CERN Bulletin

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NEW LHCB MANAGEMENT READIES FOR RUN 2 CHALLENGES

As of 1 July, LHCb, one of the four biggest experiments at the LHC, will have a new Management. Ahead are the huge challenges of run 2 and the following long technical shutdown during which LHCb will undergo a major upgrade. In the meantime, the discovery of new physics could be a dream within reach…

New LHCb Spokesperson, Guy Wilkinson.

"We have to make sure that the detector wakes up after its long hibernation and goes back to data taking in the most efficient way and that we are able to process all these data to produce high-quality physics results," says Guy Wilkinson, new Spokesperson of the LHCb collaboration. Although this already sounds like a considerable "to-do" list for the coming months, it's just the beginning of a much longer and ambitious plan. "The previous management has done an excellent job in analysing the data we took during run 1. They also put on a very sound footing the LHCb upgrade, which is a major project set to begin operation after the second long shut-down."

During the 2018-2019 shutdown, the LHCb collaboration plans to change the electronics throughout all of the subdetectors, in addition to installing a new vertex detector, RICH detector, tracker and trigger system. "We will operate at higher luminosity and will readout our detector at a higher rate," explains Wilkinson. "In this way, we will be able to benefit more from the huge rate of beauty and charm production at the LHC."

The ambitious upgrade programme will be undertaken by the whole collaboration, including several new institutes that have joined in recent years. "The scientific community interested in flavour physics saw

(Continued on page 2)

A REPORT FROM COUNCIL

The June meeting of Council is always a very busy one, having approval of the next year's budget and the MTP as fixed agenda points. This year in addition, we had discussions on enlargement, as well as on the pension fund. I'd like to use this message to bring you up to date on all of those matters.

(Continued on page 2)

In this issue

NEWS

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A word from the DG

(Continued from page 1)

A REPORT FROM COUNCIL

I'll begin with the good news that the 2015 budget and MTP were recommended for approval by Finance Committee on Wednesday, and approved by Council on Thursday. This is extremely good news, and a solid vote of confidence from Council in the current economic situation. Coupled with that, I am pleased to report that at the half way stage of 2014, some 89% of budget contributions for the year have been received.

Turning now to enlargement, I can inform you that the task force that went to Pakistan came back with a positive report, and as a consequence Council has authorised us to finalise discussion with Pakistan for Associate Membership. Council also authorised a fact-finding task force to visit Croatia following their application for Associate Membership.

Finally, I'd like to turn to a subject close to the hearts of those of you who are members of the CERN pension fund. As you are certainly aware, Council agreed in 2010 to a package of measures including an annual transfer of funds from the CERN budget to the pension fund over a period of 30 years to allow CERN to address the fund's structural deficit. The positive effects of these measures are already beginning to show, with the pension fund in better health than it has been for many years. However, this question is now back on the table. It was discussed this week, and will be discussed again in future Council meetings.

Rolf Heuer

NEW LHCB MANAGEMENT READIES FOR RUN 2 CHALLENGES

(Continued from page 1)

what a good job we did during run 1 and they want to come onboard and be part of this run 2 exploitation," comments Wilkinson. "They have been particularly excited by the challenge of building the new subdetectors that we will need for the experiment's upgrade."

"The coming years are going to be particularly difficult because we'll be taking data, analysing data and starting to construct the new detectors. The real challenge for the new management will be juggling these balls simultaneously. Often this will involve the same people so people will be very busy," adds Monica Pepe-Altarelli, new Deputy Spokesperson of the LHCb collaboration.

There are indeed very exciting physics possibilities for LHCb during both run 2 and after the planned upgrade. Some of their results from run 1 hint at slight tensions with the Standard Model. These might go away but the only way to progress is to keep studying these phenomena with the new data. "Our dream would be to make sufficiently precise measurements so that eventually something that cannot be explained in the Standard Model does indeed show up unambiguously," says Wilkinson. "So far, there has been no direct observation of any new particles associated with physics beyond the Standard Model. However, the precise studies of relatively low energy phenomena that we perform are in principle very sensitive to the contribution of such new particles, for example those predicted by supersymmetry. Our hope is to find incontrovertible evidence of their existence in our data."

