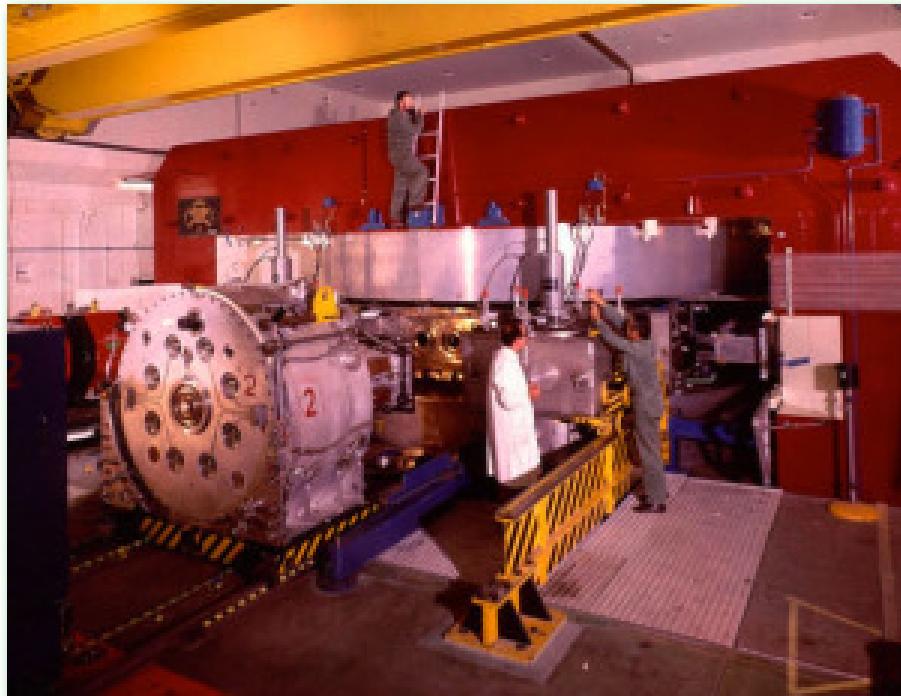




CERN Bulletin

Nos 47 & 48 – 23 & 30 November 2011

New life for CERN's first accelerator



The Synchrocyclotron as it was in 1975; it will be restored to this arrangement for public viewing.

The Synchrocyclotron (SC) began operation in 1957, two years before the PS was commissioned. Running at an energy of 600 MeV and producing beams of protons, neutrons, muons and pions, it helped to further research in the nuclear physics field for no fewer than 33 years, providing beams for various decay experiments as well as the muon capture experiment (*).

Since the SC was decommissioned in 1990, three of its four buildings (160, 161 and 301) have been converted into offices for members of the ALICE collaboration, but the shielded hall housing the machine itself remains as it was, with the Synchrocyclotron still king of all its surveys.

Building 300 right in the middle of the CERN site houses a special "antique": the Laboratory's very first accelerator. After several years in the wilderness following its decommissioning in 1990, the Synchrocyclotron is set to take on a new lease of life in the near future, this time as a visitor attraction.

Hence the idea to create an exhibition area. "It was only natural to want to show this major part of the Organization's history to the public," says the project leader, Marco Silari of the DGS/RP group. "The SC was CERN's first accelerator and, as such, is definitely worth seeing. We therefore came up with the idea of making it into a visit point, which we discussed with the Director of Administration and Infrastructure, Sigurd Lettow, and are now putting into practice in collaboration with the Education group."

The 2,500 tonne accelerator complete with magnet, vacuum chamber, vacuum pumps, radiofrequency (RF) system and even a con-

(Continued on page 2)



The LHC: a week for taking stock, pushing boundaries and for long-term planning

This has been a week full of LHC news, beginning and ending in Paris with results presented by the ATLAS, CMS and LHCb collaborations at the Hadron Collider Physics Symposium, HCP2011. In between came the first lead-ion collisions of 2011, tests with protons and lead ions circulating in the LHC, and the kick-off meeting for an LHC luminosity upgrade.

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New life for CERN's first accelerator

(Continued from page 1)

trol panel dating back to the 1950s (!) will therefore stay put in Hall 300.

As far as radioactivity considerations are concerned, the level of radiation intensity has had the last twenty years to decrease. "For safety reasons, the Radiation Protection (RP) group has carried out gamma spectrometry measurements on around 120 samples taken all over the building, as well as a full radiological survey of the whole facility," explains Marco Silari. "This will enable it to draw up a radiological evaluation and determine the protective measures that need to be taken."

Renovated to look like it did in 1975, the exhibition room should be ready to welcome members of the public in about two years' time, offering a unique opportunity to visit a complete accelerator. "The project is still in its early stages," Marco Silari points

out. "At the end of 2012, once the initial phase of removing all the equipment that is not an integral part of the accelerator has been completed, the whole area will have to be rehabilitated to allow the civil engineering work to begin. The Education group (PH/EDU) will then step in to make the 400 m² hall into a welcoming space fit to receive visitors."

Anaïs Schaeffer

Did you know?

A short history of the SC

The Synchrocyclotron produced its first 600 MeV proton beam on 1st August 1957. Ten years later, construction began on an underground hall to house the ISOLDE experiment, which was supplied by the SC until 1990.

Following a year's technical stop to upgrade the machine, the SC was ready to accelerate ³He²⁺ ions in October 1974. Acceleration tests with ¹²C⁴⁺, ¹⁶O⁶⁺, ¹⁴N⁵⁺ and ²⁰Ne⁶⁺ beams were also performed over the next few years.

The SC was decommissioned on 17 December 1990.

A word from the DG

(Continued from page 1)

The LHC: a week for taking stock, pushing boundaries and for long-term planning

HCP2011 brings this year's particle physics conference cycle to a close, and is the last chance for the LHC experiments to present new results before the December Council meeting. It began with all eyes on LHCb's results from its D⁰-anti D⁰ particle asymmetry analysis. In this decay channel, LHCb seems to see an excursion from the Standard Model's prediction. However, even though such a result is precisely what physicists have been waiting for, no predictions for physics beyond the Standard Model show an excursion in this particular decay channel. So it's safe to say that the jury's still out, and with about half the data remaining to be analysed, we'll have to wait and see what story the full data set tells. At the end of the conference, ATLAS and CMS presented a combined Standard Model Higgs search for the first time, based on the data that had been collected up to

August. The combined analysis constrains the Higgs to the mass range 115 GeV to 140 GeV.

Meanwhile, the LHC achieved a seamless transition from proton to lead-ion running, and added a new feather to its cap with preliminary tests designed to show the feasibility of proton-lead collisions. These tests show that achieving such collisions next year should be possible, adding a valuable new tool for studying quark gluon plasma.

