



## A NOBEL PRIZE FOR PARTICLE PHYSICS

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I don't know about you, but for me that hour between 11:45 and 12:45 on Tuesday seemed to take a very long time to pass. What was going on in that room in Stockholm we'll never know, but whatever it was, it produced a fantastic result for particle physics. There could be no more deserving laureates than François Englert and Peter Higgs, embodying as they do all the hallmarks of great scientists: brilliance, of course, but also humility and a sense of teamwork.



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Nobel Prize celebrations in Building 40.

I remember when they met each other at CERN for the first time on 4 July last year: the pleasure in that meeting was evident, and when Peter Higgs was asked for comment by the dozens of journalists who came to CERN that day, he politely declined, saying that this was a day for the experiments. Well, Peter, Tuesday was your day, and everyone at CERN shares the pride and joy that you and François must have felt, wherever you were! And like I'm sure you did, we all took time out to remember our departed colleague, Robert Brout, who would surely have shared in this prize had he still been with us.

Of course, the theory behind the Brout-Englert-Higgs mechanism is just a part of the story. Brilliant though it is, theory needs experiment, as the Nobel committee so eloquently said in acknowledging ATLAS, CMS, CERN and the LHC in the citation. Without the thousands of people working over decades to conceive, design and build ever more sophisticated tools to investigate the fundamental building blocks of nature, the committee could not have made such an award. Theory without experimental confirmation remains just theory, and an experiment without a theory to put to the

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test is no more than a collection of electronic components looking for a purpose. So wherever you are in the global particle physics community, you have contributed to this

prize, and you too can feel a sense of pride and joy in the achievement.

Rolf Heuer

## The Nobel in numbers

On Tuesday, only moments after the 2013 Physics Nobel Prize announcement, CERN tweeted:



This message was retweeted more than 1,000 times. Nearly 3,000 tweets that day included the #BosonNobel hashtag, reaching a potential audience of nearly 5 million Twitter users.

On the CERN Facebook account, the Nobel announcement was the most popular CERN Facebook post to date with more than 4,000 likes. It was shared almost 2,000 times, enabling more than 150,000 people to see the post. On Google+, the announcement was also the most popular CERN Google+ post to date, with more than 400 "+1s" and more than 150 shares.

On the CERN website, we received around 35,800 visitors compared to an average 19,000. On the day of the announcement, the CERN Press Office hosted 43 journalists from 22 media outlets (including 11 TV stations).

## CLOUD AND GRID: MORE CONNECTED THAT YOU MIGHT THINK?

**You may perceive the grid and the cloud to be two separate technologies: the grid as physical hardware and the cloud as virtual hardware simulated by running software. So how are the grid and the cloud being integrated at CERN?**

The LHC generates a large amount of data that needs to be stored, distributed and analysed. Grid technology is used for the mass physical data processing needed for the LHC supported by many data centres around the world as part of the Worldwide LHC Computing Grid. Beyond the technology itself, the Grid represents a collaboration of all these centres working towards a common goal.

Cloud technology uses virtualisation techniques, which allow one physical machine to represent many virtual machines. This technology is being used today to develop and deploy a range of IT services (such as [Service Now](#), a cloud hosted service), allowing for a great deal of operational flexibility. Such services are available at CERN through [Openstack](#).

"The physics community is looking at cloud solutions in order to be able to extend grid services across internal and external clouds,"

says David Foster, Deputy Head of IT at CERN. "Layering grid services, for example Batch, on top of a cloud infrastructure is increasingly popular."

So what does this really mean? Let's say you have a unit of work. The system goes and finds a machine on which to execute that work. This machine could be located anywhere in the world – the grid is a global collaboration of over 160 computer centres worldwide. That said, you can also allocate a virtual machine in the cloud and send an image that will include the work to be done there. In theory, you could have thousands of virtual machines in a cloud. You could treat them as though they were physical machines somewhere and send units of work as system images to them.

What has made the cloud model so successful is this ability to virtualise computational resources. This could be at the level of a virtual machine – so it looks like a real PC to

you – or at the level of a software application. "It gives the impression that you have more physical hardware than you actually have by creating these virtual instances of a software application or a hardware platform," says David.

It's this virtualisation technology that allows you to map software in a very flexible way onto a physical hardware infrastructure. "You can connect a set of cloud resources to the grid and use them as though they were physical machines," says David. This is extremely useful in managing physical resources and repurposing applications as required across different physical hardware platforms.

