CERN Bulletin

Issue No. 28-29/2016 - Monday 11 July 2016
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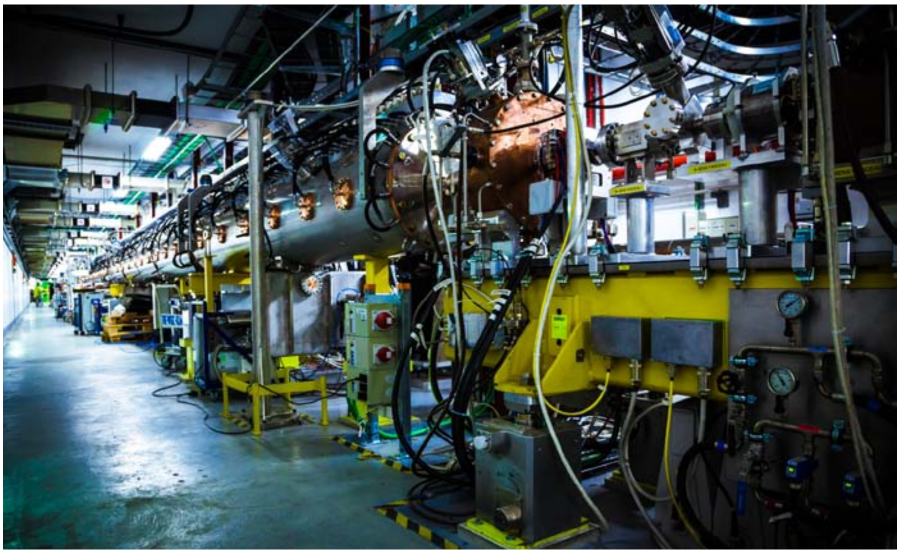
LINAC4 CROSSES THE 100 MEV THRESHOLD

The new linear accelerator, which from 2020 will be the first link in the accelerator chain, has entered a new stage of its commissioning.



Linac4 during its installation in 2015. This photo was taken as part of the 2015 Photowalk competition. (Image: Federica Piccinni)

We couldn't have imagined a more appropriate date: on 1 July (1.07), Linac4 reached an energy of 107 MeV. Having crossed the 100 MeV barrier, the linear accelerator is now on the home straight of its commissioning. "This stage was very quick – it took less than two weeks," says Alessandra Lombardi, deputy project leader of Linac4, in charge of the commissioning.

In 2020, Linac4 will replace the existing Linac2 as the first link in the accelerator chain. It will accelerate beams of H^- ions (protons surrounded by two electrons) to 160 MeV, compared to 50 MeV with Linac2.

The new machine is particularly sophisticated as it comprises four types of accelerating structure: the particles are accelerated in several stages, first to 3 MeV by a radio-frequency quadrupole (RFQ), then to 50 MeV by drift tube linacs (DTLs), then to 100 MeV by coupled-cavity drift tube linacs (CCDTLs), and finally to 160 MeV by Pi-mode structures (PIMS).

At the end of 2015, Linac4 accelerated beams to 50 MeV, the same energy as Linac2, for the first time. For the current stage, the Linac4 team put the last two types of accelerating structure, the CCDTLs and PIMS, into operation. All seven CCDTL cavities and one of the twelve PIMS cavities have been tested. "We were therefore able to verify that the entire acceleration chain was working," explains Jean-Baptiste Lallement, from the Linac4 commissioning team.

The team is especially happy to have been the first in the world to use the innovative CCDTL cavities. They work on the same principle as normal DTLs: the particles travel through a series of tubes with spaces between them

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A WORD FROM CHARLOTTE WARAKAULLE

STRENGTHENING CERN AND PARTICLE PHYSICS IN A CHANGING GLOBAL ENVIRONMENT

As we welcome Romania as our 22nd Member State in late July, now is a good time to reflect on the geographical enlargement process that was initiated in 2010.

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NEWS

Published by:
CERN-1211 Geneva 23, Switzerland
Tel. + 41 22 767 35 86 ***Printed by:*** *CERN Printshop*
© 2016 CERN - ISSN: ***Printed version:*** *2077-950X*
Electronic version: *2077-9518*

A WORD FROM CHARLOTTE WARAKAULLE

(Continued from page 1)

STRENGTHENING CERN AND PARTICLE PHYSICS IN A CHANGING GLOBAL ENVIRONMENT

Let me begin by setting the context. CERN operates in an increasingly complex and globalised world. Political and economic developments in the European neighbourhood and well beyond can have an impact on our work – directly or indirectly, in the short term or in a much longer perspective. We need to anticipate that change as far as we can, while also being agile enough to meet the challenges that we do not expect.

The UK's EU referendum on 23 June is a case in point. Because CERN is an organisation founded to facilitate cooperation across borders, Brexit is an uncomfortable truth to many of us. It is, nevertheless, the outcome of the political processes of one of our founding Member States, and is something we must respect. Whatever direction the UK now takes, we will be working with the country's particle physics community to ensure that they, and we, continue to reap the benefits of the UK's involvement with CERN.

Brexit just goes to show that as an organisation focused on science, not politics, we nevertheless have to adapt to developments in the realms of politics and economics. Enlargement is one of the tools that allows us to do just that. And it is designed to do so in a balanced, measured and thoughtful way, consistently guided by one overarching objective: strengthening our discipline and the scientific work of CERN in the long term.