Looking further ahead, the High Luminosity LHC workshop held at CERN this week formally kicked off the process that will lead to a significant increase in luminosity for the LHC's second decade of running, starting sometime after 2020. Work at CERN, in the US by the US LHC Accelerator Research Program (LARP), and at KEK in Japan has been ongoing for some time, developing the

technologies needed for new magnets, power transmission systems and RF cavities. Thanks to funding from the European Commission's seventh framework programme, FP7, these efforts can now be brought together under a global umbrella in which some 14 European institutions are also involved. CERN's bid for FP7 funding received the maximum possible score: a clear signal of the quality of the project and the importance that Europe places in CERN and the LHC.

This week exemplifies much that's good about particle physics: results that challenge our preconceptions; feats of engineering that challenge the limits of the possible; and long-term planning with a global vision. Here's looking forward to many more such weeks.

Rolf Heuer

LHC Report: a record start for LHC ion operation

The LHC technical stop ended on the evening of Friday, 11 November. The recovery from the technical stop

was extremely smooth, and already that same evening ion beams were circulating in the LHC. 'Stable beams' were declared the same night, with 2 x 2 bunches of ions circulating in the LHC, allowing the experiments to have their first look at ion collisions this year.

However, the next step-up in intensity – colliding 170 x 170 bunches – was postponed due to a vacuum problem in the PS accelerator, so the collisions on Sunday, 13 November were confined to

After the technical stop, the LHC switched over to ion operation, colliding lead-ions on lead-ions. The recovery from the technical stop was very smooth, and records for ion luminosity were set during the first days of ion operation.

9 x 9 bunches. The vacuum problem was solved, and on the night of Monday, 14 November, trains of 24 lead bunches were injected into the LHC and 170 x 170 bunches were brought into collision through the accumulation of several injections.

The resulting peak luminosity at the experiments, of $1.5 \times 10^{26} \text{ cm}^{-2}\text{s}^{-1}$, was already 5 times last year's record. This successful result was due to the smaller beam size at the collision points in the experiments, the so-called β^* , which was also partly responsible

for the success story for proton operation this year. Other contributing factors are the larger number of bunches (only up to 137 bunches in 2010) and the extremely good beam quality from the injector chain.

The next fill on Tuesday evening (15 November) beat this record luminosity by more than a factor of two by increasing the number of bunches to 358 x 358. This record fill gave a peak luminosity of $3.5 \times 10^{26} \text{ cm}^{-2}\text{s}^{-1}$ and collected an integrated luminosity of more than 40 % of the whole 2010 ion run in about 6 hours of physics. This is extremely promising for the ion physics run ahead, which will continue until 7 December.

Jan Uythoven for the LHC Team

By invitation only

"In the tradition of the Solvay Conferences, this is a discussion-oriented meeting with few talks by rapporteurs." Thus reads the Introduction to the Scientific Programme of the Solvay Conference on Physics. In the Conference programme, the rapporteurs speak for only 30 minutes, with the specific aim of triggering discussion with the audience. And, if you scroll down the list of the rapporteurs, you will find names that have written or are in the process of writing the history of physics. Most of them are Nobel Laureates.

Gian Giudice, Ignatios Antoniadis and Gia Dvali, all members of the CERN Theory Group, and Gabriele Veneziano, a former CERN staff member, were invited to participate. Gian Giudice was also invited to give a five-minute introduction about "What we learned from Higgs searches at the LHC". "The intense discussions among the participants are the strong point of this unique conference," says Gian Giudice. "The number of participants is only about three times greater than it was 100 years ago at the first Conseil Solvay. If we think that the number of physicists involved in quantum physics has grown by a factor of at least a hundred, we can appreciate the pains that

The Hôtel Métropole in Brussels is a legendary conference venue that will ring a bell to all physicists. 100 years after the first meeting of the Conseil de Physique Solvay, a representative group of the world's most eminent physicists met again in October this year in the Excelsior Room to discuss "The Theory of the Quantum World". Three members of CERN's Theory Group were invited to participate. Gian Giudice, one of them, shares with us his thoughts and impressions about this exclusive conference.

the organisers take to preserve the quality of the discussions."

While quantum physics was in its early days 100 years ago, today it has become a sort of "umbrella" term comprising many different fields, from quantum gravity to quantum computation and quantum condensed matter. "The interdisciplinary nature of the conference is another important aspect," observes Gian Giudice. "The discussions are between colleagues who are not necessarily involved in the same type of research. This always makes the exchanges very enriching. The field of quantum physics has changed dramatically over the last 100 years, but the lively way in which theoretical physicists argue and discuss has remained the same."

Indeed, one of the enriching discussions this year directly concerned an issue with a CERN stamp: the Bell inequalities. John Bell was a CERN staff member. His work on the



Did you know?

The Conseils Solvay

The Conseils Solvay were set up in 1911 by the Belgian inventor, businessman and philanthropist Ernest Solvay. The first legendary conference was entitled "Conseil Solvay on Radiation and Quanta". The conference was chaired by Lorentz and saw the participation of Einstein, Planck, Rutherford and many others. It was one of the first international conferences ever organised. Today, the Solvay Institutes are a non-profit organisation led by a Board of Directors, which elects a Director. The International Solvay Scientific Committees assist the director and are in charge of the organisation of the Conseils Solvay, including the selection of participants. The Chair of the Scientific Committee for Physics is David Gross, winner of the 2004 Nobel Prize.

The Solvay conferences are not held regularly. You can find more information about the various editions as well as other activities of the Solvay Institutes at:

<http://www.solvayinstitutes.be/>

(Continued on page 4)

By invitation only

(Continued from page 1)

quantum entanglement has significantly contributed to our deep understanding of the quantum world," says Ignatios Antoniadis, Head of the Theory Group.

The enlargement of the scientific field is not the only difference Gian observes when comparing the first Conseil Solvay with the 25th such event that was held this year. "100 years ago quantum physics was essentially a European affair, but today it is completely international. The largest number of participants this year came from the US, but there were also eminent physicists from India, for example," he says.

Although the field has widened its borders, not much has changed in the gender ratio. "At the first Conseil Solvay the only woman was Marie Curie. This year, although the total number of participants was about three times higher, there were only two women among us," confirms Gian Giudice, who then adds: "Theoretical physics is still dominated by men. Hopefully something will change in the future." The case has been made...

