CERN Bulletin

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A DUAL TECH GEM FOR FUTURE NEUTRINO DETECTORS

Innovative technologies for next-generation neutrino detectors are currently being tested in the CERN Neutrino Platform project WA105.

Installation of the WA105 cryostat. (Image : Maximilien Brice/ CERN)

The activities under way in the framework of the CERN Neutrino Platform are multiple and restless. Along with the refurbishment of ICARUS, another project is making great strides towards its completion: WA105. In spite of the not-so-expressive name, the technology being tested in this prototype is unprecedented.

WA105, presently at an advanced state of assembly at CERN, is a 3x1x1-metre, 25-tonne "dual-phase" liquid argon time projection chamber (DLAr-TPC) demonstrator. It has been conceived in the quest to solve the technological problems related to the next generation of neutrino detectors, whose dimensions need to be gigantic in order to thoroughly study the phenomenon of neutrino oscillations. Indeed, a major new international project called DUNE (Deep Underground Neutrino Experiment), will be made up of four such detectors, each one measuring approximatively 60x12x12 metres – that is, 50 times the size of ICARUS.

The dual-phase technology was developed by the European LAGUNA-LBNO consortium, with R&D efforts led by ETH Zurich for more than a decade. In a DLAr chamber, a region of gaseous argon resides above the usual liquid phase. Ionisation electrons drift up through the detector volume and are accelerated into the gaseous region near the top of the cryostat by a strong electric field. Here, large electron multipliers (LEM) amplify the signals by a factor of about 20 (that is, for every drifted electron, 20 electrons are produced), while a multilayer anode plane collects the charged particles and provides the spatial read-out. This type

(Continued on page 2)

A WORD FROM THE DIRECTOR-GENERAL

ESOF: SHOWCASING SCIENCE, DIVERSITY AND INCLUSIVITY

I can't begin a message to personnel without saluting the amazing performance of the LHC as the Geneva summer finally gets under way. Nevertheless, last week, I left CERN behind me to spend some time at the biennial EuroScience Open Forum, ESOF2016, Europe's biggest public-facing scientific event.

(Continued on page 2)

In this issue

NEWS

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A WORD FROM THE DIRECTOR-GENERAL

(Continued from page 1)

ESOF: SHOWCASING SCIENCE, DIVERSITY AND INCLUSIVITY

A keynote session featuring CERN DG Fabiola Gianotti, EMBL DG, Iain Mattaj, and ESO Director for Science, Rob Ivison, chaired by the BBC's Pallab Ghosh, debated the value of European collaboration in science. (Image: Matt Wilkinson Photography/ESOF 2016)

Launched in 2004 in Stockholm, ESOF had the bold ambition to become to Europe what the American Association for the Advancement of Science (AAAS) Annual Meeting is to the US: a vital forum for science and society. Twelve years on, I think it's fair to say that ESOF has achieved that goal. Over 3000 delegates attended this year's event in Manchester, representing the worlds of research, academia, policy, industry and media – not to mention the general public who were treated to a feast of intellectual entertainment from some of Europe's and the world's leading scientists.

I have had the pleasure to participate in ESOF meetings in the past. In 2014, the meeting was held in Copenhagen, where we highlighted the upcoming start of LHC Run 2. A highlight for me on both occasions was the very rewarding opportunity to have an informal meeting – "Pi(e) with the Prof", they called it in Manchester – with young students and researchers at the start of their careers from all across the continent. This year, a few high-school students came along, and I was very pleased that several young women attended the discussion around coffee, tea… and pie.

EuroScience, the founding organisation of ESOF, was established in 1997 as a grassroots organisation with the mission to become: *a voice for and to European scientists; an anchor point for all those who want to interact with a European scientific voice; a platform for policymakers to connect to scientists and scientific institutions at a European level; and a platform where scientists, politicians and other stakeholders can meet, discuss and advance societal, including ethical, issues concerning science and its applications.* These are laudable ambitions, and worthy of our support, particularly at a time when the concept of Europe is increasingly being called into question. In science, Europe works. In science, Europe is a world-leading force. It is therefore vital that European science reaches out to all of its publics, and ESOF is a vital part of this process. In an increasingly uncertain world, it is ever more important that the principles of diversity, inclusivity and peaceful collaboration be upheld.

For more information, read the article "CERN at ESOF 2016" published in this issue.

Fabiola Gianotti

A DUAL TECH GEM FOR FUTURE NEUTRINO DETECTORS

(Continued from page 1)

of detector has several technical advantages over the ICARUS-like, single-phase liquid argon TPC: the electrons can be drifted over a longer distance, the chamber is robust against sources of environmental electronic noise, and the efficiency of the three-dimensional reconstruction of the event is enhanced because the amplified charge signals can be shared between two independent charge collection planes.