CERN's newest computing infrastructure extension is the data centre coming online in Budapest, which will almost double CERN's computing capacity. CERN is using cloud technologies to manage the [data centre's](#)

(Continued from page 1)



CERN Computer Centre.

[extension in Budapest](#) and the data centre in Meyrin so that they appear as one massive, agile infrastructure.

The CERN cloud currently comprises some 1,500 machines: the aim for 2015 is to have around 15,000 machines representing 300,000 virtual machines. With more machines being added to the cloud all the

time, 90% of the total computing resources of the two sites will be in the cloud!

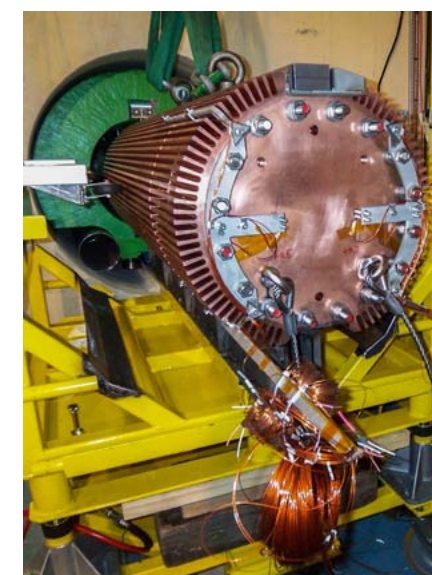
Like industry, CERN needs to embrace cloud-computing technologies in order to manage our increasing computational demands without extra operational burden. Grid and cloud activities will evolve together and complement each other. The integration

and development of these seemingly separate technologies is essential for the physics community and the evolution of the computing models of the experiments.

Stephanie McClellan

## LS1 REPORT: REPLACING AN ANTIQUE

**At the PS Booster, the old beam dump and the shielding blocks surrounding it have been removed. Installation of the new beam dump is now under way.**



The new PSB beam dump during its installation.

At the PS, replacement of the [old cooling and ventilation system](#), which dated back to 1957, is progressing well. The dismantling phase has just been completed and the tunnel is being prepared to receive a brand new ventilation system offering more efficient aeration of radioactive areas. At the same time, testing of the [newly installed access system](#) is under way.

At the SPS, all the equipment of the Long Straight Section 1 (LSS1) has been removed to make way for the campaign to replace the irradiated cables, which started this week.

In the LHC, the [Radiation to Electronics \(R2E\)](#) campaign is still progressing at a good clip, especially at Point 1, where the teams are two and a half months ahead of schedule.

The Superconducting Magnets and Circuits Consolidation ([SMACC](#)) project is going entirely to plan, with the outer sleeves (W) having been removed from the equivalent of seven sectors and leak tests already in progress in several sub-sectors. Two sub-sectors have passed and another five are on the point of being tested. The installation of the shunts has also been progressing well, with one third already in place.

Two of the DFBA electrical feedboxes have already been consolidated, but three faulty ones have been identified, with damaged gimbal bellows that will need to be replaced. One of these replacements is under way and the second will commence shortly. However, the third one, at LHC Point 6, is proving difficult to access and part of it will probably have to be brought up and worked on at the surface.

Nearly all the 1,344 [DN200 safety valves](#) designed to release the helium in the event of pressure build-ups in the accelerator have now been installed. This work should be completed by the end of October.

The X-ray testing campaign in the tunnel, aimed at detecting [faults in the machine's cryogenic distribution system](#), is ahead of schedule with 60% of the tests already completed.

Finally, 12 out of the 18 magnets replaced in the accelerator have already been reconnected.

CERN Bulletin

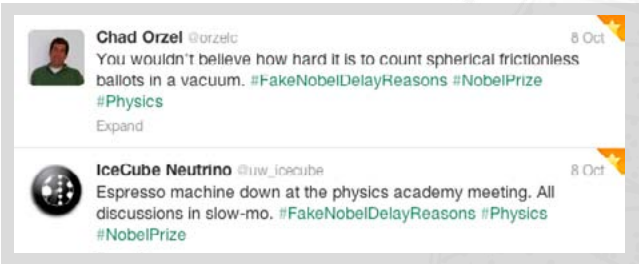
Watch the video showing the installation of the new PS Booster Dump:





# #FAKENOBELDELAYREASONS

Tuesday's hour-long delay of the Nobel Prize in Physics announcement was (and still is) quite the cause for speculation. But on the Twittersphere, it was simply the catalyst for some fantastic puns, so-bad-they're-good physics jokes and other shenanigans. Here are some of our favourite #FakeNobelDelayReasons.