With Romania coming on board, only two new Member States have joined since 2010. Three countries have become Associate Members in the same period. And there's a very good reason for that slow pace. We want to be sure that when a new country joins the CERN family, membership brings something positive to both parties. The task forces that visit applicant countries are thorough. Their task is to ensure that when a country joins CERN, its science, scientists and industry are all ready to reap the full benefits of either Associate or full Membership. Moreover, enlargement is an opportunity for CERN to nurture developing particle physics communities around the world. This is good for them, good for us, good for particle physics and good for fundamental research generally.

Enlargement is an acknowledgement of the global reality of particle physics. There are over 100 nationalities represented among our user community today. It makes sense for more countries whose scientists play an important role here to have the opportunity to enjoy the benefits of Membership or Associate Membership as well.

In short, enlargement is part of a process that recognises CERN's inherently global nature, encourages emerging physics communities and allows us to thrive in an ever-changing world. It is targeted to benefit all players in particle physics, is conducted in a gradual manner, and will not change the way we work. We remain a global laboratory with a European heart.

The world is in flux, and enlargement helps us to play our part in shaping developments, rather than allowing ourselves to be swept along by the winds of change. The enlargement process reacts to new developments in our world, and it has given us new tools to react with. But it builds on a long and proud tradition of inclusiveness and openness, key principles that have for over 60 years been at the heart of our scientific work.

Charlotte Warakaulle,
Director for International Relations

LINAC4 CROSSES THE 100 MEV THRESHOLD

(Continued from page 1)

and are accelerated between the tubes by electric fields, entering the next tube when the oscillating field changes direction. In the shelter of the tube, they drift along to the next space, where the field accelerates them once again.

The difference between DTLs and CCDTLs is the way in which they are focused. DTL cavities contain permanent magnets, inside the tubes, that keep the bunches of particles together. "But this solution is quite expensive and, as the permanent magnets are inside the vacuum chamber, it's difficult to work on them," Maurizio Vretenar, Linac4 project leader, explains.

At a higher energy, a new solution was possible: placing quadrupole magnets between two series of tubes, outside the vacuum chamber. "This way, we can use electromagnets and can regulate the magnetic field to improve the focusing," Vretenar continues. Maintenance is much easier and the manufacturing cost is lower.

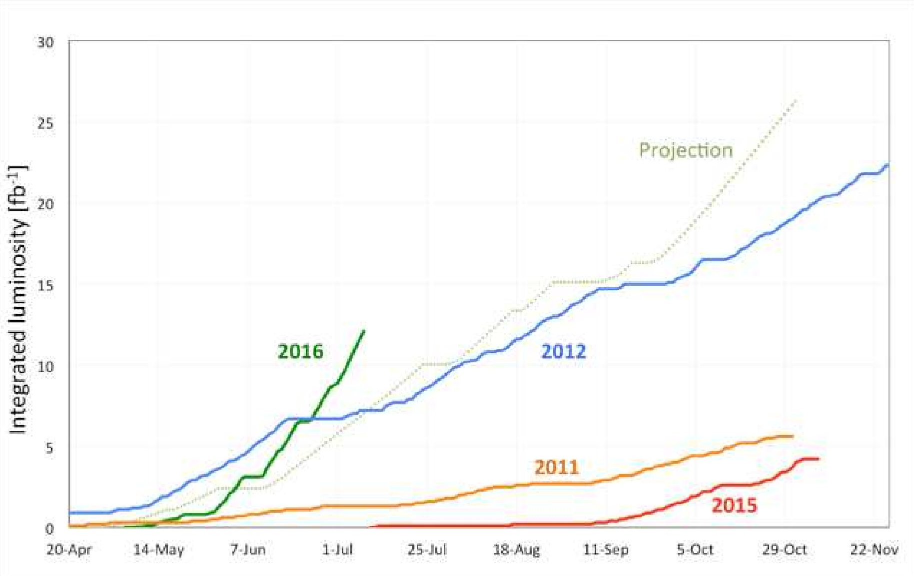
The initial design of the CCDTL cavities, involving very specific coupling cells, was done at CERN. The development is the fruit of a collaboration between CERN and the Russian institutes VNIITF (Russian Institute for Technical Physics) and BINP (Budker Institute of Nuclear Physics). The Russian institutes then manufactured the components.

Fresh from this success, the commissioning of Linac4 will be stopped in a few days. The last PIMS cavities will be installed during the summer, along with the equipment that will inject the beam into the PS Booster – the second link in the accelerator chain. Commissioning will resume in September with the goal of reaching 160 MeV before the end of the year.

Corinne Pralavorio

LHC REPORT: ASTOUNDING AVAILABILITY

The LHC is off to an excellent start in 2016, having already produced triple the luminosity of 2015. An important factor in the impressive performance so far this year is the unprecedented machine availability.



LHC integrated luminosity in 2011, 2012, 2015 and 2016 and the prediction of the 2016 performance foreseen at the start of the year.

Following the 2015-2016 end of year shutdown, the LHC restarted beam operation in March 2016. Between the restart and the first technical stop (TS1) in June, the LHC's beam intensity was successively increased, achieving operation with 2040 bunches per beam. The technical stop on 7-8 June was shortened to maximise the time available for luminosity production for the LHC experiments before the summer conferences. Following the technical stop, operation resumed and quickly returned to the performance levels previously achieved. Since then, the LHC has been running steadily with up to 2076 bunches per beam.