The second demanding engineering task is connected to the cryostats of giant next-generation neutrino detectors. The solution has been found in the technology of tank ships transporting liquefied natural gas (LNG carriers). CERN is collaborating with the French enterprise Gaztransport & Technigaz (GTT), which owns the patent for a membrane-type containment system, whereby two cryogenic liners support and insulate the LNG cargo. The advantage of this system is that it's modular and it can be assembled to encase a large volume.

"For the cryogenic system, we also took advantage of CERN's long-standing know-how on the subject and close cooperation between the cryogenics teams at CERN and Fermilab," says André Rubbia, spokesperson of the WA105 project and co-spokesperson of the DUNE collaboration. "In order for the TPC to operate properly and drift electrons over long distances, an extreme degree of purity better than 0.1 parts-per-billion of the liquid argon is required," he continues. "The membrane cryostat is vital to insulate the volume from external air penetration and an effective cryogenic purification system is needed to prevent contamination from internal material."

The WA105 demonstrator has recently been inserted into the cryostat and the plan is to have it ready for operation in October 2016. This milestone will be a very important step for the DLAr-TPC, which so far has only been demonstrated on prototypes up to 250 litres. The next step will be to test a larger (300-tonne), full-scale engineering prototype for DUNE in the EHN1 test facility extension currently under construction in the North Area at CERN.

"After a decade of R&D efforts, the CERN Neutrino Platform is playing a very important role," Rubbia underlines. "It enabled the speeding up of the activities, also by attracting the manpower needed, and finally permitted the transition from laboratory R&D to the industrial-scale production needed for the next generation of long-baseline neutrino experiments," he concludes.

Stefania Pandolfi

ICHEP 2016: TO B(UMP) OR NOT TO B(UMP)

This week I'm in Chicago for the 38th International Conference on High Energy Physics, ICHEP 2016, hosted this year by the US particle physics community. While it became clear at the conference that the famous 750 GeV bump has flatlined, there's been a wealth of physics from CERN and around the world.

Everyone in their heart felt that the bump would turn out to be no more than a statistical fluctuation, while secretly hoping that it would be something new. Even the designer of the ICHEP 2016 logo cleverly hid a bump with a subtle question mark in the Chicago skyline – appropriately enough in Anish Kapoor's mysterious 'Cloud Gate' sculpture.

That question mark has now been resolved. Kapoor's sculpture returns to being just that, and the search for new physics goes on albeit further constrained as theorists revealed in the 400+ papers in the wake of the bump discussion. The highlight from CERN was undoubtedly the spectacular performance of the LHC, which has already delivered five times more data in 2016 than it did in all of 2015. This has, by necessity, been accompanied by equally spectacular performance by the experiments and the Worldwide LHC Computing Grid, WLCG, which is smashing all its previous records and straining the resources. The four major LHC experiments presented new results ranging from new Higgs measurements to extremely rare decay processes and new measurements on Quark Gluon Plasma. Some highlights from CERN included the exploration of the di-lepton and di-boson spectra at high masses, CP-violation in baryonic B-decays and common understanding between experiments of the suppression of charm production and the emergence of jets from the quark-gluon plasma. In the city of Chicago the ambitious plans for neutrino physics figured highly; the planning of long-baseline experiments is making good progress in the US and Japan. Gravitational waves still topped the list of most talked about physics following LIGO's discoveries announced earlier this year. The latter also was the topic of a much-acclaimed public lecture.

ICHEP is the most important gathering this year for our field, and it was good to see so many colleagues from all around the world in Chicago. The organisers made a particular effort in engaging young people in the scientific presentations. Every day saw some fifteen young scientists present their own results in exactly one minute on a single viewgraph. They succeeded impressively, setting high standards in conciseness and quality of lively presentation.

Eckhard Elsen,
Director for Research and Computing

LHC REPORT: A BREAK FROM LUMINOSITY PRODUCTION

The LHC has been in great shape over the last few months, delivering over 20 fb^{-1} of integrated luminosity before the ICHEP conference in Chicago at the beginning of August. This is not much below the 25 fb^{-1} target for the whole of 2016. With this success in mind, a break in luminosity production was taken for six days, starting on 26 July 2016, for a machine development period.