Antonella Del Rosso



In 1911, the first Conseil Solvay brought together the finest physicists of the era, including: Marie Curie, Albert Einstein, Max Planck, Henri Poincaré and Ernest Rutherford. (Image Source: http://commons.wikimedia.org/wiki/File:1911_Solvay_conference.jpg)



Attendees at the 25th Solvay Conference on Physics, Brussels. Photo provided by "International Solvay Institutes".

Hybrid beams in the LHC

The technical challenge of making different beams circulate in the LHC is by no means trivial. Even if the machine is the same, there are a number of differences when it is operated with beams of protons, beams of lead or beams of proton and lead.

Provided that the beams are equal, irrespective of whether they consist of protons or lead nuclei, they revolve at the same speed and the bunches always encounter each other in the same conditions in the same places. However, to provide proton-lead collisions, the machine has to be operated with two beams that are unequal in mass and charge. "Since both beams see the same bending field in the two-in-one LHC magnets, the lead nuclei will revolve just a little slower than the protons," explains John Jowett from the LHC Accelerator Physics Group of the Beams Department. "At injection energy, the protons make an extra turn of the ring every 15 seconds. The beam-beam encounter points move slowly along the experimental sections, disappearing into the separate beam pipes and emerging several seconds later around another experiment. The basic periodicity is gone."

The first proton-ion beams were successfully circulated in the LHC a couple of weeks ago. Everything went so smoothly that the LHC teams had planned the first p-Pb collisions for Wednesday, 16 November. Unfortunately, a last-minute problem with a component of the PS required for proton acceleration prevented the LHC teams from making these new collisions. However, the way is open for a possible physics run with proton-lead collisions in 2012.

Furthermore, the LHC bunch train is broken up with assorted gaps so the complex pattern of encounters is constantly shifting. Moreover, as the beams are accelerated, each becoming even more relativistic, this motion slows down abruptly until, at collision energy, the remaining small difference in speed can be absorbed by a small shift of the orbits, the motion freezes and periodicity is restored. But there is no escape from these effects during injection and energy ramping."

Indeed, experience of analogous situations at previous accelerators led some experts to regard this as fatal for beam stability. "Arguments to the contrary were subtle and required experimental tests, and this is what has now been achieved," says John Jowett. On 31 October, after months of careful preparation of the systems, proton and lead beams were persuaded to co-exist quite happily in the two rings and were ramped to full energy.

This was possible because, although the LHC's magnetic fields must be the same for the two beams, the electric fields do not need to be. The independent radiofrequency systems of the two rings can run at different frequencies and are capable of handling two different beams independently. "In the energy ramp, the LHC is transformed into a perfect gigantic roulette wheel: as the motion of the encounter points slows down they can finally end up anywhere," explains John Jowett.

Indeed, initially, the bunches that normally collide at ATLAS ended up meeting each other some 9 km away! However, further virtuoso tuning of the radiofrequency system solved the problem. "Imagine two necklaces with many beads on an elastic string wrapped around a cylinder. To line up the bead patterns, you can make many little tugs on one necklace, stretching it and allowing it to spring back with a small shift," says John. This is closely analogous to what the radiofrequency systems did, except of course that both necklaces were moving around the cylinder in opposite directions 11,000 times a second...

For a scientific description of the proton-lead programme, go to:

<https://cdsweb.cern.ch/record/1352342?ln=en>

CERN Bulletin



Members of the LHC team photographed when the first hybrid beams got to full energy. The proton and lead beams are visible on the leftmost screen up on the wall.



Did you know?

The physics of the proton-lead collisions

Proton-ion collisions will allow physicists to study the properties of the so-called "cold nuclear matter". "We will be able to investigate more precisely than ever before which nuclear objects participate in the collisions. Moreover, during the collisions, the hitting proton will probe the structure of the nucleus. In other words, it will still be a proton-proton collision but with one of the protons bound in the nucleus," explains Yves Schutz, Deputy Spokesperson of the ALICE experiment.

Some theories predict that, at the high collision energy of the LHC, yet a new state of matter could be explored. This state, known as Colour Glass Condensate, is different from the quark-gluon plasma – the hot and dense state created in lead-lead collisions. "Theory tells us that the Colour Glass Condensate is a gluon-

dominated state of matter. By studying proton-ion collisions, we should be able to demonstrate the existence of this state, which would then be the precursor state of the quark-gluon plasma formed in ion-ion collisions," says Yves Schutz.

The main purpose of the future p-Pb runs is to observe the same type of phenomena but with different types of collisions. For example, physicists will be able to compare the behaviour of jets when just two protons collide (jet propagation in the vacuum), when protons and ions collide (jet propagation in cold nuclear matter), and finally when lead and lead-ions collide (jet propagation in hot nuclear matter or QGP). These observations will allow scientists to disentangle the effects due to cold nuclear matter from those due to the formation of the quark-gluon plasma and therefore

represent a powerful test of the current theories of the structure of matter.



Charming surprise

The study of the physics of the charm quark was not in the initial plans of the LHCb experiment, whose letter "b" stands for "beauty" quark. However, already one year ago, the Collaboration decided to look into a wider spectrum of processes that involve charm quarks among other things.

The LHCb trigger allows a lot of these processes to be selected, and, among them, one has recently shown interesting features. Other experiments at b-factories have already performed the same measurement but this is the first time that it has been possible to achieve such high precision, thanks to the huge amount of data provided by the very high luminosity of the LHC. "We have observed the decay modes of the D₀, a particle made up of a charm quark plus a u antiquark," explains Pierluigi Campana, LHCb Spokesperson. "In particular, we have studied and combined the decay rates

The CP violation in charm quarks has always been thought to be extremely small. So, looking at particle decays involving matter and antimatter, the LHCb experiment has recently been surprised to observe that things might be different. Theorists are on the case.

of the D₀ and its antiparticle. According to the theory of the Standard Model, we should have measured a very small value of a parameter known as Delta ACP that is calculated using these decay rates and is related to the properties of matter and antimatter. We found that Delta ACP is around 0.8% instead of the predicted 1% (or less). Although making precise evaluations in processes involving charm quarks is difficult, the Delta ACP parameter appears to be much higher than expected."

And while theorists have already started looking into the unexpected result to check possible explanations or find completely new causes, the LHCb scientists are putting all their energy into pushing their analysis even further. "So far we have analysed only

about 60% of the data available from the 2011 run," says Pierluigi Campana. "We plan to complete the analysis but also to perform independent checks using different approaches and strategies."

The LHCb Collaboration and the theorists held a joint meeting at CERN on 10 and 11 November to discuss the impact of the LHCb results on the current theories and how we should now look at the properties of the charm quark. The improved measurement and the independent checks planned by the Collaboration will certainly contribute to clarifying the situation. The new results should be available by early next year.

