

THE GLOBE IS BACK!

The Globe of Science and Innovation reopened its doors to the public on Tuesday, 19 April 2016, after almost a year of extensive renovations.



The Globe is a symbol of sustainable architecture. It is built from a variety of trees from Swiss forests that absorb more carbon in their lives than they release, meaning the building acts as a carbon sink. (Image: Sophia Bennett/ CERN)

It took eleven months of civil-engineering work to restore one of the best-known symbols of CERN, the Globe of Science and Innovation (or the Globe for short).

An inauguration ceremony was held on 18 April 2016, attended by representatives of the Swiss Confederation, the local authorities, the media and CERN management.

"The Globe has become an essential tool for CERN and a part of the landscape of international Geneva. It is a point of reference for CERN's neighbours," said Charlotte Warakaulle, CERN Director for International Relations, in her speech during the ceremony.

The ambitious renovation project was needed to replace the arcs that form the outer spherical structure of the Globe, and to renovate the exterior ramps and sun baffles.

Frédéric Magnin, head of Civil Engineering and Buildings (CEB) is very pleased with how the works have gone: "The wooden structure of the Globe makes it a unique type of building," he explains. "It is also intended to be a symbol of sustainable development, according to its original design scope – to house the Swiss national "Expo 2002" exhibition in Neuchâtel." "Renovating the building, respecting its uniqueness while honouring its sustainability has been the most challenging part of the project," he continues.

At the start of the renovation project, several modifications to the initial plan were necessary. For example, some of the sun baffles were found to be in a poorer condition than anticipated. The project team, in close collaboration with the architects from Groupe H and the design office Charpente Concept, which supervised

In this issue

NEWS

The Globe is back!	1
LHC Report: machine commissioning - drawing to a close	3
Preparing for the future	4
Computer Security	5
Andrey Loginov (1977 – 2016)	5
Official news	6
Take note	7
Seminars	9

(Continued on page 2)



THE GLOBE IS BACK!

(Continued from page 1)

the renovation, made the decision to replace one third of them.

"We also had to modify the design of the external ramps, but we ended up with something that's both easier to maintain and more sustainable than we had foreseen in the

initial plan, while also keeping the budget fully under control," Magnin happily notes.

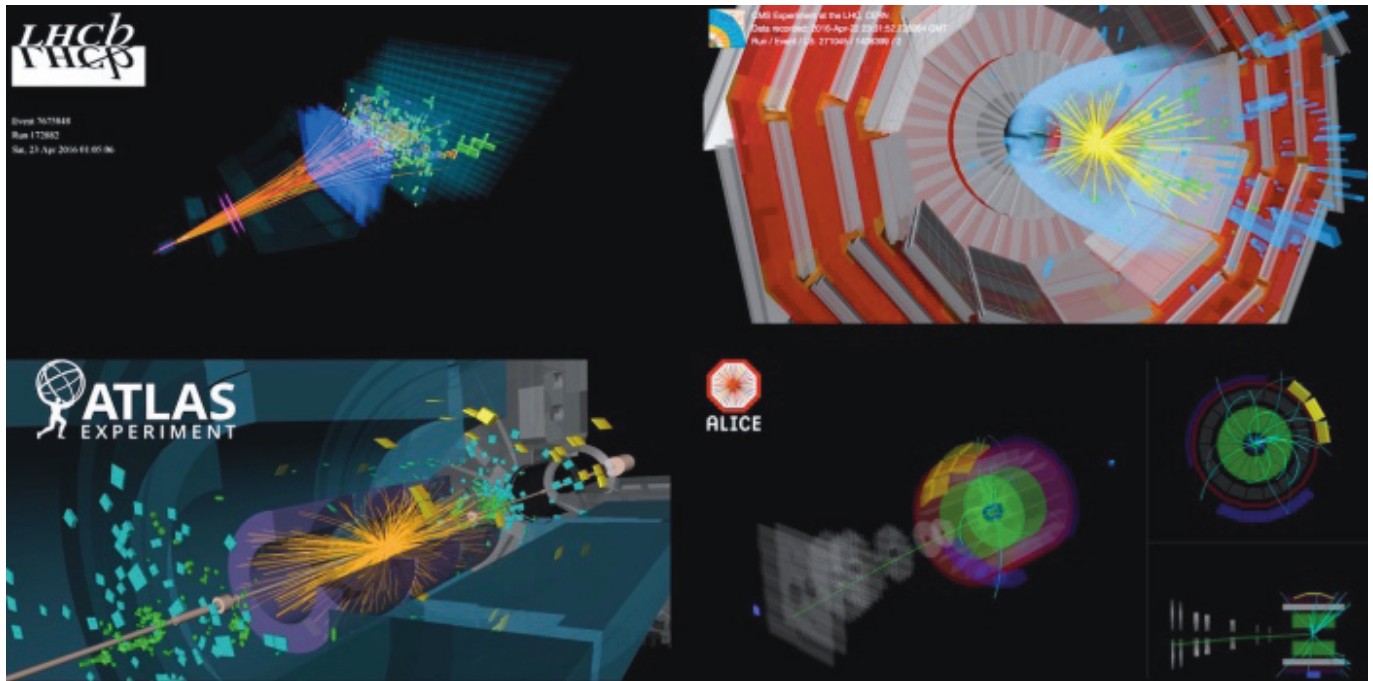
The Globe is open to the public from Monday to Saturday (except during official CERN closures),

