Dreamweaver CS3 - Level 2	04-DEC-09	04-DEC-09	French
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
EXCEL 2007 - Level 2: ECDL	16-Nov-09	17-Nov-09	English
Indico - Conference Organization	20-Nov-09	20-Nov-09	English
Indico - Meeting Organization	20-Nov-09	20-Nov-09	English
Novelties Office 2007	27-Nov-09	27-Nov-09	Bilingual
Novelties Office 2007: 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
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 Collaboration Workspace	12-Oct-09	13-Oct-09	English
Sharepoint Designer (Frontpage) - Level 1	07-DEC-09	08-DEC-09	English
Sharepoint Designer (Frontpage) - Level 2	19-Oct-09	20-Oct-09	French
Sharepoint Designer (Frontpage) - Level 2	15-Oct-09	16-Oct-09	French
Videoconferencing and collaborative tools	9-Nov-09	9-Nov-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

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.

Marie-Laure LECOQ 74924  
 ENSEIGNEMENT TECHNIQUE  
 TECHNICAL TRAINING  
 technical.training@cern.ch



# 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

Communicating Leadership	2 October, 29 October + 1 December	(full)
CDP-SL for new supervisors, part 1	5, 6, 7 October	(2 places available)
Introduction to Leadership	7, 8, 9 October	(4 places available)
Voice your Leadership	13, 14 October	(full)
Managing Teams	10, 11, 12 November	(7 places available)
Risk Management	17, 18 November	(6 places available)
Dealing with Conflict	20, 27 November	(5 places available)
CDP pour nouveaux superviseurs, part 1	30 novembre, 1, 2 décembre	(4 places disponibles)

#### Communication Curriculum

Making presentations	14, 15 October + 9 November	(Full)
Communiquer efficacement dans votre équipe	19, 20 octobre	(7 places disponibles)
Gestion du stress	20, 21 octobre	(8 places disponibles)
Communiquer efficacement	21, 22 octobre + 9, 10 novembre	(complet)
Managing Time	27 October + 18 November + 11 December	(3 places available)
Techniques d'exposé et de présentations	10, 11 novembre + 8 décembre	(1 place disponible)
Managing Stress	10, 11 November	(6 places available)
Orientation service	12, 13 novembre	(5 places disponibles)
Animer ou participer à une réunion de travail	9, 10, 11 décembre	(6 places 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  
Sudeshna Datta Cockerill, Head of the programme 74127 - Sudeshna.datta.cockerill@cern.ch  
Secretariat 78144 - Nathalie.dumeaux@cern.ch



# Seminars

## MONDAY 5 OCTOBER

### COMPUTING SEMINAR

11:00 - IT Auditorium, Bldg. 31-3-004

### Massive Data Computing in a Connected World

PRADEEP K. DUBEY / INTEL CORP.

### TH JOURNAL CLUB ON STRING THEORY

14:00 - Bldg. 1-1-025

### Journal Club Startup

ALL/CERN

## TUESDAY 6 OCTOBER

### TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA

M. BUICAN / CERN

## WEDNESDAY 7 OCTOBER

### TH COSMO COFFEE

11:00 - Bldg. 1-1-025

### Primordial non-Gaussianity and the large-scale structure

E. SEFUSATTI / CEA, PARIS

### TH THEORETICAL SEMINAR

14:00 - TH Auditorium, Bldg. 4

### Quark-gluon plasma: lessons from the lattice

H. B. MEYER / CERN-PH-TH

## THURSDAY 8 OCTOBER

### TH PHENCLUB

11:00 - Bldg. 1-1-025

### Bound states at lowest order in hbar

P. HOYER

## FRIDAY 9 OCTOBER

### EN SEMINAR

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

### Analysis of nanoindentation in copper single crystals and related size effect based on experiments, crystal plasticity and dislocation dynamics

HYUNG-JUN CHANG (/ MINES PARISTECH, CENTRE DES MATERIAUX)

### GENEVA UNIVERSITY SEMINARS

11:30 - Auditoire 234, Université de Genève

### Conformal neutrinos: A 4D alternative to the see-saw

M. QUIROS / FACULTAD DE CIENCIAS FISICAS-UNIVERSIDAD COMPLUTENSE

### PARTICLE AND ASTRO-PARTICLE PHYSICS SEMINARS

14:00 - TH Auditorium, Bldg. 4

TBA

G. SOYEZ / CERN

## MONDAY 12 OCTOBER

### TH JOURNAL CLUB ON STRING THEORY

14:00 - Bldg. 1-1-025

### Dual conformal symmetry in high energy QCD

J. GUNNESSON / IFT MADRID

### COMPUTING SEMINAR

16:00 - IT Auditorium, Bldg. 31-3-004

### Recent developments in the XROOT/Scalla framework

A. HANUSHEVSKY / STANFORD LINEAR ACCELERATOR CENTER

## TUESDAY 13 OCTOBER

### TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA

P. CÁMARA / CERN

## WEDNESDAY 14 OCTOBER

### TH COSMO COFFEE

11:00 - Bldg. 1-1-025

### Extracting the three- and four-graviton vertices from binary pulsars and coalescing binaries

S. FOCCA / GENEVA UNIVERSITY

### TH THEORETICAL SEMINAR

14:00 - TH Auditorium, Bldg. 4

### RHIC and the Quark-Gluon Plasma -- from qualitative discovery to quantitative characterization

U. HEINZ / THE OHIO STATE UNIVERSITY

## WEDNESDAY 15 OCTOBER

### TH BSM FORUM

14:00 - Bldg. 1-1-025

TBA

M. BUICAN / UNKNOWN

## FRIDAY 16 OCTOBER

### PARTICLE AND ASTRO-PARTICLE PHYSICS SEMINARS

14:00 - Bldg. 1-1-025

### Workshop on particle correlations and femtoscopy