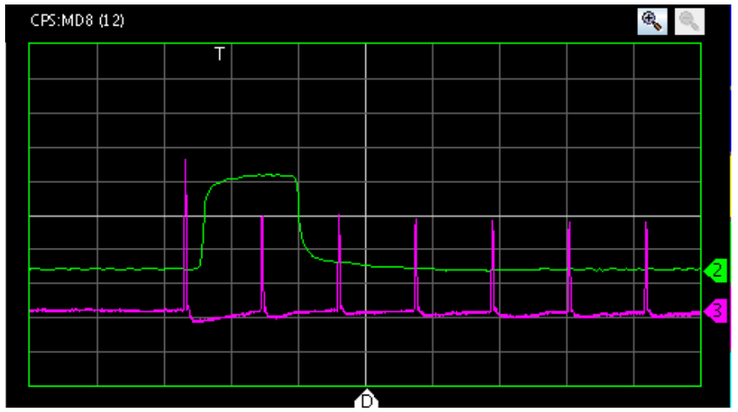
Although maintaining the excellent performance of the detector, preparing for the upgrade and keeping one of the world's highest scientific publication rates per member are Guy Wilkinson's objectives, his priorities are clear. "We want to make sure that LHCb remains a happy collaboration and that all people involved feel that they have equal stake, equal responsibility and can take equal pride from the achievements of the experiment. We are starting from a very good place but the management will certainly be responsive, open and encouraging particularly young people and women physicists who might want to come and speak to us and tell us their ideas and hopes for the experiment. My wish is that we will be perceived as an open management and I do hope that time will confirm this," he concludes.

Antonella Del Rosso

LS1 REPORT: PS BEAMS ARE BACK!

For the first time in over 15 months, there are beams back in the PS. Making their first tour of the accelerator on 20 June, their injection marks the end of weeks of cold checkouts and hardware commissioning in the PS.

Since hardware commissioning was wrapped up on 23 May, the Operations Group (BE-OP) has been conducting cold checkouts on the PS. This involves switching on all of the machine's systems, verifying that they respond to commands by OP and ensuring they are calibrated to beam timings. "These verifications were done, in part, during the hardware commissioning dry runs," says Rende Steerenberg, PS section leader. "But the cold checkouts are on a much larger scale, as we act as if there is beam in the whole machine. We placed a full load on the controls system, cooling, networks, etc. in order to setup the accelerator in the most realistic conditions possible, with the aim to identify remaining issues before injecting beam."



On 20 June the PS injection kicker 2 sent the first proton bunch into the accelerator for thousands of turns. Beam position monitors see the bunch every time it completes one turn (signal 3 - seven turns displayed in this image). It takes the beam 2.3 µs to travel the 628 metre circumference of the PS; this can be deduced using the signals 3.

Although the beam made it into the PS right on schedule, teams were called on many occasions to conduct hardware interventions:

The CERN Control Centre (CCC) is back in business: people gather to restart the LHC injectors, today the PS.

fixing vacuum leaks, re-configure timing links, correcting magnet connections and, in one instance, replacing an entire magnet with a spare due to a water leak. "These types of hardware issues are typically found during hardware commissioning phase," says Steerenberg. "Any remaining issues are brought to light during the full operation of cold checkouts."

Thanks to the new-and-improved PS Complex Access Control and Safety System, the vast majority of these interventions could be carried out without affecting the upstream accelerator chain. "The PS tunnel also contains part of the Linac2 line leading to the PS Booster; this used to be problematic, as the Booster beam had to be shut off whenever access was needed in the PS," explains Steerenberg. "By dividing the PS tunnel into two access zones, around 75% of our interventions were carried out without any impact on the Booster. It was a simple solution, but one that gained the accelerator chain restart weeks of time."