This year, 20 days of the LHC schedule are devoted to machine development with the aim of carrying out detailed studies of the accelerator. The 20 days are divided over five different periods, called MD blocks. They can be seen as an investment in the future, so the machine can produce collisions more efficiently in the months and years to come. A detailed programme is worked out for each MD block, whereby different specialist teams are assigned periods of four to twelve hours, depending on the topic, to perform their previously approved tests. The MD program continues 24 hours per day, as in normal physics operation.

One way of increasing the collision rate is to change the size of the beam at the interaction points in the centre of the experiments by changing the quadrupole settings on either side of a given experiment. During the first MD block, a novel way of doing this, known as ATS optics, was explored. This approach means that ever smaller beam sizes can be obtained in the future. The more the size of the proton bunches that make up the beam is reduced, the higher the chance of collisions.

Another area being studied is beam instability, a familiar operational problem. When beam intensity is increased, or a change is made to the way the accelerator is filled, the operations team has to adjust different machine parameters to prevent the beams becoming unstable. When instabilities arise, they can cause beam loss, which is automatically detected and can cause a beam dump to avoid any damage to the LHC. The relationship between the angle at which the beams collide in the centre of the experiments and beam stability is also being studied. The smaller the crossing angle, the better the chances for collisions and so higher instantaneous luminosities.

Another aspect of the current tests concerns the optimisation of the process for injecting proton bunches. This concerns both the beam instabilities at injection and the blow-up of the beam during the injection process.

After six days of study, the LHC resumed normal operation on 1 August 2016. Following the end of the MD period, the LHC resumed normal luminosity production. The last couple of weeks have, however, been interrupted by some technical problems in both the LHC and the injectors. Of note in the LHC are issues with the injection kickers and a potential inter-turn short in one of the main bending magnets. Nonetheless, good performance is being delivered, with the total number of bunches per beam now at 2220 – a high for the year.

From Monday, 22 August another four days of machine development are on the programme, to study the longitudinal behaviour of the beam, gain a deeper insight into beam stability and explore different means of increasing the luminosity.

Jan Uythoven for the LHC team

CERN AT ESOF 2016

CERN had a major presence at the ESOF2016 conference this week, largely in collaboration with our EIROforum partners. A keynote session featuring the CERN Director-General, Fabiola Gianotti, EMBL Director-General, Iain Mattaj, and ESO Director for Science, Rob Ivison, and chaired by BBC science correspondent Pallab Ghosh debated the value of European collaboration in science

The focal point of EIROforum's presence was a stand highlighting the societal benefit of EIROforum science. (Image: Matt Wilkinson Photography/ ESOF 2016)

A double session covered the science of the EIROs, with ATLAS physicist Claire Lee representing CERN, and there was a session exploring the ways that the EIROforum organisations create business value locally, with the leader of the Knowledge Transfer group, Giovanni Anelli, representing CERN.

The focal point of EIROforum's presence was a stand highlighting the societal benefit of EIROforum science. Side events linked to the stand discussed subjects such as working at the EIROs, business opportunities with the EIROs, and technological innovation at the EIROs. During her day in Manchester, the Director-General took time out for "Pi(e) with the Prof", a chance for young researchers at the start of their careers to meet leading researchers in an informal setting.

SESAME was also present at ESOF. As the machine's main ring nears completion in Jordan, the laboratory is on the verge of starting its research programme. The main ring magnets and power supplies were provided by the EC-funded CESSAMag project coordinated by CERN. A keynote session discussed the scientific and diplomatic opportunities that SESAME opens up for the region and its neighbouring countries.

James Gillies

CERN TOURS: MORE POPULAR THAN EVER

According to TripAdvisor, CERN is Geneva's top tourist attraction, welcoming almost 110,000 visitors per year.

The Visits Service received a TripAdvisor Certificate of Excellence for the quality of its tours. From left: Marc Tassera, Carole Ledoux, Vanya Guerre, Bernard Pellequer, Dominique Bertola, Yesika Romand, Chloé Pillonel, Alejandra Lorenzo Gomez. (Image: Jacques Herve Fichet/CERN)

Since the start-up of the LHC in 2008 and the discovery of the Higgs boson in 2012, CERN's visitor numbers have gone through the roof. On 15 July, we hit a record number of 755 visitors in one day (the average is around 400 per day). "This peak can partly be explained by the presence of participants in the International Physics Olympiad," says Bernard Pellequer, head of the Visitors and Local Engagement section. "A tour of CERN was part of their excursion programme and it was a great pleasure for us to show them around the Laboratory."

But CERN tours are not just for physics buffs: CERN has been listed on the TripAdvisor site since 2012, and at present tops the charts of both the 24 tours and the 28 museums listed for Geneva. CERN has also just received a 2016 Certificate of Excellence from TripAdvisor in recognition of the quality of its tours and the service it provides to visitors.