For more information about LHCb, please visit the Collaboration's Website at:

<http://lhcb-public.web.cern.ch/lhcb-public/>

Antonella Del Rosso

MapCERN: the CERN map on your mobile

You've got an appointment with someone at the other end of the CERN site and you're planning to use the CERN map to find

your way there but you suddenly realise you've left it in your office... No need to panic! Simply take out your smartphone and let it guide you to the building you're looking for.

This first official CERN application, which has been developed by the GS Department in collaboration with private industry, is available free of charge from the Apple Store in the case of iPhones and from maps.cern.ch/mobile/ for the other types of smartphone (Android and Blackberry). Is it intended for

On the initiative of the GS Department, a new smartphone application called MapCERN has just been released. Available in two different versions – one from the Apple Store for iPhones and the other from the web for Android and Blackberry – it will help you to find the building you're looking for more easily.

anyone needing to find their way to and around the CERN site, from members of the personnel to users, students and visitors.

"The MapCERN application allows you to geolocate yourself, display the building or other feature you're looking for and calculate how far away it is," explains Nathalie Lambert-Cart, a geomatician from the GS Department service responsible for geographic information systems (GIS). "If you have an iPhone, it's also possible to get directions to your "target" and, thanks to its



The Globe of Science and Innovation as "seen" in the augmented reality of the iPhone.



Did you know?

CERN on the net

Several smartphone applications relating to CERN have been developed over recent months, such as the iPhone applications LHC Dash and LHC: Info Browser, which give real-time information on the status of the LHC experiments.

They also include the LHSee application for Android, which allows you to see collisions at the ATLAS detector in 3D and in real time. More information on this application can be found in an article published in International Science Grid This Week on 26 October.

augmented reality system, it will recognise the buildings in its field of view and display their numbers."

MapCERN is a comprehensive application offering a wide range of data covering site access, the routes and stops of the CERN shuttle, transport facilities, restaurants, banks, medical facilities, the Fire Brigade, customs, etc. All you have to do is select or deselect them, according to what you're looking for.

The GS Department is also working on the development of applications that will provide those working at CERN with more specific, technical data, such as the location of underground networks and tunnels.

Full details of MapCERN and other useful links are available at:

http://gs-dep.web.cern.ch/en/content/gis_mobile

Anais Schaeffer

LHC@home is ready to support HiLumi LHC: take part!

LHC@home is aimed at involving the public in real science. If you have a computer that is connected to the Internet, you can join the large team of volunteers who are already supporting its two main projects:

Test4Theory, which runs computer simulations of high-energy particle collisions, and SixTrack, which is aimed at optimizing the LHC performance by performing beam dynamics simulations. In both

cases, the software is designed to run only when your computer is idle and causes no disruption to your normal activities.



Recently relaunched, the LHC@home volunteer computing project is now ready to support the HiLumi LHC project, the design phase of the planned upgrade of the LHC that will increase its luminosity by a factor of 5 to 10 beyond its original design value. HiLumi will need massive simulations to test the beam dynamics. Whether you are at home or at work, you can help experts design the future LHC by connecting your computer to LHC@home. Go for it!

To the simulations run by the SixTrack project, accelerator physicists have recently added those needed for the design of the upgrade of the LHC – the HiLumi LHC project. Despite decades of research, it remains impossible for accelerator experts to predict the exact behaviour of beams in the machine. Intensive numerical calculations can help them a lot.

In particular, SixTrack allows accelerator experts to simulate the single-particle beam dynamics of the protons travelling in the collider to probe whether the various

imperfections leading to non-linear effects might result in slow diffusion and particle losses. These phenomena are particularly relevant to the LHC, as they might lead to magnet quench and could ultimately limit the machine's peak performance. To date, this behaviour is virtually impossible to predict based on theory and requires complex numerical simulations.

By joining the LHC@home programme, you will actively help scientists to obtain more accurate predictions and therefore design a better machine. Whether you are at home or at work (including at CERN!) do not hesitate to join LHC@home!

List of LHC@home partner institutes: CERN, EPFL, LHC Physics Center at CERN and Citizen Cyber Science.

CERN Bulletin

"If knowledge were light, there would be an aureole of light over CERN!"

He was born in Geneva in 1911, just when Rutherford was discovering the structure of the atom. Jean De Toledo says that it has been a long-standing dream of his to visit the Laboratory, to the construction of which he was a witness.

"CERN is a fabulous place, and a great plus for Geneva," he said in a discussion with CERN Director-General Rolf Heuer. Smiling and with a glass of champagne in his hand, he received a copy of the book LHC: the Large Hadron Collider and a "magic coffee mug", whose secret was explained to him by the Director-General.

"There is a prodigious accumulation of knowledge here," he said, and expressed his regret that "enough of it doesn't permeate beyond the Organization". Rolf Heuer assured him that CERN was in fact working actively to achieve just that. The visitor concluded with the words, "If knowledge were light, there would be an aureole of light over CERN!" It's hard to think of a nicer compliment from a man whose birth coincided with that of nuclear physics.

Anaïs Schaeffer



During his meeting with the Director-General, Jean de Toledo was given the LHC: the Large Hadron Collider book, which he made sure to have Rolf sign.

Care to dance?

The project Collide@CERN was launched in September in the framework of CERN's new cultural policy

(announced in an article published in Bulletin No. 50-51/2010). The project, whose main objective is to achieve a symbiosis between the imagination of artists and the creativity of scientists, features an artist-in-residence scheme that will run for three years.



From left to right: Sami Kanaan, Rolf Heuer, and Charles Beer.

The second part of the artistic programme Collide@CERN was officially launched at the beginning of November. The initiative, a dance and performance award, is the result of a partnership between CERN, the City of Geneva and the Canton of Geneva.

The Organization has concluded two cultural partnerships for the purpose: one with Ars Electronica Linz, an Austrian organisation specialising in the digital arts, which will sponsor a digital arts prize (see article published in Bulletin No. 37-38 earlier this year), and the other with the City and the Canton of Geneva, which will sponsor the dance and performance award. Open to dancers and performers born or currently working in Geneva, the award was unveiled in the Globe on 4 November, when the application process was officially opened.

"Collide@CERN will allow dancers and choreographers from Geneva to encounter scientific domains that may be unfamiliar to them, explore new horizons, and express emotions

that may surprise us and can help us to recapture the human element that seems to be sadly lacking in these times," said Charles Beer, State Councillor in charge of the Department of Public Instruction, Culture and Sport of the Republic and Canton of Geneva. "Partnerships between the world of science and the world of art are an excellent means of making both experimental fields more accessible to the public and heightening their impact," added Sami Kanaan, Administrative Councillor in charge of the City of Geneva's Department of Culture and Sport.