With beams now in the machine, BE-OP has begun the beam commissioning tests. During this final phase, all of the beam diagnostics - from beam current to bunch spacing - have to be checked. These will be first verified with low intensity beams (some 10^{11} protons), then moving up to higher intensity levels (some 10^{12} protons) before 10 July. By that time, the PS must be ready to send beams to setup the downstream physics facilities in the East Area and nToF, where physics will start on 15 July.

The OP team would like to give a big thanks to all those involved in the LS1 work for the PS: "Their hard work has made it possible to have the accelerator working again after all the modifications made," concludes Steerenberg.

Katarina Anthony & Anaïs Schaeffer

Meanwhile, elsewhere...

At the LHC, the teams have closed the last of the W bellows (see photo). The leak tests on the entire machine are also proceeding nicely, as are the pressure tests, which have just been completed in Sector 5-6 and are currently under way in Sector 7-8.

Meanwhile, Sector 6-7 has reached a temperature of 20 K. The teams are now preparing to carry out the CSCM (Copper Stabilizer Continuity Measurement) tests.

In the SPS, the QDA magnet in Long Straight Section 1 (LSS1), which had had to be brought to the surface for repair, was re-installed a week ago. On 27 June, it will thus be possible to close access to the SPS ready for the start of equipment testing.

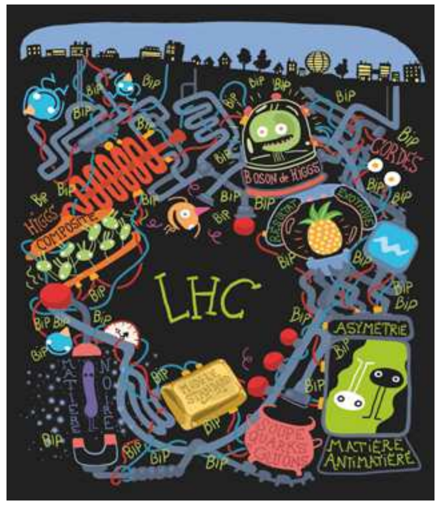
On 18 June, the SMACC Project teams celebrated the closing of the last W bellow (no1695).

PROFILE OF A SCIENCE COMIC STRIP AUTHOR

After studying visual arts, Lison Bernet worked as a lock keeper, waitress, grape picker, farm labourer and chef before finally returning to her first love: drawing. Today a scientific illustrator, Lison is the author of the cartoon strip *"La BD du LHC"*, which she draws every month for LHC France (by CNRS/IN2P3 and CEA/Irfu).

© Lison Bernet

Lison Bernet. (Photo : Patrick Dumas/CNRS).



© Lison Bernet.

Lison's career path might seem somewhat chaotic, but it is a reflection of the artist herself: original and passionate. "I never do anything by half measures. When I got into cooking for example [Lison took a chef training course for adults], I became completely wrapped up in it. I even went as far as cooking roasts during my lunch hour, just for practice…" says Lison. On completing the course, Lison got a job as a chef on a canal boat. And it was then that she got the drawing bug again. "I started keeping an illustrated travel diary," she says. "I used to sit and draw at the table between shifts."

In 2006 her career as an artist took off. Because her brother was working as a physicist in the CMS collaboration, Lison had the opportunity to visit CERN and found that it was fascinating and not at all as she had imagined: "The rather outlandish notion I'd had of physics quickly gave way to great curiosity, which I soon felt the need to satisfy through my drawings." In 2008, spurred on by the start-up of the LHC, Lison offered her services as an illustrator to LHC France, for which she has been working ever since, and La BD du LHC was born.

"Science, let alone particle physics, was not really one of my favourite subjects," explains Lison. "So I had to go back to basics and start again. I've learned a huge amount from the physicists, and I talk to them a lot. They are a big help to me, especially when starting a new comic strip; I always ask them to read my storyboard outlines before I start drawing." Working closely with them enables Lison to explain subtly and with humour concepts as complex as the birth of the Universe, matter-antimatter annihilation, quarks and gluons, the Higgs field, superconductivity, or even the process behind peer review or naming the famous boson.