from 10 a.m. to 5 p.m. The programme of lectures and events for the general public will restart at the end of April. For more information, see here: <http://visits.web.cern.ch/globe>.

Stefania Pandolfi

LHC REPORT: MACHINE COMMISSIONING - DRAWING TO A CLOSE

The recommissioning of the LHC is going well: the machine has delivered first pilot Stable Beams collisions.



Some of the first collisions recorded by the experiments during the LHC 2016 commissioning with low-intensity stable beams. (Image: CERN)

TOTEM bump

The main goal of the past couple of weeks was to advance with the preparation of collimators settings and protection devices. Over the weekend of 16-17 April, collisions were re-established after setting up a new orbit bump around the Roman Pot locations in IP5 (TOTEM), in order to improve their acceptance. The bump was smoothly incorporated into the machine settings that lead into Stable Beams. The LHC orbit was corrected towards the reference leaving the machine ready for the next steps: aperture measurements and final collimator alignment.

Alignment and aperture at 40 cm

The aperture is the available space in the transverse plane of the machine. Detailed simulations are used to predict the minimum machine aperture. At 40 cm β^* , the bottlenecks (the locations in the machine with the smallest aperture) are the triplet magnets either side of the experiments. In order to protect these magnets, the tertiary collimators have to be set up to shadow the triplets and catch and absorb beam losses that would otherwise end up in the magnets. A very precise measurement of the aperture was performed at the end of squeeze and in collisions. About 10 σ is the smallest measured aperture in the machine (here σ is the transverse beam size). This allows for the predicted setup of the tertiary collimators at 9 σ .

Roman Pot alignment and TCT/TCL alignment

The final steps to prepare the machine for collisions are the alignment of the tertiary collimators (TCT) and physics debris collimators (TCL) located near the collision points. For the TCL the alignment is done by moving the collimator in steps of 5 μm towards the beam until both collimator jaws touch the beam halo. This gives a very precise measurement of the beam centre but is a lengthy process. In order to speed the collimator alignment, each tertiary collimator was equipped during LS1 with 4 beam position monitors embedded in the collimator jaws. The alignment for these collimators (16 collimators in total) now takes less than one minute with the additional advantage that the collimator is aligned without touching the beam halo. The alignment of the collimator system was successfully completed and was followed by the alignment of the Roman Pot detectors: TOTEM in IR5 and AFP in IR1.

Impedance and e-cloud

In order to prepare the machine for high beam intensity, the machine impedance needs also to be evaluated, in particular, the contribution from the collimators. This is measured by observing the tune shift while changing the collimator gaps. This was done this week for the main injection protection collimator, which is known as the TDI - a 4 m long graphite collimator that protects the machine in case of

an injection failure. The contribution from the ring collimators will be measured during the coming days. Other equipment also needs to be prepared for high intensities; here the transverse damper system is a key player.