Since the technical stop, a total integrated luminosity of more than 9 fb^{-1} for ATLAS and CMS has been collected – to be added to the 3 fb^{-1} previously collected in 2016 – with a production rate significantly exceeding expectations, thanks to the excellent machine availability. In the period following TS1 the LHC was operating for about 80% of the total scheduled time, with only 20% of the time spent recovering from faults. This is an outstanding result for a machine as complex as the LHC and represents an improvement of more than 10% with respect to 2015. The experience gained during Run 1 has resulted in significant improvements to operational efficiency, allowing for very smooth machine cycling. As a result, the total time with colliding beams – the so-called 'Stable Beams' efficiency – exceeded 50%. This number is particularly impressive when compared with the previous value of 33% in 2015.

The average duration of stable beams in recent weeks was 13.7 hours, compared to 6.3 hours achieved during the 25 ns run in 2015. The improved reliability of individual systems contributes significantly to the successful exploitation of the machine. This is the result of a systematic effort of hardware groups such as cryogenics, quench protection, power converters, RF, collimation, injection and others to improve the reliability and maintainability of their systems. Of particular note this year is the absence of radiation-induced failures of tunnel electronics, achieved despite the higher radiation levels due to the higher luminosity production thanks to the major effort co-ordinated by the radiation to electronics team.

On 26 June, the LHC has reached its design peak luminosity of 1 x 10^{34} cm^{-2}s^{-1} for the first time. This fill was kept in the machine for 37 hours – yet another record – producing 0.7 fb^{-1} of integrated luminosity before being finally dumped by the operators. This is an impressive result, in particular when considering that the LHC is still operating at 6.5 TeV, below the nominal energy of 7 TeV.

Up until 5 July, 23 fills reached Stable Beams, six of which were dumped by operators after 20 to 30 hours. All other fills were kept in collision until the occurrence of a fault inducing a beam dump. This approach has been chosen by the LHC coordination team thanks to the excellent luminosity lifetimes of more than 30 hours, allowing for productive fills lasting more than one day.

Despite the excellent overall performance, the LHC suffered a few failures after the first technical stop. In particular, a water infiltration in the LHC tunnel resulted in flooding of the service area of LHC Point 3 on 21 June. This affected several systems, particularly the control racks of the nearby collimation system. Several control cables were damaged by the water infiltration and needed to be replaced. Work in the tunnel was delayed due to a problem with the lift in point 3, which was also a consequence of the flood. The overall downtime of the LHC due to this event was about 65 hours.

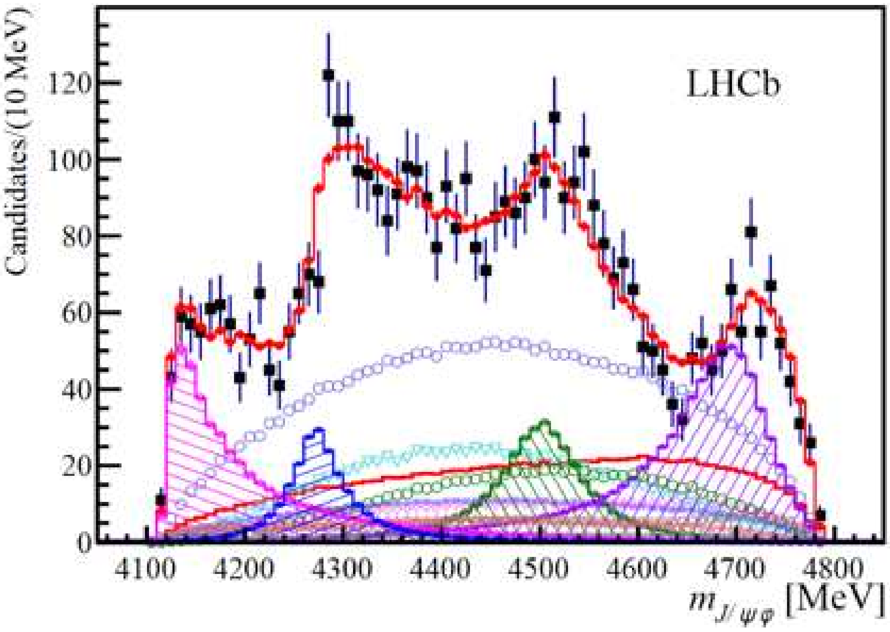
Moreover, some recurring causes of premature dumps are still being seen. Four beam dumps were induced by beam losses generated by the interaction of the beam with dust particles intercepting the beam trajectory (the so-called UFOs – Unidentified Falling Objects). These events were all observed at the same location in the machine, close to the left-hand side of LHC Point 1. UFOs do not threaten machine safety, but as they reduce machine availability the settings of the beam loss monitors were slightly optimised on 4 July to cope with the losses induced.

Even considering such events, after the excellent start of 2016, new records of luminosity production are expected to be made before the next year-end technical stop.

Andrea Apollonio for the LHC team

LHCb UNVEILS NEW PARTICLES

The LHCb collaboration announces the observation of four "exotic" particles from its analysis of the LHC data.