To start with, Lison combined working as a chef with drawing, but she is now a full-time illustrator. "My job gives me access to the most fascinating places," says Lison enthusiastically. "At CERN I've been able to see the CMS, ALICE, LHCb and ATLAS experiments. And I was lucky enough to spend three days with the engineers working on the SMACC project, who were brilliant at explaining it all and were such nice people!"

This year, to mark CERN's 60th anniversary, CNRS and CEA will paint the portrait of 60 members of the French team working at the LHC, in an exhibition of photo and comic portaits including, of course, Lison Bernet. Discover these on LHC France on **lhc-France.fr** throughout the month of July.

To see Lison's work, take a look at her blog:
lisonbernet.illustrateur.org
or go to her online portfolio:
lisonbernet.ultra-book.com/book

Anaïs Schaeffer

THE 44TH SUCCESS OF THE CERN RELAY RACE

On Thursday 5 June, 590 people (8 Nordic walkers and 97 teams of 6 runners each) took part in the 44th CERN Relay Race.

The teams were divided into 8 different categories: mixed, mixed open, women, women open, men, men open, men veterans and Nordic Walk. The participants covered 3,900 metres around the Meyrin site, with the race's winners covering this distance in only 11 minutes and 4 seconds!

All the participants received a souvenir prize and the winners of each category took home a trophy. Additional prizes were given to the winners of the 1000 m challenge and Challenge Entreprise, and to the best CERN Users and Associates team, Department team and fancy dress team.

Everybody had a very good time, thanks to the excellent weather and the dynamic and friendly atmosphere created by the CERN Clubs! The Running Club would like to thank the Staff Association, the CERN Management and services, the event's sponsors and, especially, all the volunteers for their help organising this event. Every year it is one of the most important CERN team-building experiences!

The next event organised by the CERN Running Club will be the CERN Road Race this autumn, which will be announced in due course.

Anaïs Schaeffer

COMMISSAIRE MOULIN VISITS CERN

The French actor and film-maker Yves Rénier was shown around the Laboratory on Friday 6 June by friends at CERN.

A keen diver and star of the long-running French television police drama Commissaire Moulin, Yves Rénier took advantage of a stopover in Geneva on his way to the Red Sea to meet up with his friends from the CERN Diving Club, who were only too pleased to take him on a tour of the Laboratory.

In the morning, Yves Rénier visited the CERN Control Centre (CCC), Linac2 and LEIR. After lunch at the brasserie in Restaurant No. 2, the actor continued his tour with the CERN Computer Centre, the SM18 superconducting magnet test facility, and lastly the ATLAS experiment.

"Thank you so much for showing me around and introducing me to a world I knew so little about," confided Yves Rénier. "It's fascinating to see so many scientists of different cultures, nationalities and backgrounds working together on a joint project on such a vast scale!"

CERN Bulletin


Yves Rénier at LEIR. (Photo: Ludwig Pregernig)

NEW ARRIVALS

On Tuesday 10 June, recently-recruited staff members and fellows participated in a session in the framework of the Induction Programme.

HR Department

Behind the scenes of GS

THERE'S ONLY ONE WAY TO GO

At CERN, all of the Laboratory's imports and exports are routed in the same way: through the Logistics Service. This GS-IS Group service is responsible for receiving, inspecting and distributing all goods sent to the Organization.

Whether products for the CERN Stores, components for the experiments, tools, machinery and materials for the workshops or equipment for users and members of the personnel, nothing escapes the attention of CERN's Logistics Service, which every year processes nearly 70,000 incoming deliveries, 7,500 shipments and 160,000 distributed items.

"The vast majority of our imports come from CERN Member States," says imports and customs procedures manager Laurence Planque, "but we are receiving more and more goods for collaborators working at CERN from non-Member States such as China, India and Pakistan. All these imports are entitled to diplomatic exemption, so every day we have to manage the customs clearance procedures with the French and Swiss customs." On arrival, the goods are visually inspected, recorded and then distributed internally by the Logistics Service. "Sometimes the address on the delivery note does not give any name apart from 'CERN'," explains Meyrin export manager Stéphanie Krattinger. "Then we have to play Sherlock Holmes and go back along the logistics chain to find the recipient to ensure that users receive their deliveries as quickly as possible." "Sometimes that means opening packages to find the invoicing slip with the exact address," adds Loredana Zeni-Toberer, the import-export manager in Prévessin.