A tune scan at injection with 3 nominal bunches circulating in the machine was also performed in order to find the optimal working point for the tunes compatible with machine conditions during the upcoming scrubbing run. This run is aimed at reduction of the electron cloud. The transfer lines between SPS and LHC were successfully set up with nominal bunches. This exercise includes trajectory and collimators, and is now followed by setup and checks with bunch trains of 12 and 72 bunches.

Machine protection

A full campaign of machine protection validation is currently on-going in order to establish the first Stable Beam collisions and allow for higher intensities. Before the declaration of Stable Beams and the ramp-up of beam intensity, the full LHC cycle must be qualified. This is done by analyzing the expected beam loss distributions in the LHC ring in case of a failure scenario at every cycle step: injection, ramp, flat top, squeezed beams and collisions. Reference loss maps are established and thoroughly analyzed. This is done by inducing in an extremely controlled way beam losses with very little intensity in

the machine (less than 3×10^{11} protons per beam). The main beam loss locations are evaluated and maximum loss scaled to the final intensities to verify that it is well below the magnets' quench limits.

Exciting moments in the next days, the machine is almost ready to start 2016's physics programme.

Belen Salvachua Ferrando for the LHC team

PREPARING FOR THE FUTURE

The second annual meeting of the Future Circular Collider (FCC) design study took place from 11 to 15 April in Rome.



The participants in the second annual meeting of the FCC design study. (Photo: Vinicio Tullio/INFN)

More than 450 scientists, researchers and leaders of high-tech industry gathered in Rome to review the progress of the Future Circular Collider (FCC) design study.

The study was kicked off in 2014 as a response to a statement in the European Strategy for Particle Physics, and today embraces 74 institutes from 26 countries.

With the LHC programme well under way, particle physicists are at an exciting juncture. New results from the 13 TeV run could show that we are on the threshold of an eye-opening era that presents new challenges and calls for developments. "To prepare for its future, CERN should continue to develop a vibrant R&D programme that should take advantage of its strengths and uniqueness, pursue design studies for future accelerators and create opportunities for scientific diversity," said Fabiola Gianotti, CERN Director-General, during her talk at the meeting.

Given the long lead times in the field of high-energy physics, the FCC study is exploring possible options for the post-LHC era. "As one of the high-priority items on CERN's agenda, the FCC design study is exploring a potential post-LHC accelerator project that will ensure the continuation of the world's particle physics programme," noted Frédéric Bordry, CERN Director for Accelerators and Technology, in his welcome speech.

The FCC would allow a rich physics programme during the 21st century, tackling some of the open questions in fundamental physics. The main focus of the FCC design study is a circular hadron collider able to reach energies an order of magnitude greater than those of the LHC (for protons). As a possible first step, a future high-luminosity electron-positron collider is being explored. Finally, a lepton-hadron collider scenario is also being examined, testifying to the richness of the FCC design study.

During the FCC week, progress in all aspects of the study was reviewed: from accelerator to detectors and experiments, including technological R&D developments and infrastructure. To build these machines, new ideas, vigorous technological developments, perseverance and worldwide collaboration are needed. "We must now focus on the established parameter set and use it as basis for optimisation work for the machines, detectors, and key technologies, required to build such a large-scale research infrastructure," Michael Benedikt, the leader of the FCC study, concludes.

Participants in the 2016 FCC Week will meet again in 2017 in Berlin. The FCC collaboration is preparing to deliver a design report by the end of 2018, in time for the next update of the European Strategy for Particle Physics.

Panos Charitos

WHAT IS YOUR IDENTITY?

In the physical world this is fairly clear; your sense of self is multi-faceted and highly complex but the entity of “you” is well defined. You can prove your identity simply, typically by showing your ID card or by having someone vouch for you. You are a being layered with attributes. Other people may request some of these attributes: your first name at Starbucks or your shoe size at the bowling alley. But only your most trusted contacts are granted access to your entire set of attributes... or maybe you never expose your identity entirely!