# EUROPEAN NEUTRON RESEARCH PREPARES FOR FUTURE CHALLENGES

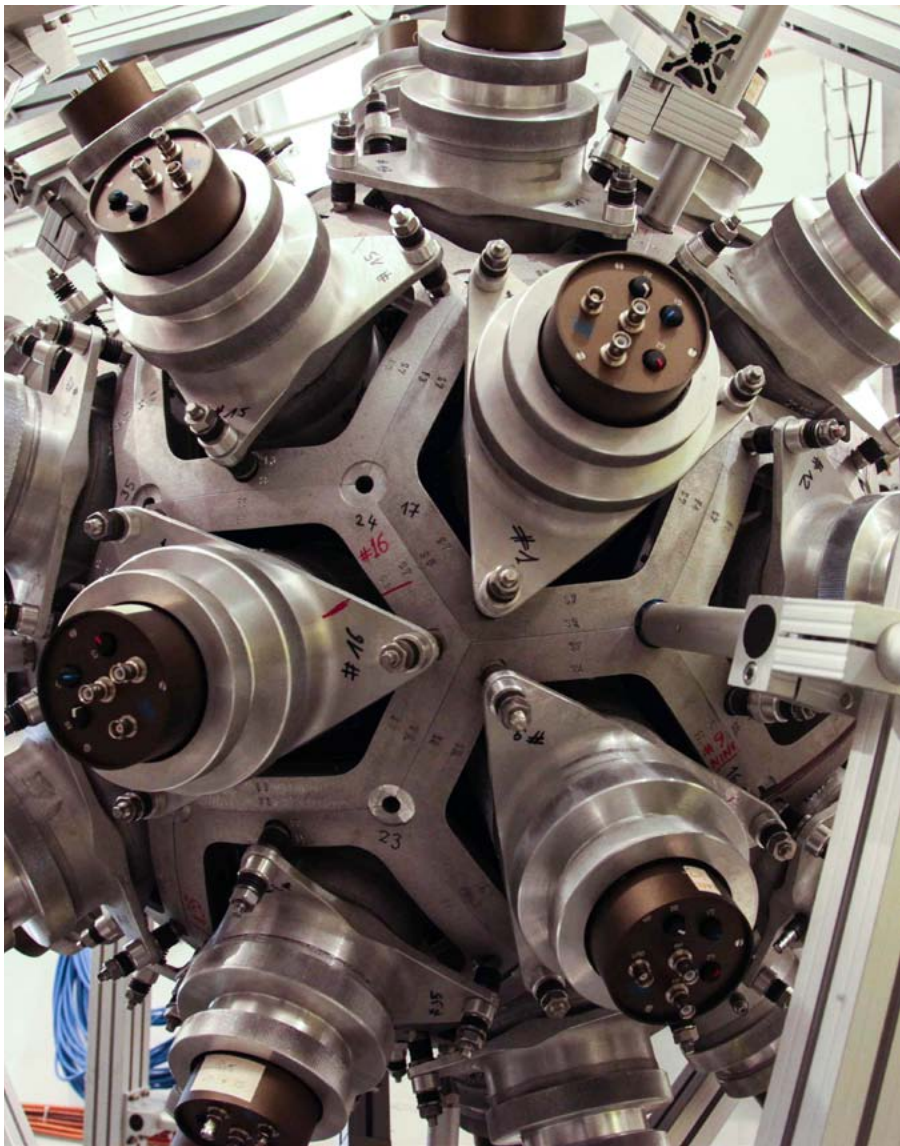
Neutrons are among the fundamental building blocks of matter. Some of the processes in which they are involved are responsible for energy generation in nuclear power plants. In this context, CERN's n\_TOF and other facilities participating in the ERINDA EU-funded programme help the community integrate all the scientific efforts needed to produce high-quality nuclear data for future nuclear technologies.

Accurate measurements of the interactions between neutrons and each of the elements present in nuclear reactors are vital tools enabling scientists to explore solutions – other than simple protected storage – for the treatment of radioactive waste deriving from a number of applications, ranging from energy production to the medical field. Particularly valuable is the contribution provided by the 13 accelerator-based neutron sources, which the ERINDA EU-funded programme has gathered together since 2011 in order to enhance collaboration among themselves and to facilitate transnational access for users. At the end of October, ERINDA will pass the baton to the CHANDA project, the continuation of the EU-funded projects aimed at producing high-quality nuclear data measurements in support of studies for waste transmutation and the reduction of waste in the next generation of nuclear reactors.