As far as mail is concerned, the Logistics Service receives tens of thousands of letters and small packages every year (260,000 in 2013!), 40,000 of which had to be opened last year so that they too could be forwarded to the right person.

When it comes to exports – equipment for loan, donation, repair, sale, etc. – the task is a little more onerous because everything from packaging to transport is CERN's responsibility. "We have to find the best solution for thousands of different kinds of goods," stresses chemicals import-export manager Claudia Bruggmann. "Gas bottles, chemicals, small components and equipment weighing several tonnes or even several tens of tonnes or measuring several metres across… Each shipment requires individual preparation."

And to ensure everything runs smoothly, the Logistics Services leaves nothing to chance: packaging, protection, labelling and official declarations, mode of transport, carrier, route taken, etc.: every stage of the shipment is tailored to the goods being shipped. "The most complicated export we've had to organise was the shipment of a magnet weighing nearly 1,000 tonnes to Japan in 2008 for the T2K (Tokai to Kamiokande) collaboration," says Logistics Service manager Patrick Muffat. "Five containers loaded with 150 spare parts were sent without incident by road and sea to the city of Tokai north of Tokyo." Proof if it were needed that CERN's Logistics Service is equal to any challenge.

Members of the CERN Logistics Service at the goods reception hall in Meyrin (Bulding 194).

We remind CERN personnel that it is not permitted to use CERN's import/export services to send goods, packages or letters for personal purposes.

Anaïs Schaeffer

Official news

MODIFICATIONS TO THE RULES OF THE CERN HEALTH INSURANCE SCHEME (CHIS) - EDITION 1 JANURAY 2012

Following recommendations made by the Internal Audit Service concerning, inter alia, the need to clarify the governance of the CHIS, modifications were approved by the Director-General following examination at the Standing Concertation Committee meeting on 10 April 2014.

The new rules will enter into force on 1 June 2014 and are available on the intranet site of the CHIS: **http://cern.ch/chis/doc/Rules2014F.pdf**

The new rules provide for the involvement of three entities in the governance of the CHIS: an Administrator, a Strategic Advisor and a joint body (the CHIS-Board) all appointed by the Director-General. The CHIS-Board will be composed of four members appointed by the Director-General, including the Administrator, and four members appointed by the Staff Association. The Strategic Advisor will preside over the CHIS-Board.

Department Head Office
HR Department

PROTECT CERN - RESPECT COPYRIGHTS

Are you a physicist who does complex mathematical calculations? Are you a webmaster who regularly embeds visual contents? Do you regularly present to large audiences? Are you an engineer who does sophisticated simulations of heat transfers, structural stability or electric circuits? Are you a technician who often uses CAD software? Do you like listening to music while being at CERN? Go ahead!

But make sure that you have legitimately obtained the software/images/music/videos you are using and hold valid licenses to run your software. Using illegal or pirated software/images/music/videos is not a trivial offense. It violates the CERN Computing Rules (OC5) and puts the Organization at risk!

Vendors deserve credit and compensation. So make sure to buy your software via legitimate channels and use a valid and honestly obtained license. This also applies to "shareware" and software under open licenses, which might also come with a cost. Usually, only "freeware" is completely free. Of course, software installed from the central CERN repositories (i.e. CMF for Windows PCs and SWrep for Linux) are 100% legal and come with appropriate licenses. Some engineering applications, however, have restricted usage. A list of centrally provided engineering applications is available from the IT department and the EN/ICE group. Ask your supervisor if you are not sure or contact the CERN Service Desk.