"Over 760 comments have been posted on the TripAdvisor site, mostly with a rating of 'Excellent' or 'Very good'," enthuses Bernard Pellequer. "These comments are a very useful tool for the Visits Service, as they help us to identify our audience and to respond to their expectations." With this in mind, the Visits Service has introduced individual guided tours, which are proving to be a great success: every morning the tour slots are fully booked in less than 5 minutes.

Anaïs Schaeffer

10,000TH TEACHER VISITS CERN

This year, the 10,000th teacher will visit CERN since its first teacher programme in 1998.

HST 2016 teachers with CERN Director-General Fabiola Gianotti in the CERN Council Chamber. (Image: Maximilien Brice/CERN)

This summer, CERN welcomed the 10,000th teacher to participate in one of its teacher programmes!

This milestone was achieved in this year's International High School Teacher (HST) programme, a three-week residential programme that saw 48 enthusiastic teachers flock from all over the world to help inspire young minds.

Taking place every July since 1998, the HST programme aims to increase teachers' knowledge on the cutting-edge particle physics research currently being carried out at CERN. It also opens up a whole new world of educational resources available for use by the teachers to inspire their students' curious young minds.

More information is available here: ***http://cern.ch/go/Cs6D***.

Kathryn Coldham

JOSÉ MIGUEL JIMÉNEZ RECEIVES ORDER OF ALFONSO X THE WISE

On 12 July 2016, José Miguel Jiménez, Head of CERN Technology Department, has been awarded a spanish civil decoration — an *encomienda* — of the Order of Alfonso X the Wise, for his outstanding experience in the field of research and scientific management in particle physics.

The ceremony took place at the National Library of Spain, in Madrid, on 12 July. From left: Marcial Marín Hellín, Secretary of State for Education, Professional training and Universities; José María Lassalle Ruiz, Secretary of State for Culture; Íñigo Méndez de Vigo y Montojo, Ministry of Education, Culture and Sport; José Miguel Jiménez, Head of CERN Technology Department; Carmen Vela Olmo, Secretary of State for Investigation, Development and Innovation. (Photo: ©Javier Martínez de la Torre, Minister of Education, Culture and Sport)

CERN Bulletin

COSMIC VIBES: CERN RAVES AT SUMMER FESTIVALS

This summer, CERN appeared at various festivals in the UK.

The inaugural Physics Pavilion at the 2016 WOMAD festival received over 3600 visitors. (Image: CERN)

This summer, CERN's outreach efforts took a step in a completely new direction as the group participated at various festivals.

Following an invitation from the European Science Open Forum 2016 held in Manchester, UK, to be part of the Bluedot Festival, we produced an hour-long musical presentation with a physics theme. This featured the "Cosmic Piano", created by Arturo Fernandez Tellez and Guillermo Tejeda Muñoz of ALICE, and a piece created from the sonification of LHC data by Domenico Vicinanza and Genevieve Williams, of Anglia Ruskin University.

On a much bigger scale, we (the outreach team) collaborated with the WOMAD Festival, to host its first World of Physics in the middle of the English countryside. The result was a three-day programme of talks including "What's the Matter with Anti-Matter?" by Lars Joergensen, and activities such as a "Build Your Own Cloud Chamber" workshop led by Alex Brown.

Altogether, the pioneering Physics Pavilion, run in collaboration with the University of Lancaster, the IOP and the STFC and curated by Professor Roger Jones of the University of Lancaster, received over 3600 visitors, and the organisers ended up turning people away as the Pavilion reached capacity. It generated considerable media attention, including news items on the BBC, ITV and German public radio, and much enthusiastic feedback from festival-goers, many of whom asked for it to return in 2017.

One member of the public told the BBC: "Sometimes there's a feeling that science is a bit dry and separate from the rest of life. They're making it really accessible to us. It's interesting, understandable and quite beautiful."

By going to the festivals, CERN's outreach programme succeeded in engaging people who had never been interested in physics before. I knew we'd got something right when a little girl raised her hand at the end of one session and asked the speaker "How old were you when you knew you wanted to be a physicist?"

Connie Potter

POKÉMON GO! OR NOT?

Have you already joined the hype surrounding the No. 1 iOS and Android app "Pokémon GO" and started hunting for wild virtual Pokémon while walking through the real world? Have fun and catch them all!!! But also take some physical and digital care!