Online, your identity is a very different beast. It is fragmented. Each piece of your identity is typically verified by its own username and password. Occasionally pieces are forgotten or lost to the depths of the Internet. The hundreds of accounts that identify “you” present a security problem. Can you keep track of these accounts and is it even realistic to use unique, non-trivial passwords for each of them? Often the answer is no and multiple pieces of your identity can be chipped away by malicious actors (see this link: <http://cern.ch/go/Z6IP> for a detailed discussion).

What if you could have just one cyber identity? You may have noticed that the option to create new accounts online based on an existing Facebook or Google account is becoming commonplace. Attributes

from each of the services with which you authenticate yourself are being added to your social digital presence. The Internet is creating an increasingly complete picture of “you”.

When you next authenticate yourself via CERN Single-Sign-On, scroll to the bottom of the page where you will find the option to sign in via a trusted, alternative organisation, e.g. your home university. CERN has established a trusted relationship with these institutions, allowing them to vouch for you and to assert your identity on your behalf. By allowing logins from reliable organisations, we are limiting the creation of unnecessary accounts and trivial passwords. By using this form of login, known as Federated Login, you are limiting the fragmentation of your identity profile. Whether you choose to separate your

social and your research profiles remains up to you.

This idea is called Federated Identity Management. You are already able to access resources worldwide using your CERN account; why not test it and use Foodle to schedule your next meeting or create a survey? CERN has proven itself to be a trusted partner and so this service, based in Norway, allows us to use their app.

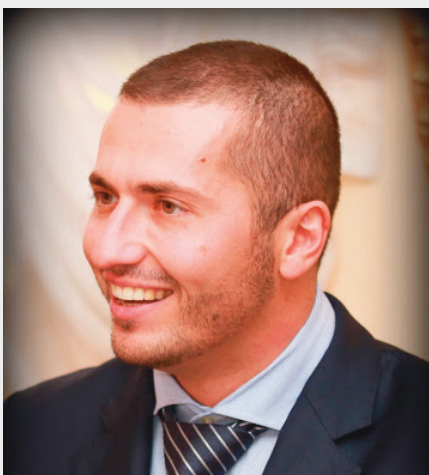
For further information, questions or help, check: <https://security.web.cern.ch> or contact us at Computer.Security@cern.ch.

Do you want to learn more about computer security incidents and issues at CERN? Follow our Monthly Report: https://security.web.cern.ch/security/reports/en/monthly_reports.shtml

Stefan Lueders, Computer Security Team

ANDREY LOGINOV (1977 – 2016)

It is with great sadness that we learnt that Andrey, our ATLAS colleague, passed away. Andrey's passion for physics and commitment to ATLAS were only surpassed by his zest for life and his loyalty to his friends.



Andrey first came to CERN in 2006 when he was working for Yale on the ATLAS experiment. Besides his work life, he was extremely active in a multitude of different areas; he made many friends and touched many lives.

Andrey was born in 1977 in Tomsk, Russia. He received his Bs., M.S. and PhD from the Moscow Institute of Physics and Technology

(MIPT). His PhD was conducted as part of the CDF Collaboration, with Henry Frisch of the University of Chicago as his research advisor. He joined Yale University in 2006 to begin working on ATLAS. Starting in 2006 he took an active role in the TRT installation and commissioning, and then turned his attention to operations and later to developing a TRT test stand. As Top Cross Section Working Group Co-convenor from 2009-2011, he was an early proponent of top quark physics at ATLAS.

Over the last 8 years, Andrey led several data analyses and made significant contributions to many others. He accomplished all this while being a very active and committed leader in the TRT community and being the TRT Run Coordinator since 2011.

Those who knew Andrey will agree that he had an amazing work ethic but we also knew him as a great instigator of fun; he worked hard and also played hard. His natural leadership extended beyond work into his social life where he showed a talent for organizing social events that would build community, celebrate accomplishments and generally be a great time. As a gifted photographer Andrey

captured many of these moments so we can still enjoy them, and in some way they will help us keep our memories of Andrey alive as well.