In addition, make sure that you have the proper rights when visual content, be they graphics, photos or videos. Whether you are a presenter, webmaster or editor, please ensure you hold the correct rights when using visual content and music in your presentations, webpages or publications… Check whether the imagery is published under a Creative Commons license (see, for example, Wikimedia or consider paying a royalty fee to a photo repository such as BigStockPhoto.com or iStockPhoto.com. It takes just an investment of a few francs to be on the safe side. If you are really keen on using a particular photo or graphic, contact its author/owner and ask for permission (and keep written proof!). And, of course, take your time to browse the CERN Document Server (CDS) for footage from CERN. If you don't find what you are looking for, why not roam around the CERN site, shoot the photo yourself and make it available on CDS?

If you are listening to music or watching films while at CERN, make sure that you have the proper rights to do so (and, of course, that you have the agreement of your supervisor). Note that these rights are personal and you usually do not have the right to share music or videos with third parties without violating copyright. Nowadays film companies are actively scanning for illegal downloads and sharing. So please keep CERN out of their crosshairs!

Quid pro quo. CERN also produces lots of software (and hardware!). We don't charge for this, as knowledge sharing and dissemination is in the spirit of the Organization. However, we hope you agree that CERN deserves credit if third parties use our products, and that we ensure that this usage remains within spirit of the Organization (e.g. that CERN ware is not used for dubious purposes). Therefore, all CERN software should be published under one of the recommended Open Source licenses, such as GNU GPL v3. CERN has initiated a similar scheme for hardware - the CERN Open Hardware Licence - in order to facilitate the exchange and reuse hardware design. There are also dedicated terms of use for CERN audiovisual media.

Check out our website for further information, answers to your questions and help, or e-mail **Computer.Security@cern.ch.**

If you want to learn more about computer security incidents and issues at CERN, just follow our **Monthly Report**.

Computer Security Team

UNEXPECTED TURN IN THE CONVERSATION?

Regular informal conversations with colleagues play a very important part in weaving the fabric of team spirit. They allow us to build the working relationships that are vital to the success of our projects and to create an environment of good will that is instrumental in averting potential conflict or crises. However, sometimes they can come with unexpected surprises…

Eric and his colleagues always meet on Monday mornings to have coffee together, before starting the working week. This is a very privileged moment for the team when there are no formal barriers or professional concerns: Mary may talk about a film that she saw at the weekend, Eric often goes hiking in the Jura with his friend Stefan, Hans has always got a story about his son's prowess on the school football team and occasionally there is a bit of special news such as Louisa's recent marriage, Pierre's baby's christening or Claude's daughter's graduation…

Last week was no exception to this habit, except that they met on Tuesday morning after the long Whitsun weekend, and, in the midst of all the usual conversation, Eric said he had some good news to share with them all:

"Stefan and I got engaged last weekend – we are moving into a flat together next week."

For a moment there was complete silence – it seemed as if nobody knew what to say – and then Mary congratulated Eric and the others hastily did the same. But the mood in the group seemed to have changed, and after a few more minutes of desultory conversation, when Eric left to return to his lab, the conversation went back to his unexpected announcement.

"Its not really so surprising, is it?" said Mary. "After all, he often talked about Stefan."

"But why do we need to know that he is gay?" asked Louisa. "That's his personal business after all."

"Yes," said Claude, "that is his private life – we should not mix private life with work" while Pierre nodded in agreement.

"But, wait a minute," said Hans. "Is Eric's news any different from what we usually talk about over coffee?"

There was silence as the group reflected on this question. It was true that they enjoyed sharing what they did at the weekends and talking about life in general – that was what helped them to get to know each other and to feel integrated into the team. But did that hold true for everyone in the team? Did everyone feel included and equally able to be open and accepted in the group?

Conversations with colleagues are indeed an important thread in the fabric that holds teams together. However, by the same token they can sometimes lead to situations where the majority share what they have in common, thereby excluding minority members, albeit unintentionally. Different languages, different cultures, different habits or preferences are just some of the ways in which we may feel left out or isolated and in the longer term this may lead to an inability to integrate and contribute fully to the team.