These cultural partnerships will be extended on a yearly basis until 2014, and there are plans to create additional awards in 2012 and beyond.

Further information about the Collide@CERN programme and the conditions of participation is available at:

<http://arts.web.cern.ch/collide>

Anaïs Schaeffer

Celebrating the staff members with 25 years of service

The 27 staff members who have spent 25 years within CERN in 2011 were invited by the Director-General to a reception in their honour on 8 November.

Alvarez-Gaume	Luis	PH	Esteveny	Laure	DG	Martinez Yanez	Pablo	BE
Arruat	Michel	BE	Giguet	Jean-Michel	BE	Nouchi	Philippe	BE
Bonneau	Pierre	EN	Haug	Friedrich	TE	Olinger	Serge	EN
Bordry	Frederick	TE	Herr	Werner	BE	Revol	Jean-Pierre	PH
Camporesi	Tiziano	PH	Jones	Peter	IT	Soby	Lars	BE
Chevallay	Eric	EN	Jonker	Michael	TE	Trilhe	Philippe	EN
De Rijk	Gijsbertus	TE	Jost	Beat	PH	Van Der Vossen	Olaf	GS
Denuziere	Dominique	TE	Linszen	Lucie	PH	White	Thomas	GS
Divia	Roberto	PH	Mage-Granados	Patricia	DG	Zorica	Vedrana	DG



A Saturday of science: inspiring young girls' careers

The philosophy of *Expand Your Horizons* is to set an example: all workshops and career booths are staffed by women scientists, so that the girls can really identify with the scientists and feel that they could be them.

For the 2011 Geneva event, the participants, recruited from nearby public and private schools both in France and Switzerland, could choose from 11 different workshops, including building a solar car, programming a robot, discovering the underlying chemistry in a kitchen or casting their own medal.



Some of the girls got to build their own cloud chamber to "see the invisible" cosmic rays (Photo credit: Doris Chromek-Burckhart).



Creating a Higgs field and watching which particles (from the Particle Zoo) are influenced by it and acquire mass (Photo credit: Doris Chromek-Burckhart).

On 12 November, more than 240 girls aged 9-14 descended upon the Geneva University science building for the second Geneva edition of *Expand Your Horizons*. This initiative, started in the United States in 1974, aims to inspire young girls to consider scientific careers by giving them a chance to do fun, hands-on experiments in all sorts of technical and scientific fields.

The workshop leaders came not only from organisations and companies like Novartis, Merck Serono, and EPFL, but also from universities in Lisbon and Liverpool. Twelve female physicists from CERN led three different workshops where the kids got to build their own cloud chamber to see cosmic rays, play with interactive set-ups about the unanswered questions we are trying to tackle at CERN, and have cool fun with liquid nitrogen. There were also a booth where the girls had the whole Particle Zoo to play with, posters showing women from CERN experiments, and a pop-up book of the ATLAS detector.

It was hard to tell who had more fun, the scientists or the kids. In one workshop, the kids dipped balloons and gummy bears into liquid nitrogen and made a water jet similar to Geneva's famous landmark, using expanding liquid nitrogen to push water out of a sealed container.



Monica Dunford, who coordinated the participation of CERN women in this workshop, enthralled her audience at the CERN booth (Photo credit: Doris Chromek-Burckhart).



Did you know?

Women and CERN

Initiatives like *Expand Your Horizons* have been paying off, and the number of women in scientific fields is increasing. At CERN, where about 10,000 scientists are employed by hundreds of institutes from roughly 70 countries, women scientists now account for about 18% of all physicists and engineers. This percentage is much higher among young scientists and gives the pulse for how women are doing in physics in these countries.

Pauline Gagnon



Raise your defence: a baseline for security

In particular, at CERN, those services visible to the Internet are permanently probed. Web sites and servers are permanently scanned by adversaries for vulnerabilities; attackers repeatedly try to guess user passwords on our remote access gateways like LXPLUS or CERNTS; computing services, e.g. for Grid computing, are analysed again and again by malicious attackers for weaknesses which can be exploited. Thanks to the vigilance of the corresponding system and service experts, these attackers have not been too successful so far.

However, applying basic security measures is not easy, in particular when you are not familiar with security concepts and protection measures: certain aspects might be overlooked or omitted. This might render a system or service open to attack when the corresponding experts believe their system/service is secure! In order to provide better guidance, the Computer

It is an unfair imbalance: the (computer) security of a system/service is only as strong as the weakest link in the chain of protection. This provides attackers with an incredible advantage: they can choose when to attack, where and with which means. The defence side is permanently under pressure: they must defend at all times all assets against all eventualities. For computer security, this means that every computer system, every account, every web site and every service must be properly protected --- always.

Security Team has published a series of so-called Security Baselines:

- Security Baseline for servers, PCs and laptops (EDMS 1062500);
- Security Baseline for file hosting services (EDMS 1062503);
- Security Baseline for Web hosting services (EDMS 1062502);
- Security Baseline for Industrial Embedded Devices (EDMS 1139163).

These Security Baselines define basic security requirements and are intended to be pragmatic and complete, but do not imply technical solutions. They should serve as guidelines for system/service experts. For all critical systems/services, however,

the corresponding owner must produce a so-called "Security Implementation Document" and outline how their system/service meets the corresponding Security Baselines. The system/service must be implemented and deployed in compliance with this Implementation Document. Non-compliance ultimately leads to reduced network connectivity (i.e. closure of any outer perimeter firewall openings, ceased access to other network domains, or complete disconnection).

If you need assistance or consultancy to implement appropriate security measures, or if you have suggestions for additional Security Baselines, please contact us at Computer.Security@cern.ch. For further information, please see [here](#).

P.S. These fine people have done it all right: Paul Burkimsher (EN/ICE) and Yann Donjoux (DGS/RP). They are the winners of the "Security BINGO" series published in the last issues of the Bulletin.

Computer Security Team



Ombuds' Corner Le coin de l'Ombuds

In this series, the Bulletin aims to explain the role of the Ombuds at CERN by presenting practical examples of misunderstandings that could have been resolved by the Ombuds if he had been contacted earlier. Please note that, in all the situations we present, the names are fictitious and used only to improve clarity.

Responsibility and reporting

Jack* is a new staff member. He joined CERN after having worked successfully in industry, where he had been given considerable responsibility in projects as well as in human resources, despite the fact that he was still young. After a few months, given his expertise, he found himself in charge of part of a project, technically, and also responsible for a few collaborators. That did not present any difficulty for him given his past experience where he was used to handling business in quite an independent way. Also, a high level of respect and ethics had been encouraged by his past employer, which helped him in the interaction with his colleagues. For some time, everything went fine; Jack worked efficiently with his team.