The image above shows the data (black dots) of the mass distribution resulting from the association of the J/ψ and φ mesons, where the contribution of the four exotic particles is illustrated by the four peaks at the bottom.

On 28 June, the LHCb collaboration reported the observation of three new "exotic" particles and confirmation of the existence of a fourth one in data from the LHC. These particles each appear to be formed by four quarks (the fundamental constituents of the matter inside all the atoms of the universe): two quarks and two antiquarks (that is, a tetraquark). Due to their non-standard quark content, the newly observed particles have been included in the broad category of so-called exotic particles, although their exact theoretical interpretation is still under study.

The quark model, proposed by Murray Gell-Mann and George Zweig in 1964, is considered to be the most valid scheme for the classification of hadrons (all the composite particles) that has been found so far, and it is part of the Standard Model of particle physics. In the quark model, hadrons are classified according to their quark content. However, the fact that all observed hadrons were formed either by a pair of quark-antiquarks (in the case of mesons) or by three quarks only (in the case of baryons) was a mystery for many years. But, in the last decade, several collaborations have found evidence of the existence of particles formed by more than three quarks. For example, in 2009 the CDF collaboration found such a particle, known as X(4140) – where the number in parentheses is its reconstructed mass in megaelectronvolts. This result was later confirmed by a new CDF analysis and by the CMS and DØ collaborations.

Nevertheless, the quantum numbers – characteristic numbers with which the properties of a specific particle are identified – of X(4140) were not fully determined, and this ambiguity exposed the theoretical explanation to uncertainty. The LHCb collaboration has now been able to determine these numbers with high precision. This result has a significant impact on the possible theoretical interpretations and, indeed, it excludes some of the previously proposed theories on its nature.

"The studies are very tough," says Guy Wilkinson, spokesperson of the LHCb collaboration, "requiring a sophisticated modelling of all possible processes contributing to what is seen in the detector, but our analysts are highly skilled in these techniques."

While the X(4140) had already been seen, this is the first time that the observation of the three new exotic particles with higher masses, known as X(4274), X(4500) and X(4700), has been announced. Even though the four particles all have the same quark composition, they each have a unique internal structure and mass and their own sets of quantum numbers.

These results are based on a detailed analysis of the decay of a B^+ meson into mesons called J/ψ, φ and K^+, where the new particles appear as intermediate ones decaying to a pair of J/ψ and φ mesons. To perform this research, the LHCb physicists used the full set of data collected during the first LHC run, from 2010 to 2012. The large signal yield efficiently collected by the LHCb detector has allowed the collaboration to discover the three new particles, which were (literally, see the picture) "peaking out" from the data.

"The Run 1 data set has allowed us to uncover these new particles," Wilkinson continues. "The much larger sample which we have started to collect in Run 2 will allow for much more detailed studies of their properties, to help us understand better how the strong force builds hadrons from the constituent quarks."

This news follows the discovery of the first two pentaquark particles by the LHCb collaboration last year.

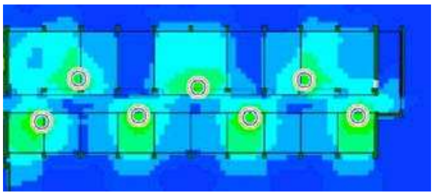
"The results on the tetraquark, following on from the pentaquark discovery, shows what a rich and powerful facility the LHC is for improving our knowledge of hadronic spectroscopy," Wilkinson happily notices. "This is a topic that was given little consideration when the LHCb experiment was being designed, but one for which the detector is remarkably well adapted," he concludes.

*More information on the tetraquark results is available on the LHCb website : **cern.ch/go/K7qH** and in the two submitted scientific papers (see on: **cern.ch/go/zCP7** and **cern.ch/go/C9sG**).*

Stefania Pandolfi

A CAMPUS-WIDE WI-FI SERVICE FOR CERN

Improvements are coming to CERN's Wi-Fi service as connectivity is improved in offices, restaurants and meeting rooms.



An illustration of the planned Wi-Fi development showing that full coverage can be obtained efficiently with one access point for every three offices.

The IT department's Communication Systems group has provided Wi-Fi connectivity at CERN for many years now but with a focus on meeting rooms, auditoriums and informal meeting places such as the restaurants. Although some buildings have Wi-Fi coverage in offices, most do not and CERN's Wi-Fi service is lagging behind the demand driven by the growing number of tablets, lightweight laptops and other wireless-only devices.

Furthermore, the current network infrastructure can't cope with the many devices in the Main Auditorium during events such as the recent LIGO announcement and it often has difficulty handling the demand at Restaurant 1 during lunchtimes. The wireless access points deployed today also have difficulty providing coverage in Building 40, due to its reinforced concrete walls and the circular open space.

Improvements are coming!

Fortunately, the CERN Management recently approved a proposal to provide full Wi-Fi coverage across CERN. Instead of the standalone Wi-Fi access points we have today, the IT-CS group will be installing new, centrally managed access points, which support the latest Wi-Fi standard, 802.11ac "Wave 2", in conference rooms and throughout office buildings. The new access points will be installed every three offices, providing effective coverage for everybody, with each access point easily capable of supporting up to 10 clients at the same level of performance as the wired network connections in offices today.