Andrey was also a high-level athlete in powerlifting and was instrumental in creating the CERN gym (Powerlifting @ CERN). It was Andrey's design, persistence and extensive knowledge, which made the dream a reality. This brought much joy into people's lives by providing a fully furnished weights room for people to work out in at CERN. He was also very friendly and provided help and coaching to those who needed it. Besides furnishing the weights room, he was also able to organise classes with an expert powerlifting coach from his native Russia and launched a small powerlifting competition. He was an accomplished photographer and contributed many more things to CERN life such as his involvement with THE Port.

Andrey would want us to celebrate his life, not mourn his passing, but his friends and colleagues will surely miss him dearly.

His colleagues and friends

COMPOSITION OF THE JOINT ADVISORY DISCIPLINARY BOARD (JADB) - 2016 EXERCISE

Appointed by the Director-General

Member	John PYM / DG
1st deputy	Gianluigi ARDUINI / BE
2nd deputy	Dante GREGORIO / FP

Appointed by the Staff Association

Member	Sigrid KNOOPS / TE
1st deputy	Lynda LEROUX / HR
2nd deputy	Ghislain ROY / BE

Mr Pym and Ms Knoops have drawn up the following list of staff members from among whom the Chairperson of the Board may be chosen when required:

Ronny BILLEN / BE
Ignacio REGUERO / IT
Sylvain CHAPELAND / EP
Laurent TAVIAN / ATS
Doris FORKEL-WIRTH / HSE
Gabriele THIEDE / FAP
Alberto PACE / IT
Pierre VANDE VYVRE / PH
Stephan PETIT / EN
Andreas WAGNER / IT

The composition of CERN official bodies for 2015 is available in the document you can find here: <http://cern.ch/go/ZDt6>.

HR Department
HR/DHO

COMPOSITION OF THE JOINT ADVISORY APPEALS BOARD (JAAB) - 2016 EXERCISE

Appointed by the Director-General

Member	Nicole POLIVKA / HSE
1st deputy	Raymond VENESS / BE
2nd deputy	Ramon FOLCH / EN

Appointed by the Staff Association

Member	Rosario PRINCIPE / TE
1st deputy	Nicolas SALOMON / PF
2nd deputy	Almudena SOLERO / FAP

Ms Polivka and Mr Principe have drawn up the following list of staff members from among

whom the Chairperson of the Board may be chosen when required:

Sandrine BAUDAT / FP
Arash KHODABANDEH / IT
François BRIARD / DG
Joel CLOSIER / PH
François BUTIN / EN
Isabelle LAUGIER / BE
Etienne CARLIER / TE
Pedro MARTEL / GS
Philippe CHARPENTIER / PH
Malika MEDDAHI / TE

Mediators [see Administrative Circular N° 6 (Rev. 1) entitled "Review procedure"] will also be selected from this list of ten staff members.

The composition of CERN official bodies for 2016 is available in the document you can find here: <http://cern.ch/go/hWm7>.

HR Department
HR/DHO

TAXATION IN FRANCE - MEMORANDUM CONCERNING THE ANNUAL INTERNAL TAXATION CERTIFICATE AND THE DECLARATION OF INCOME FOR 2015

You are reminded that the Organization levies an internal tax on the financial and family benefits it pays to the members of the personnel (see Chapter V, Section 2 of the Staff Rules and Regulations) and that the members of the personnel are exempt from national taxation on salaries and emoluments paid by CERN.

For any other income, the Organization would like to remind members of the personnel that they must comply with the national legislation applicable to them (cf. Article S V 2.02 of the Staff Rules).

I - Annual internal taxation certificate for 2015

The annual certificate of internal taxation for 2015, issued by the Finance and Administration Processes Department, is available since 19 February 2016. **It is intended exclusively for the tax authorities.**

1. If you are currently a member of the CERN personnel you received an e-mail containing a link to your annual certificate, which you can print out if necessary.
2. If you are no longer a member of the CERN personnel or are unable to access your annual certificate as indicated above, you will find information explaining how to obtain one at this link: <http://cern.ch/go/7KIS>.