"ERINDA, and in the near future CHANDA, provides a common platform for participating institutes to share facility management for the benefit of the research community and the various stakeholders," says Enrico Chiaveri, spokesperson of the n\_TOF Collaboration, CERN's flagship in the field of neutron and nuclear physics. "In particular, thanks to the transnational access to all the participating facilities, these programmes allow us to meet requests coming from all scientific and industrial partners. They also allow the community to share capabilities and expertise, and this results in better quality data."

Accurate measurements of the processes in which neutrons interact with heavy nuclei (such as uranium and minor actinides) are at the root of our understanding of the production, reduction and possible treatment of radioactive waste. "At a recent ERINDA workshop held at CERN, participants presented their latest results on a number of specific reactions with unprecedented accuracy," says Enrico Chiaveri.

In order to improve further our knowledge of the interactions of neutrons with



The 4π calorimeter inside the n\_TOF experimental area. Image courtesy of the n\_TOF Collaboration.

matter, the community is looking forward to inaugurating CERN's new facility, n\_TOF EAR2. "Once in operation, n\_TOF EAR2 will be a state-of-the-art world facility open to the international community," confirms Enrico Chiaveri. "Construction work is well advanced and we hope to start running next year. The increased neutron flux with respect to currently available neutron beams will allow

challenging measurements that will surely contribute to improving our knowledge of a number of basic neutron-induced processes of interest to nuclear technology, astrophysics and nuclear medicine."

Antonella Del Rosso



# READY, STEADY... CODE!

This summer, CERN took part in the *Google Summer of Code* programme for the third year in succession. Open to students from all over the world, this programme leads to very successful collaborations for open source software projects.

*Google Summer of Code* (GSoC) is a global programme that offers student developers grants to write code for open-source software projects. Since its creation in 2005, the programme has brought together some 6,000 students from over 100 countries worldwide. The students selected by Google are paired with a mentor from one of the participating projects, which can be led by institutes, organisations, companies, etc.

This year, CERN PH Department's SFT (Software Development for Experiments) Group took part in the GSoC programme for the third time, submitting 15 open-source projects. "Once published on the *Google Summer of Code* website (in April), the projects are open to applications," says Jakob Blomer, one of the organisers for CERN. "This year, more than 80 students contacted us from all over the world expressing their interest in our projects."

After discussing with potential mentors, the students make a proposal. Next, Google determines the number of student slots for each organisation. SFT organisers and mentors select the best proposals, and Google formally enrolls the students. The grant offered by the GSoC programme is worth 5,000 US dollars to each student for 3 months' work.



Image: GSoC 2013.

"The student developers work full time for the project over the summer, from the beginning of July to the end of September," adds Jakob. "They don't need to come to CERN physically as they can easily interact with their mentor via e-mail or Skype." This year, eight students were selected for CERN's projects.

"This programme allows students who already have experience to take part in CERN projects without formally entering the CERN Summer Student Programme," explains John Apostolakis, another organiser on CERN's side. "Many students are brilliant, with experience that they apply immediately to make an impact in a project within a very short time."

A range of topics were tackled by the GSoC students in 2013, from improving *Cling* (the interpreter for the upcoming version 6 of *ROOT*) and refining *perf* (the performance monitor tool of Linux) to creating a prototype CERN app on Android and developing an improved text editor for Indico capable of handling mathematical formulae.

One student, Violeta Ilieva (see box) created a prototype auto-differentiator for *Cling*. With this new capability, it will be possible to

differentiate many functions automatically from their source code. The result is a new function in code that provides an exact answer. This can be evaluated by fewer computations, replacing the numerical approximations that are used in most current analyses.

Anais Schaeffer

## A student's perspective

Violeta Ilieva (22) is Bulgarian and currently majoring in Computer Science at Princeton University, and is pursuing certificate programmes in Finance and in Robotics and Intelligent Systems.

In 2012, she took part in the Google Summer of Code programme. "I was given a wonderful opportunity to extend the functionality of the *MIT App Inventor* – a platform that provides non-programmers with an intuitive interface to develop their own Android mobile applications," says Violeta.

This year, she took part in the GSoC programme by creating a *Cling* prototype auto-differentiator for CERN. She describes her CERN mentor, Vassil Vassilev, as giving "guidance, advice and encouragement that proved invaluable for finishing the project. I am very grateful for the chance I was given. I learnt a lot this summer and can't wait to apply the new knowledge and practical skills in my studies and, hopefully, in my career."