Having all the Wi-Fi traffic routed via the central controllers in the Computer Centre means we can finally fix the problems in Restaurant 1 at lunchtimes or during popular events in the main auditorium. Vincent Ducret, the Network Engineer responsible for the Wi-Fi service, explains: "In future, we'll have one big pool of IP addresses for all of CERN rather than lots of little pools for each building. So when people are in Restaurant 1 for lunch, they'll be able to get an IP address just as easily as if they were in their office."

Also, as the IP addresses won't be linked to location, you will be able to move around within the Wi-Fi coverage area without losing your network connection. No more frustration as connections break and web downloads stop when you move between your office and a meeting room! In some cases, outdoor coverage will also be provided, for example for the busy routes between Building 40 and the Main Building or between Building 774 and the CERN Control Centre.

Managing all of the user connections and routing the traffic centrally mean that we will finally be able to introduce a proper "guest" Wi-Fi network at CERN. Short-term visitors will be able to quickly establish a network connection, identifying themselves by means of a code sent to a mobile phone without needing to wait for a contact at CERN to approve their request. Computer security will also be improved as users connected to this "guest" Wi-Fi network will not be able to access most resources at CERN; although they will of course be able to connect to the Internet to, for example, browse the web and read e-mail directly or via a VPN connection. Naturally, the eduroam service will remain, enabling trusted academic visitors to establish a full connection to CERN's network environment just as they can today.

As well as managing user connections, the central controllers will also actively manage the access points, another big change from today's configuration, where each access point is independent. This will help greatly with the situation in Building 40 where, as Adam Sosnowski, a fellow involved in preparing the proposal to deploy a campus-wide Wi-Fi service, explains: "In addition to installing many more access points — 200 instead of the 60 we have today — we need to manage the radio transmissions from each access point to avoid interference, for example across the central space."

When will the new service be available?

"At the moment, we're studying where best to place the new access points for optimal coverage," explains Aurélie Pascal, leader of the Wi-Fi Service Enhancement Project, "and installing the necessary network cabling. Deployment of the new access points should start in early 2017 and we aim to complete the project by the beginning of LS2."

New cabling is needed both because the existing structured cabling is in the wrong place and because it only supports a maximum bandwidth of 1 Gbps, well below the capabilities of the new access points. Unfortunately, cable installation inevitably leads to noise, dust and inconvenience. Having all the cable installation work done outside working hours would be prohibitively expensive but care is being taken to minimise disruption, for example by grouping all the drilling so the noise is over and done with as soon as possible rather than being spread throughout the work. The project team also collaborates with the Territorial Safety Officer during the planning of the work in each building to ensure, for example, that noisy work is suspended during important meetings. And don't be surprised if you see a network socket being installed in every office: even if all the sockets aren't needed now, they might be in future; installing all the sockets now will avoid possible disruption later.

Full technical details about the project are available in a video recording of an IT Technical Forum presentation (see: **cern.ch/go/7szC**).

All in all, the Wi-Fi service should soon be fully up-to-date and able to cope with today's mobile computing devices! We hope the improved service will be worth the wait and will more than compensate the disruption during the installation work, especially for the new cabling.

Tony Cass, IT Department

Wi-Fi and non-ionising radiation

The new Wi-Fi network being installed at CERN minimises the emission of non-ionising radiation.

CERN's new campus-wide Wi-Fi network, for which cabling has just been installed, will improve coverage throughout the Laboratory by using a higher number of lower power installations. This gives more uniform coverage, while at the same time minimising the emission of non-ionising radiation.

Non-ionising radiation (NIR) comprises any type of radiation that does not carry enough energy to ionise atoms or molecules. It includes electrical power distribution systems, infrared radiation, which we experience in the form of heat, microwave radiation and radio waves as well as Wi-Fi. The modern world is completely reliant on NIR. Without it, there would be no electricity distribution, no air traffic control, no television, radio or microwave ovens. Even humans emit non-ionising radiation in the form of heat.

Human exposure to NIR is subject to strict regulation. The International Commission on Non-Ionising Radiation Protection (ICNIRP) considers that exposure below the level that causes heating of the body is unlikely to be associated with adverse health effects, and the power limits for the operation of Wi-Fi base stations are thousands of times lower than the level that would be needed to cause such heating. Our existing installations are already comfortably below this limit, and the new installations will be lower still.

Many studies on the health effects of ambient NIR have been carried out, all concluding that the technology is safe. Some of these reports can be found on **cern.ch/go/g66t** and **cern.ch/go/6mpS**.

Simon Baird, Head of the HSE Unit

MAXIMUM ATMOSPHERE AT THE MINI ATOMIADES

CERN Clubs Coordination Committee and CERN Staff Association host the ASCERI Mini Atomiades June 2016.

The CERN team won the tennis tournament for the Mini Atomiades 2016. (Photo: Erwin Van Hove)

Over 180 participants from 10 different European Scientific Research Institutes came together on the first weekend of June in Divonne-les-Bains to take part in the ASCERI Sport & Science Mini Atomiades. Sports men and women from Belgium, Germany, France, Hungary, Russia and Switzerland battled it out in four different tournaments for medals, cups and, above all, lots of fun.

The four disciplines included football, golf, tennis and a 10km race. CERN was victorious in tennis, golf and the men's and women's 10km, and despite the CERN football team putting up an excellent fight against some very strong teams they came almost last (we cannot win everything, can we?). But CERN were the clear winners for team spirit, community and camaraderie, as confirmed by all the compliments we received from the other institutes following the event.