In case of difficulty in obtaining your annual certificate, send an e-mail explaining the problem to service-desk@cern.ch.

II - 2015 income tax declaration form in France

The 2015 income tax declaration form must be completed following the general indications available at the following address: <https://admin-eguide.web.cern.ch/en/procedure/income-tax-declaration-france>.

IF YOU HAVE ANY SPECIFIC QUESTIONS,
PLEASE CONTACT YOUR LOCAL
SERVICE DES IMPÔTS DES PARTICULIERS
(SIP, private citizens' tax office) DIRECTLY.

This information does not concern CERN pensioners, as they are no longer members of the CERN personnel and are therefore subject to the standard national legal provisions relating to taxation.

HR Department
Contact: 73903

TAX DECLARATION: FOR THE ATTENTION OF MEMBERS OF THE PERSONNEL AND PENSIONERS LIVING IN FRANCE

Exchange rate for 2015

For 2015, the average annual exchange rate is EUR 0.87 for CHF 1.

HR Department

SAFERNANODESIGN SUMMER SCHOOL | 13-18 JUNE

A bioHC Summer School - 13-18 June 2016 - European Scientific Institute, Archamps, Haute-Savoie.



How can industrial innovation in nanotechnologies be reconciled with the legitimate concerns of citizens regarding environmental protection and public health? Tomorrow's researchers and engineers will require skills in risk evaluation using computational methods of modelling and simulation relevant to nanomaterials.

An intensive one-week specialist school, SaferNanoDesign will examine the analytical tools and methodologies required to rise to the challenge of the ecodesign of nanomaterial-enabled technology. The School combines an intensive programme of lecture presentations, followed up by practical sessions (experiments, computer simulation and modelling) and interdisciplinary group work. Courses will be given by international experts from France, Scotland, the US, the Netherlands and Switzerland and representatives from industry and regulatory bodies.

For more information:
www.safernanodesign.eu

THE 39TH CERN SCHOOL OF COMPUTING GOES TO BELGIUM: APPLY NOW!

Applications are now open for CERN's 39th School of Computing. The CSC:2016 will take place from 28 August to 10 September 2016 in Mol, Belgium, in collaboration with SCK-CEN and the Vrije Universiteit Brussel.

The two-week programme consists of more than 50 hours of lectures and hands-on exercises, all on advanced, interesting and challenging computing topics. It covers three main themes: data technologies, base technologies and physics computing. In particular, we will explore:

- Many-core performance optimisation
- Concurrent programming
- Key aspects of multi-threading
- Writing code for tomorrow's hardware today
- Storage technologies, reliability and performance
- Cryptography, authentication, authorisation and accounting
- Data replication, caching, monitoring, alarms and quota
- Writing secure software
- Observing software with an attacker's eyes
- Software engineering for physics computing
- Statistical methods and probability concepts in physics-data analysis
- The Monte Carlo method
- Multivariate analysis and visualisation
- Hypothesis testing as exemplified by recent HEP discoveries

The CSC is not a conference but a true summer university. As with every CSC, the programme is audited by the hosting university (Vrije Universiteit Brussel), and this year will deliver 6 ECTS credits upon successful completion of the CSC exam.

The event will be hosted by SCK-CEN. SCK-CEN is located in a unique 334 hectare rural setting stretching from Mol-Achterbos to Mol-Donk. About 90% of the site is made up of lakes, streams, fields and woods, providing a beautiful setting for learning.

However, it's not all study; the social and sports programme is also a vital part of the School. Mol is famous for its lakes, hiking and cycling, as well as the 12th century abbey, which makes cheese and beer. There will be ample opportunities to explore and experience the local area with your new friends and colleagues at the CSC:2016.

The CSC:2016 is open to postgraduate students and researchers working at CERN or at external institutes with a few years of experience in elementary particle physics, computing or related fields.