The situation started to change when Sam* - his supervisor - began to poke his nose into Jack's project, repeatedly making comments and trying to influence the project's direction with his own ideas. At once, Jack considered Sam's behaviour as an intrusion into his responsibilities and interpreted it as an obvious lack of confidence in him on Sam's part. Jack had previously been used to being

left fully in charge of his projects, and interpreted Sam's actions as a direct indication that his hierarchy had unexpressed doubts about him. He felt undermined and expressed his feelings in clear terms to Sam.

Sam listened to him but, in the end, refused to discuss the matter further as he took it as contradicting his position as supervisor. The interaction between them escalated to the point where Sam lost his temper and, unfortunately, went as far as telling Jack that he had to do what he was told. Facing what he took as an uncompromising attitude was a real shock for Jack, and was, in his mind, contrary to the ethical standards he had been used to in industry. Everyone he had worked with had based their management on the competence of the individual employee, including their skills in human management, and had not abused their hierarchical position. At this point, he came to the Ombuds to express his confusion and disappointment.

After some parallel discussions involving both of them, Jack and Sam agreed with the Ombuds to try to mediate their dispute. On this occasion a correct balance between both of them concerning adequate and

necessary reporting on one side and a guaranteed freedom of action within some limits on the other could be agreed and specified in detail.

Conclusion

People at CERN may come from places where ethics have been practiced for a long time as an essential ingredient of a respectful workplace environment. At CERN it still turns out that, here and there, occasionally, some people may not have yet fully integrated the Code of Conduct. The world is not the same as it was twenty years ago, and neither is CERN. So it is really time now that such values as respect, discussion and listening are fostered by all, with pride.

PS: The 2010-2011 annual report of the Ombuds is available at:

<http://ombuds.web.cern.ch/ombuds-links/Annual-report-2010-11.pdf>

Contact the Ombuds early!

<http://cern.ch/ombuds>

Vincent Vuillemin

* Names and story are purely fictitious.

News from the Library

Le Monde, International Herald Tribune and many more titles are displayed

in their original layout including text and images, and you can print and e-mail the articles you are interested in. You even have the possibility to create rss feeds, so that the news reaches you directly.

News from the Library: newspapers anyone? Try PressDisplay!

PressDisplay is an online portal where you can browse and read online articles from more than 1,900 newspapers from 95 countries, as soon as they are published. With Pressdisplay, the time when newspapers were nicely displayed on wooden rods in libraries has passed...

The CERN Library has now activated a trial version of PressDisplay valid till 31 December; it is open to everyone at CERN. This trial doesn't offer the possibility to create personalised alerts based on specific search criteria. In case you need such

features - or if you have any comments or questions - please contact us:

library-serials@cern.ch

CERN Library



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.

PROCEDURE FOR OBTAINING VISAS FOR SWITZERLAND AND FRANCE

SIGNATURE RIGHTS

In accordance with the Status Agreements with CERN, Switzerland and France facilitate the entry of members of the Organization's personnel on to their territories. Where relevant, detailed procedures for obtaining visas apply.

Within the framework of those procedures, only the following individuals are authorised to initiate the note verbale procedure as well as to sign the Official Invitation Letters and the Conventions d'accueil.

1. Kirsti ASPOLA (PH – CMO)
2. Oliver BRÜNING (BE – ABP)
3. Michelle CONNOR (PH – AGS)
4. Patrick FASSNACHT (PH-ADO)
5. David FOSTER (IT – DI)
6. Nathalie GRÜB (PH – AGS)
7. Tjitske KEHRER (DG-DI)
8. Tadeusz KURTYKA (DG – PRJ)
9. Cécile NOELS (DG – PRJ)
10. Maria QUINTAS (HR – SPS)
11. Kate RICHARDSON (PH-AGS)
12. Jeanne ROSTANT (PH – AGS)

13. José SALICIO-DIEZ (PH – AGS)

14. Ulla TIHINEN (PH – AGS)

15. Emmanuel TSESMELOS (DG)

16. Rüdiger VOSS (PH – ADE)

The French and Swiss Authorities will reject any request signed by a person who is not on this list.

We would like to remind you that in accordance with the memorandum of 7 December 2000 issued by the Director of the Administration, (ref. DG/DA/00-119), "the Organization shall not request any legitimisation document (or residence permit) or visa from the Host States for persons registered as EXTERNAL" (people who do not hold a contract of employment, association or apprenticeship with CERN).

We would also like to remind you that those coming to CERN should find out in good time about the conditions of entry to Switzerland and France applying to them and ensure that they obtain the requisite visas, where applicable, in the country in which they are habitually resident.

Useful information can be obtained from the Swiss and French diplomatic representations abroad, as well as from the following Web pages:

- http://www.bfm.admin.ch/content/bfm/en/home/dokumentation/rechtsgrundlagen/weisungen_und_kreisschreiben/visa/liste1_statsangehoerigkeit.html (Swiss Federal Office for Immigration);
- http://www.diplomatie.gouv.fr/en/france_159/coming-to-france_2045/getting-visa_2046/general-information-for-foreign-nationals-with-ordinary-passeports_1559.html (French Ministry of Foreign and European Affairs).

The Authorities of the Host States have informed the Organization on a number of occasions that they insist upon scrupulous compliance with visa legislation.

Relations with the Host States Service
<http://www.cern.ch/relations/relations.secretariat@cern.ch>



VISIT OF UK FIRMS AT CERN

24 – 25 NOVEMBER 2011

09h00 to 17h00 Thursday 24 November

09h00 to 17h00 Friday 25 November

Individual interviews will take place in technicians' offices. The firms will contact relevant users/technicians but any user wishing to make contact with a particular firm is welcome to use the contact details which are available from each secretariat of department or from the GS Department web pages at the following URL:

<http://gs-dep.web.cern.ch/en/content/Industrial-Exhibitions>

List of Companies:

- AWS Electronics
- Cryogenic
- Hytec Electronics
- Industrial Electronic Wiring
- M G Sanders
- MDC Vacuum
- MM Microwave
- Premier Building and Engineering
- Russel Ductile Castings
- Tadley Engineering
- NDSL

For further information please contact Claudia Bruggmann Furlan GS-IS-LS 73312 or Caroline Laignel GS-DI 73722.