The Atomiades events are not only an opportunity to compete in the spirit of fair play with our counterparts in other European Scientific Research Institutes, but also to network and build links during the post tournament events, and what better way to do so than over a nice meal and good music. Our CERN colleagues pulled out all the stops to provide our guests with top-notch entertainment, for which we are extremely grateful. Indeed the success of the event was due to all the volunteers who gladly gave up their time to organise the different tournaments, help with the catering, take photographs and welcome our colleagues; again we are very grateful for their invaluable support.

More info and photos are available here: ***https://event-atomiade-2016.web.cern.ch/galleries***.

Rachel Bray, Atomiades organizer team

HIGGS BOSON PIZZA DAY

CERN celebrated the fourth anniversary of the historical Higgs boson announcement with special pizzas.

400 pizzas were served on Higgs pizza day in Restaurant 1 at CERN to celebrate the fourth anniversary of the announcement of the discovery of the Higgs Boson (Image: Maximilien Brice/ CERN)

What do the Higgs boson and a pizza have in common? Pierluigi Paolucci, INFN and CMS collaboration member, together with INFN president Fernando Ferroni found out the answer one day in Naples: the pizza in front of them looked exactly like a Higgs boson event display.

A special recipe was then created in collaboration with the chef of the historic "Ettore" pizzeria in the St. Lucia area of Naples, and two pizzas were designed to resemble two Higgs boson decay channel event displays.

The "Higgs Boson Pizza Day" was held on Monday, 4 July 2016, on the fourth anniversary of the announcement of the discovery of the Higgs boson at CERN. On this occasion, more than 400 pizzas were prepared and served at lunchtime in Restaurant 1.

For all pizza lovers who want to learn more about the Higgs boson, the recipe and the explanation of the culinary physics behind the pizzas are available on: **cern.ch/go/k9q6**.

Buon appetito!

Stefania Pandolfi

Computer Security

YOU'RE A SUMMER STUDENT? SOME TIPS TO GET YOU STARTED

Welcome to CERN. For the next couple of weeks, you will be able to breathe in the free academic world of CERN. You will have the chance to learn thanks to in-depth lectures, enjoy the freedom of exploring your preferred or assigned research topic, and form your own network of peers during your evening hours. However, "academic freedom" does not imply that there are no boundaries. At CERN, academic freedom also comes with responsibility. Below are some hints on how best to assume that responsibility securely.

You are the primary person responsible for the security of your laptop, smartphone and computer; for your account and your password; for your data; and for the programs, computing systems and services you are developing, so stop and think before acting. If you are working on a project developing code, get the appropriate training first so that your software is "free" of bugs and vulnerabilities that may spoil the functionality of your code and your program. If you have been asked to set up a database or a webserver, consider the offerings of CERN's IT department first*: they provide a database-on-demand service as well as different web services for free. No need to mess around with hardware, operating systems, web servers and the like – simply create your webpages! Also note that employing external services (i.e. web services outside CERN) is not recommended from a computer security perspective. If you are in doubt or need help designing and structuring the computing part of your project, get in touch with us at **Computer.Security@cern.ch**. For those of you who are engaged in mathematical simulations, engineering tasks or designing control systems: CERN provides a portfolio of engineering applications for free. There is no need to download additional software from the Internet. If you do need to, contact **Software.Licences@cern.ch** first as that software might come with license costs or may violate copyrights of third parties.

Talking about rules and copyright violation… although listening to music or watching videos is subject to the agreement between you and your supervisor, note that sharing videos, music or software packages via torrents or other means usually violates copyrights of third parties and hence is not permitted. CERN regularly gets complaints from those companies and if you are not ready to pay their infringement fees, you'd better make sure now that you legitimately own that video/music/software, and that any sharing applications (e.g. Bittorrent) are disabled. You must also comply with CERN's Code of Conduct and the CERN Computing Rules. The latter stipulates that the personal use of CERN's computing infrastructure is tolerated as long as impact is kept minimal and all activity is legal, not offensive and not of commercial nature. And gentlemen, ladies: the browsing of porn sites is considered inappropriate. If you want to spare yourself an embarrassing conversation with us, just don't do it.

Finally, think of your laptop and PC here at CERN and at home: make sure that it is happy and healthy. Allow it to update itself by enabling "Windows Update", Mac "Software Update" or Linux's "yum auto-update", and get decent free anti-virus software for your Windows computer or Mac! Take care when browsing the web – not everything is as it seems, and a bad infection of your computer might require a full reinstallation. So, if in doubt, STOP - THINK - DON'T CLICK. Good luck, and have a fun summer!!!

The full catalogue is available on: **cern.ch/go/6mpS.*

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

PABLO RODRÍGUEZ PÉREZ (1976 - 2016)

It is with great sadness that we announce the sudden loss of Pablo Rodríguez Pérez, a physicist on the LHCb Experiment, who died in Manchester on 1st July 2016.

Pablo Rodríguez Pérez.

Pablo obtained his Bachelor of Science in Physics at the *Universidade de Santiago de Compostela* (USC) in 2003, specialising in electronics before going on to work in industry.