In August, Violeta visited CERN. "I was excited to find out more about the place itself, projects in progress and plans for the future," she explains. "Furthermore, I was able to visit some of the experiments, like ATLAS, which has been a dream of mine since high school."



## Ombuds' Corner

### A MANAGER'S CHALLENGE

**Achieving two goals at once is a real challenge in personnel management: on the one hand, a manager must reach the results expected by the institution with the available workforce; and on the other hand, the manager must take care of their collaborators' well-being. Pursuing these dual aims calls for a real potential towards leadership. Why should a line manager care about the well-being of his/her supervisees? Is it not sufficient and satisfactory that the deliverables for which he/she is accountable come in time and within the budget?**

The ethical challenge of managing the interests of the employer and of the employees cannot be left solely in the hands of HR, but requires all parties to contribute to a satisfactory compromise. Let us consider these dimensions with two examples:

- Luke is responsible for an important installation. He is stressed as he feels that there is barely enough time for all the work to be completed. He worries that his team may relax and so he starts pushing his supervisees to the limit. He has a hard time accepting a plan, which makes him feel that he will perhaps not be successful. Some of his requests are considered unrealistic; people begin to doubt his ability to withstand the pressure. Efficiency decreases and the situation grows conflicting.

- Stan believes he is a great leader as he often defends his supervisees. For him, the well

being of his people takes precedence over goals. They work together in harmony but, as a consequence, results can be late. What then happens is that his collaborators feel that their own objectives have not been fulfilled and so they fear they will not receive wide recognition of their work. Such a situation also contains the seeds of a conflict: the workers develop doubts about their manager.

Of course a good leader will face both challenges at the same time: empowering his/her team so they can make it. Sometimes managers may feel alone when facing such challenges. A confidential discussion where they can express their problems in full confidence and without any risk of judgement may help. The Ombuds is here to provide an ear to these managers in such times.

### Conclusion :

The Ombuds' mission is to provide help to everyone; this, of course, includes managers. So, to managers, supervisors and leaders: do not hesitate in coming for a chat with the Ombuds. He will not tell you what to do, but in the confidential discussion you can be reassured that someone understands your challenge. You can then restart in a more confident and thus effective way.

As a reminder, all previous Ombuds corners can be accessed in the Ombuds blog: [ombuds.web.cern.ch](http://ombuds.web.cern.ch)

Vincent Vuillemin



## Official news

### Reminder: extension/suppression of allowance for dependent children aged 20 to 25

Members of the personnel with dependent children aged 20 to 25 (or reaching 20 during the 2013/2014 school year), for whom an allowance for dependent children is currently paid, are invited to provide the Education Fees service with a **SCHOOL CERTIFICATE**.

Unless we receive, by **October 31, 2013 at the latest**, a school certificate or similar written proof (contract of work placement, sandwich course or apprenticeship) covering your child / children for the school year 2013/2014, we will be obliged to stop payment of the allowance for dependent children as well as affiliation to the health insurance at the appropriate date and retroactively if necessary.

Education fees service  
HR/CB-B  
Mailbox C20000  
[schoolfees.service@cern.ch](mailto:schoolfees.service@cern.ch)  
Tel.: 72862 / 71421



# Computer Security

## BYOD : « BRING YOUR OWN DISASTER »

Have you ever heard of “BYOD”? No, it is not a pop band. Try again. It is short for “Bring Your Own Device” (the French use “AVEC” - “Apporter Votre Equipement personnel de Communication”) and describes an option long since offered at CERN: the possibility to bring along your personal laptop, smartphone or PDA, use it on CERN premises and connect it to the CERN office network. But hold on. As practical as it is, there is also a dark side.

The primary advantage, of course, is having a digital work environment tuned to your needs and preferences. It allows you to continue working at home. Similarly, you always have your music, address books and bookmarks with you. However, as valuable as this is, it is also a responsibility. Laptop theft is happening - outside CERN but also on site. In France, 30% of stolen laptops were stolen out of cars or homes, and 10% during travel. At CERN, on average one laptop per month is reported stolen to the Computer Security Team. This can become a fully-fledged disaster: with the loss of your laptop, your music is gone, your photos, videos, doctoral thesis... but probably also your private documents, e-mails, bank statements (in your browser's cache) and stored passwords (e.g. for your wireless access point at home). Worse still, depending on what your role at CERN is, sensitive Organization data might be lost too: contracts, preliminary physics results, MARS assessments, legal proceedings, medical files, job applications, etc.