**Apply now at www.cern.ch/csc/
The deadline is 30 May – places are limited**

Alberto Pace, CSC Director

REGISTRATION SUMMER CAMP 2016

Reminder: registration for the CERN Staff Association Summer Camp is now open for children from 4 to 6 years old.



More information on the website: <http://nurseryschool.web.cern.ch/>.

The summer camp is open to all children.

The proposed cost is 480.-CHF/week, lunch included.

The camp will be open weeks 27, 28, 29 and 30, from 8:30 a.m. to 5:30 p.m.

For further questions, you are welcome to contact us by email at Summer.Camp@cern.ch.

CERN Staff Association

CERN LIBRARY | AGNES CHAVEZ @ CERN | 3 MAY

Agnes Chavez is an artist and educator participating in a two-week research stay through the ATLAS Experiment at CERN.

**Tuesday 3 May at 4 p.m.
CERN Library (52 1-052)**

Chavez is using the stay to develop her art and education project, Projecting pARTicles, which will be exploring particle physics through projection art. Chavez experiments with data visualization, sound and projection art to create participatory environments. She collaborates with programmers to create algorithmic drawings projected on to buildings, walls and spaces. This work explores our relationship with nature and technology, and how these and other sensory experiences determine how we perceive and interpret the world around us.

For the Projecting pARTicles series she has formed an interdisciplinary team of programmers, artists, scientists and educators to investigate how we can create art and education interventions inspired by emerging particle physics theories. She says: "This new understanding of the universe influences and inspires the way artists work with space, time and matter."

CERN Library

SCIENCE ME! | 09-10 JULY | GENEVA

The 11th *Nuit de la Science* will happen on July 9 and 10 on the theme "The Rules of the Game" in the gorgeous park of the Perle-du-Lac showcasing the Museum of Science History, organizer of this event that attracts 30-35,000 visitors on each edition.



On this occasion, the Chimiscope and the Museum of Science History invite the public to take part to Science Me!, the first European science show competition.

Under a large circus tent, teams of young scientists from all origins and practicing all sciences will compete under the form of

10-minute shows, in French or in English. At the end of each show, the audience will also be able to interact and converse with the participating teams.

The success of the demonstrations will be measured by applausemeter, while a jury of neutral and independent scientists will evaluate the quality of the shows on the basis of sound criteria (pedagogical and didactic aspects of the explanations, artistic and poetic dimensions of the presentations, fulfilment of safety regulations, interactivity with the public, simplicity vs. complexity of presented themes, scientific novelty). The three best shows of the weekend will be awarded after the competition.

Science Me! is financially supported by Agora, the instrument of the Swiss National Science Foundation aimed at widespreading the knowledges and the dialogues between the scientists and the public.

To register a team go to: <http://cern.ch/go/8BfX>.

Contact us to inquire about the competition: ScienceMe@unige.ch.

2nd Developers@CERN Forum

Python at CERN

IT Amphitheatre
30-31 May



Are you a Python guru, or would you like to learn?

Propose a talk or workshop at
<http://cern.ch/dev-forum>



Seminars

MONDAY, 2 MAY 2016

- 08:30 Monthly induction** HR INDUCTION PROGRAMME - 1st Part **80-1-001 - Globe of Science and Innovation - 1st Floor**
- 14:00 Workshop** Experimental Particle and Astroparticle Seminar Zurich **42-R-407**

TUESDAY, 3 MAY 2016

- 11:00 EP Seminar** Signals for invisible matter from solar-terrestrial observations **TH Conference Room**

WEDNESDAY, 4 MAY 2016

- 14:30 ISOLDE Seminar** Mapping the densities of exotic nuclei

MONDAY, 9 MAY 2016

- 14:00 Workshop** Experimental Particle and Astroparticle Seminar Zurich **42-R-407**

TUESDAY, 10 MAY 2016

- 11:00 LHC Seminar** ALICE seminar **TH Conference Room**
- 20:30 GLOBE - Public Events** *Le Modèle du CERN et les grands défis mondiaux* **Globe of Science and Innovation - 1st Floor**