He joined the LHCb experiment in 2007, undertaking his Master of Science at USC on the optimisation of readout electronics for the Inner Tracker. He then continued his studies with a PhD, becoming the principal author for the experiment control system of the Silicon Tracker. After the commissioning of the LHCb experiment he moved his attention to the LHCb upgrade, performing the first investigation of prototypes for the upgrade of the vertex locator (VELO).

Following his PhD from USC, *Cum Laude*, he joined the University of Manchester in 2013 to work further on the VELO Upgrade. Pablo took the lead role in the group's FPGA firmware development and was key to the VELO Upgrade module construction.

Pablo is survived by his wife, Sonia, their three young children, his parents and his brothers Iván and Carlos. He is predeceased by his brother Victor. His warmth, kindness, dedication and competence will be deeply missed by his many friends in the LHCb Collaboration.

LHCb Collaboration

Official news

SECURITY AFFECTS US ALL!

In the hope of minimising the number of thefts of the Organization's property, which can lead to months of work going to waste on certain projects, you are reminded of the importance that CERN attaches to the rules concerning the protection of equipment for which we are responsible. If you see any unusual behaviour or if you are the victim of a theft, don't hesitate to report it by submitting a ticket through the CERN Portal or calling the CSA. Security affects us all!

CERN is attractive in more ways than one, and it remains as attractive as ever to thieves. With the nice weather and with the holiday season in full swing, the number of thefts recorded at CERN is on the rise. Items stolen include money, computers, electronic equipment, cable drums and copper antennae.

There are a few basic precautions that you should take to protect both your own and the Organization's property: lock your door, don't leave valuable items in your office, store equipment in a secure place, etc.

These thefts are upsetting on a personal level and they can also have unfortunate consequences for the Organization, as they can lead to high-priority projects being delayed by several months.

CERN, through its Security Service, makes every effort to prevent such incidents and to bring the perpetrators of these crimes to justice once they have been identified. But in most cases, we rely on information provided by you using tickets submitted through the CERN Portal or by calling the Access Control Centre (CSA). If you see any unusual behaviour or if you are the victim of a theft, don't hesitate to report it by submitting a ticket through the CERN Portal or calling the CSA.

SMB Department

Learning

"MANUAL HANDLING" COURSE IN SEPTEMBER

The next "Manual Handling" course will be given, in French, on 26 September 2016. This course is designed for anyone required to carry out manual handling of loads in the course of their work.

The main objective of this course is to adopt and apply the basic principles of physical safety and economy of effort.

There are places available. If you are interested in following this course, please fill an EDH training request via our catalogue on: **cern.ch/go/6mpS**.

Safety Training, HSE Unit

Take note

LOGISTICS SERVICES REMINDER

Members of the personnel are invited to take note that only parcels corresponding to official orders or contracts will be handled at CERN. Individuals are not authorised to have private merchandise delivered to them at CERN and private deliveries will not be accepted by the Goods Reception services.

Thank you for your understanding.

Logistics Services

CERN RESTAURANTS: OPENING HOURS DURING SUMMER

In the summer, the three CERN restaurants remain open during their usual hours. On Monday 1st August and Thursday 8 September, the Restaurant 1 will be open from 7:00 a.m. to 10:00 p.m.

The satellites will be open as follows:

- Building 6: normal hours
- Building 13: normal hours
- Building 30: normal hours
- Building 40: closing at 4:30 p.m. instead of 5:00 pm
- Building 54: normal hours in July, closed in August
- Building 864: normal hours
- Building 865: normal hours
- Building 774: normal hours

TELEPHONY USER SURVEY

Let us know your needs to better plan the transition to a new CERN telephony system.

CERN is planning to upgrade its telephony network and replace the system with a new and modern VoIP infrastructure. We strive to make this transition as beneficial and smooth as possible for you. Please let us know more about your current working environment, expectations and suggestions by responding to this survey: **https://cern.ch/tel-survey**.

The more answers we get, the better the new system will serve everyone in the future. The survey will take you about five minutes to complete; we are counting on your feedback!

IT Department

THIS SUMMER, GO BEHIND-THE-SCENES OF CERN IN PHOTOS IN THE MICROCOSM

Find out the best photos of the 2015 CERN Photowalk competition in the *Microcosm*.

The best photos taken at the 2015 CERN Photowalk competition are now exhibited in the *Microcosm*, for the whole summer period.

Through this photographic exhibition, the visitors will be taken behind-the scenes of CERN, through the main workshop, the ISOLDE facility and the future accelerator Linac 4. They will also take a glimpse of the life on the CERN campus.

HARDRONIC FESTIVAL | 23 JULY | RESTAURANT 3

Hardronic is back and the 2016 edition will take place on Saturday 23 July behind the Restaurant 3. Come celebrate our 25th edition with 11 bands, 2 stages, bouncy castle, drinks and a food stand (profits go to charity)! Hardronic is made thanks to sponsors and volunteers, if you would like to volunteer, please send a message to contact-hardronic@cern.ch - http://hardronic.web.cern.ch.