Only 15% of the aforementioned stolen laptops were encrypted. What about yours? Protect your life and avoid thieves putting your photos onto the Internet(\*)! Also protect sensitive Organization data. Use the built-in “Bitlocker” and “FileVault” features on Windows PCs and Apple Macs respectively in order to encrypt your hard disk. For Linux, many software solutions like “Truecrypt” can

provide the means to protect your local data. However, take care with the corresponding password: once lost your encrypted data is also lost. Also note that there is currently no centrally supported solution for CERN. In addition, regularly back-up so that you don't lose your “life” if your laptop disappears. Synchronise your professional laptop with CERN DFS or AFS, back-up your private laptop or Android device to an external USB disk, and use Time Capsule for Macs or iTunes for iOS devices. Finally, if your CERN laptop is stolen, file a report with the CERN Fire Brigade.

As for smartphones... On average, one mobile phone is stolen every 30 seconds in France. You might be able to perform a **remote wipe** to remove the contents, but if the thief removes the SIM card quickly enough, you're screwed. Standard 4-digit PIN numbers can be cracked within minutes - you had better choose more digits. And no, there is no really good encryption software to protect your contents. In short, you had best keep both eyes on your smartphone all time.

*\* This reminds me of a case of a young woman whose photos - taken by her boyfriend with her smartphone - were posted on a popular porn site by the thieves who stole her phone (recall our Bulletin article: [Smartphone lost --- privacy gone](#)).*

Computer Security Team



## Take note

### VACCINATION AGAINST SEASONAL INFLUENZA: A REMINDER

At this time every year the Medical Service suggests that you should get vaccinated against seasonal flu.

We would like to remind you that vaccination is the best method of protecting yourself and others against this contagious illness which can have serious consequences for certain people, especially those suffering from chronic medical conditions (e.g. chronic pulmonary, cardiovascular or kidney disease or diabetes), pregnant women, people suffering from obesity (BMI>30) and those over 65.

As the Medical Service does not supply the vaccine, you must purchase it from a pharmacy (without the need for a prescription in France). From the beginning of October you can then bring your vaccine to the Infirmary (Building 57-Ground floor) and get vaccinated without an appointment between 9 a.m. - 12 p.m. and 2 p.m. - 4:30 p.m.

For the purposes of health insurance reimbursement, you can get a prescription from the Medical Service either on the day of the injection or beforehand.

**Reminder:** The Medical Service **cannot provide** this vaccination service for family members or retired members of the personnel.

Medical Service

### NEW SERVICE STATUS BOARD

On Monday 14 October, the Service Status Board for GS and IT will change. The new Status Board will be integrated with the CERN Service Portal and with the CERN Service Catalogue.

As of today, the SSB will display “Service Incidents”, “Planned Interventions” and “Service Changes”.

References valid from 14 October:

- CERN SSB at <https://cern.ch/ssb>
- Computing SSB (previously IT SSB) at <https://cern.ch/itssb>

### REGISTER NOW FOR ISOTDAQ 2014

CERN is inviting final-year undergraduates, masters and PhD students studying physics, computer science and engineering to take part in the 5th International School of Trigger and Data Acquisition (ISOTDAQ2014).

The course comprises of a series of lectures and practical sessions at the **Wigner Research Centre for Physics** in Budapest, Hungary from 28 January to 5 February 2014. The school will cover topics from trigger electronics to data acquisition software, network architecture and more.

The aim is to provide an overview of the basic instruments and methods used in high-energy physics, spanning from small experiments in lab to very large experiments at the Large Hadron Collider (LHC). The concepts taught also apply to fields outside high-energy physics, such as data acquisition in astrophysics.

The Wigner Centre recently became a major extension of CERN's computing facilities, hosting an extension of Tier 0 activities of the Worldwide LHC Computing Grid.

Please note that though the lectures and labs are completely financed by supporting institutions, a €450 fee is required from the students to cover accommodation, lunches, coffee and social dinners.

**Applications are accepted until 1 November.**

Markus Joos, on behalf of the organizers

### DIVERSITY IN ACTION | INTERACTIVE WORKSHOP | 2ND EDITION | 22 OCTOBER

The CERN Diversity Programme has designed an interactive workshop to creatively explore the meaning of diversity. Come, take part, and share your experience of working with differences at CERN.

Tuesday 22 October 2013 – 1.30 p.m. - 5.30 p.m.  
Pump Hall - Building 216-R-401

“Diversity in Action” is an interactive half-day workshop designed to creatively explore the meaning and importance of diversity at CERN, in support of the Organization's

value of “appreciating differences, fostering equality and promoting collaboration”. Using participative multi-media methods, this innovative workshop will provide participants with insights into diversity, help them to develop greater sensitivity to differences, explore ways to recognise and overcome biases and thereby strengthen our tradition of inclusiveness at CERN.