IMPORTANT INFORMATION - FLAGSTAFF CAR-PARK AND PARK-AND-RIDE (P+R)

As part of the new arrangements following the arrival of the tram-line at CERN, an Automatic Number-Plate Recognition (ANPR) system has been installed restricting access to the Flagstaff Car-park and the Park-and-Ride (P+R) zone according to the conditions set out below:

Holders of a valid P+R user card may enter the car-park at all hours but may only park in the area specifically designated as the P+R zone. P+R user cards can be purchased from the Fondation des Parkings de Genève (<http://www.ge.ch/parkings/abonnements.html>)

Members of CERN staff and of contractors' personnel, whatever their status, may freely access the Flagstaff Car-Park at all hours, as long as their vehicle is duly registered with CERN, but they may not use the P+R zone, which is reserved for holders of P+R user cards.

Please check that your vehicle number-plates are properly registered via AdaMS (<http://cern.ch/adams>). If this is not the case, the following action must be taken:

- for private or company-owned vehicles: please contact the Registration Service access.registration@cern.ch;
- for drivers of vehicles with green plates: please contact the Installation Service installation.service@cern.ch,
- for drivers of CERN vehicles: please contact your Car-pool correspondent.

Occasional visitors are, by default, entitled to a single (in-out) access to the Flagstaff Car-Park, but are not entitled to park in the P+R area. If they wish to access the Flagstaff Car-Park again they must apply to Building 33, otherwise they will be refused entry.

To ensure your number plates are properly identified:

Check they are in a good condition (no holes, deformations, etc.).

Bring your vehicle to a full stop at the white line before the gate.

Signs

	Identification in progress		Plate identified Access authorised		Plate unknown
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GS-ASE / GS-IS



Take note

94TH ACCU MEETING

**DRAFT Agenda
for the meeting to be held
on Wednesday 7 December 2011
at 9:15 a.m. in room 60-6-002**

- | | |
|--|---|
| 1. Chairperson's remarks | 8. Report on Summer Students |
| 2. Adoption of the agenda | 9. Users Organization in the U.S. (US LUO) |
| 3. Minutes of the previous meeting | 10. Reports from ACCU representatives on other Committees |
| 4. Matters arising | a. Accommodation Facilities Working Group |
| 5. News from the CERN Management | 11. Users' Office news |
| 6. Report on services from GS department | 12. Any Other Business |
| 7. CHIS report and Creche status | 13. Agenda for the next meeting |

Anyone wishing to raise any points under item 12 is invited to send them to the Chairperson in writing or by e-mail to

Michael.Hauschild@cern.ch
subject=Next ACCU meeting

Michael Hauschild (Secretary)

ACCU is the forum for discussion between the CERN Management and the representatives of CERN Users to review the practical means taken by CERN for the work of Users of the Laboratory. The User Representatives to ACCU are:

Austria	M. Jeitler (manfred.jeitler@cern.ch)	Norway	J. Nystrand (Joakim.Nystrand@cern.ch)
Belgium	C. Vander Velde (Chairperson) (catherine.vander.velde@ulb.ac.be)	Poland	P. Bruckman De Renstrom (Pawel.Bruckman.de.Renstrom@cern.ch)
Bulgaria		Portugal	P. Bordalo (Paula.Bordalo@cern.ch)
Czech Republic	S. Nemecek (Stanislav.Nemecek@cern.ch)	Romania	R. Muresan (Raluca.Muresan@cern.ch)
Denmark	J.B. Hansen (Jorgen.Beck.Hansen@cern.ch)	Slovak Republic	A. Dubnickova (Anna.Dubnickova@cern.ch)
Finland	K. Lassila-Perini (Katri.Lassila-Perini@cern.ch)	Spain	I. Riu (Imma.Riu@cern.ch)
France	N. Besson (Nathalie.Besson@cern.ch) A. Rozanov (Alexandre.Rozanov@cern.ch)	Sweden	K. Jon-And (ker@physto.se)
Germany	H. Lacker (lacker@physik.hu-berlin.de) I. Fleck (fleck@hep.physik.uni-siegen.de)	Switzerland	M. Weber (michele.weber@cern.ch)
Greece	D. Sampsonidis (Dimitrios.Sampsonidis@cern.ch)	United Kingdom	M. Campanelli (Mario.Campanelli@cern.ch) T. Berry (tracey.berry@cern.ch)
Hungary	V. Veszprémi (Viktor.Veszpremi@cern.ch)	Non-Member States	D. Acosta (Darin.Acosta@cern.ch) E. Etzion (Erez.Etzion@cern.ch) C. Jiang (jiangch@mail.ihep.ac.cn) N. Zimine (Nikolai.Zimine@cern.ch)
Italy	G. Passaleva (giovanni.passaleva@fi.infn.it) N. Pastrone (Nadia.Pastrone@cern.ch)	CERN	E. Auffray (Etienne.Auffray@cern.ch) R. Hawking (Richard.Hawking@cern.ch)
Netherlands	G. Bobbink (Gerjan.Bobbink@cern.ch)		

CERN Management is represented by Sergio Bertolucci, (Director for Research and Computing), Sigurd Lettow (Director for Administration and General Infrastructure), Jose Salicio Diez/PH with Michael Hauschild/PH as Secretary and Doris Chromeck-Burckhart/Head of the Users' Office. Human Resources Department is represented by James Purvis, the General Infrastructure Services Department by Isabelle Mardirossian, the Occupational Health Safety and Environmental protection Unit by Enrico Cennini, and the CERN Staff Association by Michel Goossens.

Other members of the CERN Staff attend as necessary for specific agenda items. Anyone interested in further information about ACCU is welcome to contact the appropriate representative, or the Chairperson or Secretary (73564 or Michael.Hauschild@cern.ch subject=Next ACCU meeting).

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



Take note

GENERAL INFORMATION MEETING ON THE EUROPEAN CO-OPERATIVE ASSOCIATION OF INTERNATIONAL CIVIL SERVANTS (AMFIE)

**Monday 28 November 2011 at 12h
(61/1-009 – Pas Perdus, room C)**

Mrs. Janine RIVALS, Vice-Chairwoman of AMFIE's* Board of Directors and Mrs. Hélène ECKERT, coordinator for all international organisations in Switzerland, will make a general presentation on AMFIE's personal financial services and how they may benefit international civil servants. They will also focus on the particular financial challenges faced by expatriate civil servants and on the solutions AMFIE can offer. The presentation will be followed by a question and answer session.

Private consultations – from 11:00 to 12:00 and from 14:00 to 17:30 (61/1-009 and 61/0-006)

Participants who wish to meet AMFIE's representatives for one-to-one private consultations are invited to contact directly Mrs. Janine Rivals (+33/1 45 35 70 79, GSM +33/6 63 58 36 62 or jr@amfie.org) or AMFIE's Secretariat in Luxembourg (+352/42 36 61-1 or amfie@amfie.org). It will be possible to make an appointment on the day itself, after the end of the presentation by choosing amongst the available slots.