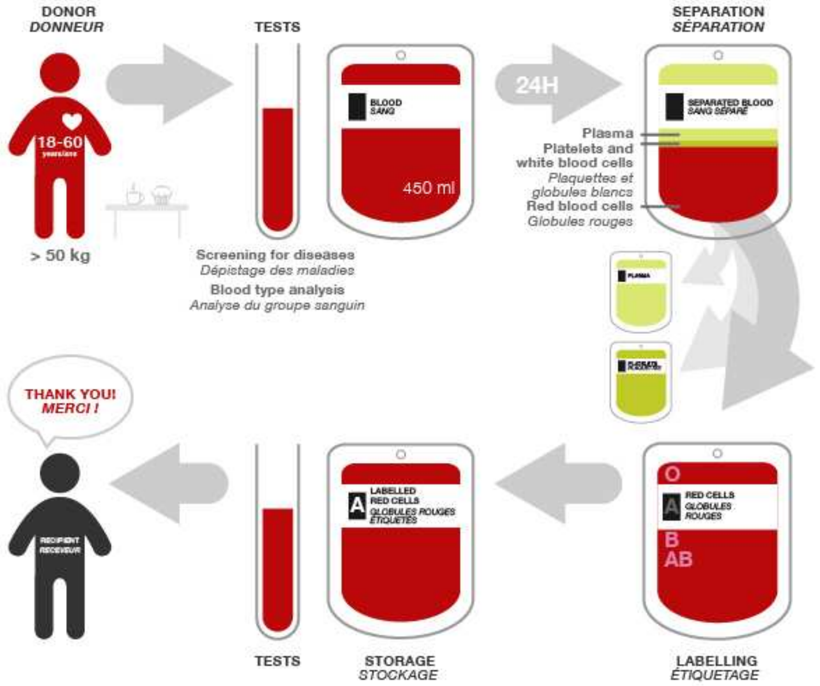
BLOOD CANNOT BE MANUFACTURED

WE COUNT ON YOUR GENEROSITY

LE SANG NE PEUT PAS ÊTRE FABRIQUÉ

SOYEZ GÉNÉREUX, DONNEZ VOTRE SANG

WHAT HAPPENS TO YOUR BLOOD ? *QU'ADVIENT-IL DE VOTRE SANG ?*



19-20.07.2016, *Restaurant 2*

9 h-16 h

DID YOU KNOW? *LE SAVIEZ-VOUS ?*

50

blood donations to help children suffering from **leukaemia**
dons** de sang pour les enfants atteints de **leucémie

15

blood donations for a **difficult births**
dons** de sang pour un **accouchement difficile

50

blood donations to save the lives of **road accident victims**
dons** de sang pour les **victimes d'accidents de la route

In partnership with the CTS and the HUG
En partenariat avec le CTS et les HUG

Seminars

MONDAY JULY 18, 2016

09:15 **BCD PlatForm** Physics with Heavy Ions
09:15 **Summer Student Lecture Programme Course** From Raw Data to Physics Results (3/3) **Main Auditorium**
10:20 **Summer Student Lecture Programme Course** Introduction to Statistics (1/4) **Main Auditorium**
11:25 **Summer Student Lecture Programme Course** Superconductivity and SC Magnets for the LHC Upgrade (2/2) **Main Auditorium**

TUESDAY JULY 19, 2016

09:15 **Summer Student Lecture Programme Course** SM Physics at Had. Colliders (1/3) **Main Auditorium**
10:20 **Summer Student Lecture Programme Course** Introduction to Statistics (2/4) **Main Auditorium**
11:00 **LHC Seminar** ALICE seminar **Council Chamber**
11:25 **Summer Student Lecture Programme Course** Heavy Ions (1/3) **Main Auditorium**

WEDNESDAY JULY 20, 2016

09:15 **Summer Student Lecture Programme Course** SM Physics at Had. Colliders (2/3) **Main Auditorium**
10:20 **Summer Student Lecture Programme Course** Introduction to Statistics (3/4) **Main Auditorium**
11:25 **Summer Student Lecture Programme Course** Heavy Ions (2/3) **Main Auditorium**
14:30 **ISOLDE Seminar** TBA **26 1 022**

THURSDAY JULY 21, 2016

09:15 **Summer Student Lecture Programme Course** SM Physics at Had. Colliders (3/3) **Main Auditorium**
10:20 **Summer Student Lecture Programme Course** Introduction to Statistics (4/4) **Main Auditorium**
11:25 **Summer Student Lecture Programme Course** Antimatter in the lab (1/3) **Main Auditorium**

FRIDAY JULY 22, 2016

09:15 **Summer Student Lecture Programme Course** Heavy Ions (3/3) **Main Auditorium**
10:20 **Summer Student Lecture Programme Course** Antimatter in the lab (2/3) **Main Auditorium**
11:25 **Summer Student Lecture Programme Course** Antimatter in the lab (3/3) **Main Auditorium**

MONDAY JULY 25, 2016

09:15 **Summer Student Lecture Programme Course** Beyond the Standard Model (1/4) **Main Auditorium**
10:20 **Summer Student Lecture Programme Course** Beyond the Standard Model (2/4) **Main Auditorium**
11:25 **Summer Student Lecture Programme Course** Triggers for LHC **Main Auditorium**

TUESDAY JULY 26, 2016

09:15 **Summer Student Lecture Programme Course** Beyond the Standard Model (3/4) **Main Auditorium**
10:20 **Summer Student Lecture Programme Course** Future Collider Technologies (1/2) **Main Auditorium**
11:00 **LHC Seminar** CMS seminar **Council Chamber**
11:25 **Summer Student Lecture Programme Course** Search for BSM Physics at Had. Colliders (1/3) **Main Auditorium**