Virginia Humud Guerrero is a seasoned professional and HR expert who has spent a considerable part of her career in UN agencies worldwide. She has been chief of HR and has been responsible for initiating and implementing a wide range of organizational development initiatives with specific concern for cultural and gender diversity.

Virginia is a certified coach with focus on difficult interpersonal relations. She holds a facilitation certification in the Institute for Cultural Affairs in Techniques of Participation. She obtained a Bachelors Degree at the University of Chile, followed by Post Graduate Studies in Management, Brighton Polytechnic, England and Diploma in Human Resources, IESA, Venezuela.

Virginia speaks Spanish, English and French and has specific strengths and sensitivity to multi-cultural and multi-stakeholder work environments.

**Everyone working on the CERN site is welcome!**

*This session will be run in French.*

*There are a limited number of places available so please sign up here as soon as possible.*

### UNIVERSITÉ DE GENÈVE | SÉMINAIRE DE PHYSIQUE CORPUSCULAIRE | 30 OCTOBRE

Heavy Ions in Therapy and Space, Dr Marco Durante, Universität Darmstadt.

**Mercredi 30 octobre 2013, 11h15**  
**Science III, Auditoire 1S081**  
**Boulevard d'Yvoy, 1211 Genève 4**

**Abstract:** Research in the field of biological effects of energetic charged particles is rapidly increasing. It is needed for both radiotherapy and protection from the exposure to galactic cosmic radiation in long-term manned space missions. Although the

exposure conditions are different in therapy and space (e.g. low- vs. high-dose rate; total- vs. partial-body exposure), a substantial overlap exists in several research topics, such as: individual radiosensitivity, mixed radiation fields, normal tissue degenerative effects, biomarkers of risk, radioprotectors, non-targeted effects. Late effects of heavy ions are arguably the main health risk for human space exploration, and with the increasing number of cancer patients (including young adults and children) treated by protons and carbon ions, this issue is now becoming extremely

important in particle therapy as well.

Reducing uncertainty in both cancer and non-cancer late risk estimates is therefore the first priority in heavy-ion radiobiology: it is necessary for a safe use of ion therapy in radiation oncology and for planning exploratory missions, especially the Mars exploration. In addition, researchers involved either in experimental studies on space radiation protection or particle therapy often use the same high-energy accelerator facilities. Several particle therapy facilities

are now operating, under construction or planned in Europe, USA, and Asia. It is foreseeable that the availability of beamtime and the presence of many dedicated research programs will lead to great improvements in our knowledge of biological effects of heavy ions in the coming few years.

Organisé par le Prof. [Teresa.Montaruli@unige.ch](mailto:Teresa.Montaruli@unige.ch)  
et le Prof. [Giuseppe.Iacobucci@unige.ch](mailto:Giuseppe.Iacobucci@unige.ch).

## Training & Development

### SAFETY TRAINING: PLACES AVAILABLE IN OCTOBER 2013

There are places available in the forthcoming Safety courses. For updates and registrations, please refer to the Safety Training Catalogue.

#### October 2013 (alphabetical order)

**Habilitation ATEX niveau 1 (ATEX habilitation level 1)**  
08-OCT-13, 9.00 – 17.30, in French

**Conduite de plates-formes élévatrices mobiles de personnel (PEMP) (Driving cherry-pickers)**  
21-OCT-13 to 22-OCT-13, 08.30 – 17.30, in French with handouts in English

**Ergonomics - Applying ergonomic principles in the workplace**  
03-OCT-13, 9.00 – 12.00, in English

**Être TSO au CERN (Being a TSO at CERN)**  
29-OCT-13 to 31-OCT-13, 9.00 – 17.30, in French

**Self-Rescue Mask Training**  
01-OCT-13, 10.30 – 12.30, in French  
03-OCT-13, 10.30 – 12.30, in English  
04-OCT-13, 8.30 – 10.30, in English  
08-OCT-13, 10.30 – 12.30, in French  
09-OCT-13, 10.30 – 12.30, in English  
15-OCT-13, 10.30 – 12.30, in French  
17-OCT-13, 10.30 – 12.30, in English  
22-OCT-13, 10.30 – 12.30, in French  
24-OCT-13, 10.30 – 12.30, in English  
29-OCT-13, 10.30 – 12.30, in French  
31-OCT-13, 10.30 – 12.30, in English