Yet these differences represent one of our core Organizational values and diversity is an integral part of our mission. While the CERN Diversity Office helps to drive our commitment to this through various activities aimed at promoting mutual respect and inclusiveness, it remains up to each one of us to make this a living reality.

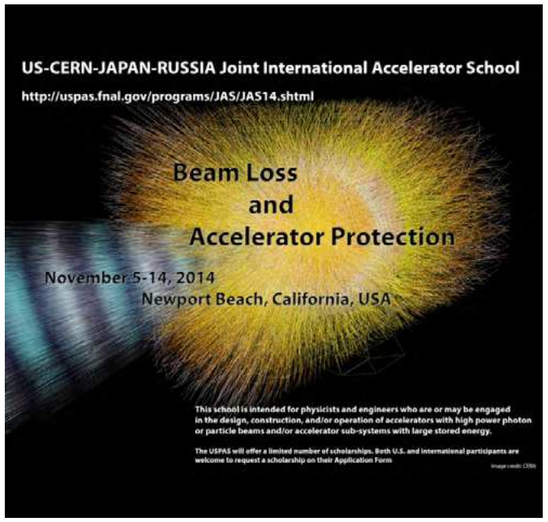
So the next time the conversation at the coffee table takes an unexpected turn, and one of our colleagues chooses to share something like this with us, let us welcome this as an example of our rich and diverse organizational identity.

"What we have to do... is to find a way to celebrate our diversity and debate our differences without fracturing our communities."

Hillary Rodham Clinton, former U.S. Secretary of State

Sudeshna Datta-Cockerill

2014 CERN ACCELERATOR SCHOOLS: BEAM LOSS AND ACCELERATOR PROTECTION



The US-CERN-JAPAN-RUSSIA Joint International Accelerator School is organising a course on Beam Loss and Accelerator Protection to be held in Newport Beach, California, USA from 5-14 November, 2014.

This school is intended for physicists and engineers who are or may be engaged in the design, construction, and/or operation of accelerators with high power photon or particle beams and/or accelerator sub-systems with large stored energy. Application deadlines are 15 August and 4 September.

Further information on this Joint School can be found at:

- **http://cas.web.cern.ch/cas/JAS/Newport%20Beach%202014/NPBadvert.html**
- **http://indico.cern.ch/event/287647/**
- **http://uspas.fnal.gov/programs/JAS/JAS14.shtml**

2014 CERN ACCELERATOR SCHOOLS: PLASMA WAKE ACCELERATION

A specialised school on Plasma Wake Acceleration will be held at CERN, Switzerland from 23-29 November, 2014.

This course will be of interest to staff and students in accelerator laboratories, university departments and companies working in or having an interest in the field of new acceleration techniques. Following introductory lectures on plasma and laser physics, the course will cover the different components of a plasma wake accelerator and plasma beam systems. An overview of the experimental studies, diagnostic tools and state of the art wake acceleration facilities, both present and planned, will complement the theoretical part. Topical seminars and a visit of CERN will complete the programme.

Further information can be found at:

- **http://cas.web.cern.ch/cas/PlasmaWake2014/CERN-advert**
- **html http://indico.cern.ch/event/285444/**

60 YEARS OF CERN AT UNESCO DON'T MISS THE WEBCAST! | 1 JULY

Don't miss the live webcast of the commemoration ceremony, marking the signature of the CERN Convention. The ceremony will be held at the UNESCO Headquarters in Paris on 1 July, from 10 a.m.

To watch the webcast, please visit:
http://webcast.web.cern.ch/webcast/
from 10 a.m.

PUBLIC LECTURE | MAKING THE MOST OF YOUR PRESENTATION | BY JEAN-LUC DOUMONT | 26 JUNE

Making the most of your presentation, by Dr. Jean-Luc Doumont *(Principiae).*

Thursday 26 June 2014 from 14:30 to 16:30
at CERN (4-3-006 - TH Conference Room)

Strong presentation skills are a key to success for engineers and scientists, yet many of these do not exploit their potential to reach the audience. Systematic as they can be in their work, they go at it intuitively, with much good will but with results that could be much better. In this talk, Dr. Doumont proposes a systematic way to prepare and deliver an oral presentation: he covers structure, slides, and delivery, as well as stage fright.