There are 3 coordinators or liaison officers at CERN, who can also answer general questions :

Joel LAHAYE, tel 73461

Erwin MOSSELMANS, tel 74125

Nicolas SALOMON, tel 75583

* AMFIE is a cooperative society open exclusively to international civil servants. It is managed by a group of active and retired international civil servants. Created in 1990 as a fully licensed financial institution, it is subject to the laws and regulations which govern the activities of Luxembourg's financial sector.

The Cooperative offers its members a broad range of financial services and products at little or no cost in the six currencies available to accounts holders (EUR, CHF, GBP, USD, CAD, AUD).

NEW PROCEDURE FOR ACCOUNT OPERATIONS AT THE CERN SERVICE DESK

Who can activate your computing account? Who can unblock it? And who can reset your password if it was forgotten? Just until recently, users who addressed such problems to the Service Desk were asked a set of questions...

The corresponding answers were supposed to properly verify the requestor's identity such that only the real owner can activate/unblock/reset his computing account, but not some wannabe. However, it turned out that the answers were easily obtainable (and that there is no better set of questions to ask).

Therefore, in order to ensure optimal protection of your account, this procedure is going to be replaced on November 28th 2011. From that date on, users will be asked to produce a physical ID when requesting to the Service Desk to perform operations like computer account activation, account unblocking or password resets. This physical ID can either be a passport/ID card or the CERN access card. If you need to activate/unblock/reset your computing account, you have either to produce your ID directly at the Service Desk in building 55, or send a scanned copy to the Service Desk by email (Service-Desk@cern.ch), attached to your request.

Alternatively, if your account is not blocked, you can reset your password by yourself, via the account portal, provided you have registered an external email address in advance (via the account portal: <http://cern.ch/account> -> 'Manage my accounts' following the link on the right 'Provide or update an external email address'). (See announcement on CERN Bulletin No. 39).

For further information, please check our web site (<https://cern.ch/security>) or contact us at Computer.Security@cern.ch.

CERN ELECTRONICS POOL PRESENTATIONS

The CERN Electronics Pool is organising a series of presentations in collaboration with oscilloscope manufacturers according to the schedule below.

Time will be available at the end of each presentation to discuss your personal needs. The Agilent presentation had to be postponed and will be organised later.

- Rohde & Schwarz: Wednesday, November, 16th 2011, in 40-S2-A01, 09:30 to 11:15,
- Tektronix: Friday, November 18th 2011, in 1-1-025, 09:30 to 11:30,
- Lecroy: Friday, November 24th 2011, in 530-R-030, 14:00 to 16:30.



Seminars

MONDAY 21 NOVEMBER

TH INFORMAL LATTICE MEETING

11:00 - TH Auditorium, Bldg. 4

QCD thermodynamics with Wilson fermions

D. NOGRADI / BUDAPEST UNIVERSITY

TUESDAY 22 NOVEMBER

LHC SEMINAR

11:00 - Main Auditorium, Bldg. 500

TOTEM Physics – Results and Perspectives

S. GIANI / CERN

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

Emergent geometry from string amplitudes

R. RUSSO

WEDNESDAY 23 NOVEMBER

TH COSMO COFFEE

11:00 - TH Auditorium, Bldg. 4

Effective Field Theory in Inflation

M. JACKSON / LEIDEN UNIVERSITY

THURSDAY 24 NOVEMBER

COLLIDER CROSS TALK

11:00 - TH Auditorium, Bldg. 4

Aaron Armbruster: Details on the ATLAS/CMS Higgs combination

A&T SEMINAR

14:15 - BE Auditorium Meyrin, Bldg.6

Mechanical stabilization and positioning of CLIC quadrupoles with sub-nanometre resolution

S. JANSSENS / INTER-UNIVERSITY INSTITUTE FOR HIGH ENERGIES (BE), P. FERNANDEZ CARMONA / EN-MME

FRIDAY 25 NOVEMBER

PARTICLE AND ASTRO-PARTICLE PHYSICS SEMINARS

14:00 - TH Auditorium, Bldg. 4

TBA

H. RZEHAK / CERN-TH

MONDAY 28 NOVEMBER

OTHER SEMINARS

12:00 - Bldg. 61, Room C, 1sr Floor

AMFIE Information meeting - open to active or retired members of personnel of CERN

J. RIVALS / AMFIE, H. ECKERT

TUESDAY 29 NOVEMBER

TH STRING THEORY SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA

P. VIEIRA / PERIMETER INSTITUTE

A&T SEMINAR

14:15 - BE Auditorium Prévessin, Bldg. 864-1-D02

From point cloud acquisition to 3D model - As Built and Reverse Engineering at CERN using 3D laser scanning technologies

A. MAURISSET, D. MERGELKUHL / CERN

WEDNESDAY 30 NOVEMBER

TH COSMO COFFEE

11:00 - TH Auditorium, Bldg. 4

TBA

C. BYRNES / CERN-TH

TH THEORETICAL SEMINAR

14:00 - TH Auditorium, Bldg. 4

TBA

P. NASON

THURSDAY 1 DECEMBER

INDUCTION SESSIONS

08:30 - Globe 1st Floor

INDUCTION PROGRAMME - 1st Part

N. DUMEAX, S. LYNNE HOBSON / CERN, D. SERAFINI

COLLIDER CROSS TALK

11:00 - TH Auditorium, Bldg. 4

Simplified Models

S. A. KOAY / UNIV. OF CALIFORNIA SANTA BARBARA (US), Z. LOUIS MARSHALL / CERN

CERN COLLOQUIUM

16:30 - Council Chamber, Bldg. 503

The Nature of Belief. An Interactive Journey Through Your Mind's Eye

A. SECKEL

FRIDAY 2 DECEMBER

DETECTOR SEMINAR

11:00 - Bldg.13, 2-005

ALICE Inner Tracking System

A. MASTROSERIO



Meeting at CERN



LHC Injectors Upgrade

LIU-2011 Event

25 November 2011

09:00-17:30 - BE Auditorium Prévessin, 864-1-D02

The LHC injectors upgrade (LIU) project has been launched at the end of 2010 to coordinate the preparation of the CERN accelerator complex for fulfilling the needs of the High Luminosity LHC (HL-LHC) until at least 2030. It should be completed by the end of the second long LHC shutdown, presently scheduled in 2018.

The goal of the LIU-2011 event is to present the status and plans of the LIU project, describing the needs and the actions foreseen in the different accelerators, from Linac4 to the PSB, PS and SPS.