**Electrical habilitation for electricians in low voltage**  
09-OCT-13 to 11-OCT-13, 9.00 – 17.30, in English  
21-OCT-13 to 23-OCT-13, 9.00 – 17.30, in French  
30-OCT-13 to 01-NOV-13, 9.00 – 17.30, in English

**Electrical habilitation for electricians in low and high voltage**  
07-OCT-13 to 10-OCT-13, 9.00 – 17.30, in French  
14-OCT-13 to 17-OCT-13, 9.00 – 17.30, in English

**Electrical habilitation for non electricians**  
07-OCT-13 to 08-OCT-13, 9.00 – 17.30, in English  
24-OCT-13 to 25-OCT-13, 9.00 – 17.30, in French  
28-OCT-13 to 29-OCT-13, 9.00 – 17.30, in English

**Use of fire extinguisher – live exercises**  
02-OCT-13, 10.30 – 12.30, in English  
04-OCT-13, 10.30 – 12.30, in French  
09-OCT-13, 14.00 – 16.00, in English  
16-OCT-13, 10.30 – 12.30, in English  
18-OCT-13, 10.30 – 12.30, in French  
23-OCT-13, 10.30 – 12.30, in English  
25-OCT-13, 10.30 – 12.30, in French  
30-OCT-13, 10.30 – 12.30, in English

**Crane driving**  
07-OCT-13 to 08-OCT-13, 08.30 – 17.30, in French with handouts in English

**Refresher course for forklift driving**  
23-OCT-13, 08.30 – 17.30, in French with handouts in English

**Refresher course Self-Rescue Mask Training**  
07-OCT-13, 08.30 – 10.30, in French  
07-OCT-13, 14.00 – 15.00, in English  
14-OCT-13, 08.30 – 10.30, in French  
14-OCT-13, 10.30 – 12.00, in English  
21-OCT-13, 08.30 – 10.30, in French  
21-OCT-13, 10.30 – 12.00, in English  
28-OCT-13, 08.30 – 10.30, in French  
28-OCT-13, 10.30 – 12.00, in English

**Refresher course for electrical habilitation for electricians in low and high voltage**  
30-OCT-13 au 31-OCT-13, 9h00 – 17h30, in French

**Awareness for gestures and postures at work**  
25-OCT-13, 09.00 – 17.30, in French

**Safety in cryogenics - level 1**  
01-OCT-13, 9.00 – 12.00, in English

**Safety in cryogenics - level 2**  
15-OCT-13, 9.00 – 17.30, in English

**Radiological Protection - Controlled Radiation Area - Course A for CERN employees and CERN associates**  
16-OCT-13, 08.30 – 17.00, in French  
22-OCT-13, 08.30 – 17.00, in English  
23-OCT-13, 08.30 – 17.00, in English  
30-OCT-13, 08.30 – 17.00, in English  
31-OCT-13, 08.30 – 17.00, in English

**Working at heights - Using a harness to prevent falling from a height**  
03-OCT-13, 9.00 – 17.30, in French  
17-OCT-13, 9.00 – 17.30, in English

Isabelle Cusato, HSE Unit

## Seminars

### MONDAY OCTOBER 21, 2013

- **07:00** European School of Medical Physics (ESMP) **ESMP - 2013**

### TUESDAY OCTOBER 22, 2013

- **11:00** EP Seminar **New results from T2K** Council Chamber

### WEDNESDAY OCTOBER 23, 2013

- **14:00** TH Theoretical Seminar **The Effective Field Theory approach to the early & late Universe** TH Conference Room

### THURSDAY OCTOBER 24, 2013

- **11:00** Collider Cross Talk **Energy-loss Monte Carlos in Heavy-Ion Collisions and JEWEL** TH common room

### FRIDAY OCTOBER 25, 2013

- **14:00** TH String Theory Seminar **TBA** TH Conference Room

### TUESDAY OCTOBER 29, 2013

- **11:00** EP Seminar **Matter-Antimatter Differences using Muons: D0 Result on anomalous Dimuon Charge Asymmetry using Full Tevatron Data Set** Council Chamber
- **14:00** TH String Theory Seminar **TBA** TH Conference Room

### WEDNESDAY OCTOBER 30, 2013

- **11:00** TH Cosmo Coffee **EPFL/CERN/ UNIGE Discussion Sessions**
- **14:00** TH Theoretical Seminar **Cosmological perturbations beyond linear order** TH Conference Room