An engineer (Louvain) and PhD in applied physics (Stanford), Dr. Jean-Luc Doumont is acclaimed worldwide for his no-nonsense approach, his highly applicable, often life-changing recommendations on a wide range of topics, and Trees, maps, and theorems, his book about "effective communication for rational minds". He had his first research and development experience at CERN, as a Summer Student (1985) and as a Technical Student (1987).

Seminars

MONDAY JUNE 30, 2014

- **08:00** TH institutes **Resurgence and Transseries in Quantum, Gauge and String Theories** TH Conference Room
- **10:00** Summer Student Lecture Programme General **ROOT Tutorial (1/3)** Room Georges Charpak (Room F)

TUESDAY JULY 01, 2014

- **08:30** Induction Sessions **INDUCTION PROGRAMME - 1st Part** Salle 11
- **09:15** Summer Student Lecture Programme Introduction **"Welcome Presentation Introduction + CERN Computing Services and Security + Workshop Presentation + Library Service"** Main Auditorium
- **10:15** Summer Student Lecture Programme Course **Particle World (1/3)** Main Auditorium
- **11:00** LHC Seminar **Gamma measurements in Bs->DsK and other tree-level decays**
- **11:15** Summer Student Lecture Programme Course **Particle World (2/3)** Main Auditorium

WEDNESDAY JULY 02, 2014

- **09:15** Summer Student Lecture Programme Course **Particle World (3/3)** Main Auditorium
- **10:15** Summer Student Lecture Programme Course **Introduction to Accelerator Physics (1/5)** Main Auditorium
- **11:15** Summer Student Lecture Programme Course **Statistics (1/4)** Main Auditorium
- **14:00** TH Theoretical Seminar **Divergent series: from Thomas Bayes's bewilderment to today's resurgence via the rainbow** TH Conference Room

THURSDAY JULY 03, 2014

- **09:15** Summer Student Lecture Programme Course **Standard Model (1/5)** Main Auditorium
- **10:15** Summer Student Lecture Programme Course **Introduction to Accelerator Physics (2/5)** Main Auditorium
- **11:15** Summer Student Lecture Programme Course **Statistics (2/4)** Main Auditorium
- **14:00** A&T Seminar **Special ATS Seminar with CERN oral talks at IPAC'14** Filtration Plant

FRIDAY JULY 04, 2014

- **09:15** Summer Student Lecture Programme Course **Standard Model (2/5)** Main Auditorium
- **10:15** Summer Student Lecture Programme **Course Statistics (3/4)** Main Auditorium
- **11:00** Detector Seminar **Upgrade of the ALICE Inner Tracking System"** Salle Anderson
- **11:15** Summer Student Lecture Programme Course **Statistics (4/4)** Main Auditorium

SATURDAY JULY 05, 2014

- **09:30** APPEAL - University of Oxford **Accelerator and Particle Physics Education at A-Level APPEAL 5**

SUNDAY JULY 06, 2014

- **18:30** oPAC Schools **Advanced School on Accelerator Optimization**

MONDAY JULY 07, 2014

- **09:15** Summer Student Lecture Programme Course **Introduction to Accelerator Physics (3/5)** Main Auditorium
- **10:15** Summer Student Lecture Programme Course **Standard Model (3/5)** Main Auditorium
- **11:15** Summer Student Lecture Programme Course **Introduction to Accelerator Physics (4/5)** Main Auditorium

TUESDAY JULY 08, 2014

- **09:15** Summer Student Lecture Programme Course **Standard Model (4/5)** Main Auditorium
- **10:15** Summer Student Lecture Programme Course **Introduction to Accelerator Physics (5/5)** Main Auditorium
- **11:15** Summer Student Lecture Programme Course **Theoretical Concepts in Particle Physics (1/3)**