If you haven't heard of "Pokémon GO", it is an iOS and Android game in which your virtual avatar has to hunt for cute and sometimes less cute little monsters, so-called Pokémon (if you are as old as me or have kids, yes, those GameBoy, TV Series, card-game Pokémon!). The ultimate goal is to find and collect all 150 different Pokémon species. Your smartphone's location information displayed on a Google map lookalike provides you with hints as to where to find them. Augmented reality is employed to project virtual Pokémon in your vicinity onto your smartphone's camera picture so that you can catch them by throwing "Poké Balls" at them. These items can be found at other locations, known as "Poké Stops". The more Pokémon you collect, the more powerful you become. No harm in that, eh?

True, from a health perspective, "Pokémon GO" is great as it encourages you to walk around, which is good for all of us. But there is a snag: the app does not know about places you must not go! Walking around while staring at your smartphone's screen already poses a safety risk. So watch where you are going! Roads. Stairs. Ditches. Open manholes. Ponds! Playing the app while riding a bike or driving (!) is stupid: it goes without saying. In addition, the app just embeds Pokémon where its algorithm deems them best suited. Arlington Cemetery, close to Washington D.C., has already asked players to refrain from playing the game on its premises. The same might be true for hospital wards. And, of course, for CERN: some buildings, caverns, tunnels and other locations on the CERN sites are definitely off limits for gaming. Don't hunt Pokémon in these locations as it might be dangerous to your health. Some other locations might be off limits as they are private property… Worse, some criminals have used the game to lure people to deserted places, to rob them of their belongings. Think of your safety first! Watch your surroundings, be sensible and don't get too immersed.

Digitally, there are also risks: "Pokémon GO" has not been made available in all countries, so you might think of downloading the app from dubious sources… But "dubious" already implies that you might get more than you asked for: a full compromise of your smartphone due to the app you downloaded being malicious (see "Android's Armageddon" for examples). Better to wait to download it from the legitimate and official iOS app store or Google Play! Furthermore, as with many other apps, the "Pokémon GO" app is constantly recording your location, which has an impact on your privacy. Finally, some particularly nefarious people have also jumped on the bandwagon. Malicious e-mails are flooding the Internet all the time and now the first "phishing" e-mails have appeared, luring players to click on fraudulent links.

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

ROBERTO PETRONZIO (1949 – 2016)

Our dear colleague Roberto Petronzio passed away on 28 July at the age of 67. He was a CERN fellow from 1977 until 1979, and then a staff member in the Theory division from 1980 until 1986. He played a significant role in our field as Professor at the University of Tor Vergata, as President of the INFN (2004-2011), and as a member of the CERN Council.

Roberto was a major contributor to the development of QCD. He was involved, among other projects, in the first complete calculation of the NLO anomalous dimensions, and in the resummation of soft gluon emission in partonic processes. He was also involved in the non-perturbative analysis of the theory. In particular, along with Cabibbo and Parisi, he was one of the first members of the APE collaboration, which managed to construct the famous series of supercomputers for numerical simulations. Together with Cabibbo and Martinelli, he proposed the use of lattice simulations to compute weak amplitudes. These results are of great importance in flavour physics, e.g. for B-physics studies at B-factories and at CERN for similar work carried out by the LHCb, ATLAS and CMS collaborations.

Roberto was well anchored in the Standard Model but always looking for harbingers of new physics. He had an eclectic knowledge of particle physics and related subjects. His legacy is also represented by several generations of brilliant young physicists spread across different laboratories and universities throughout the world.

He had a charming and wonderful personality and was a great asset to our community. He will be dearly missed.

His colleagues and friends

PROCEDURE FOR THE DELIVERING OF PERSONAL SHORT-TERM VISITOR DOSIMETERS

Update of the administrative procedure for delivering a personal short-term visitor dosimeter to associated members of CERN's personnel.

Associated members of the CERN personnel may request a short term visitor dosimeter if working only in *Supervised Radiation Areas* and for a period of less than two months in a calendar year. Such a dosimeter is delivered without the need to provide the usual regular documents: radiation passport, certificate from the home institute or medical certificate. Periodic verification will ensure that holders of these personal dosimeters do not exceed the maximum allowed personal dose for this type of dosimeter, which is the same as the limit for members of the public at 1 mSv per year.

From now on, the two-month period can be spread over a calendar year, offering greater flexibility to users coming to CERN for multiple short periods.

Please return unused dosimeters
Persons leaving CERN for a period of more than one month should return their dosimeter to the Dosimetry Service. A dosimeter can be obtained from the Dosimetry Service upon return without any further administrative steps or advance notice, as long as the assignment conditions are still met.

The Dosimetry Service strongly discourages having dosimeters read by third parties or secretariats during long absences (more than one month). During a long-term absence, the dosimeter may be used by other users, considerably reducing the overall costs for CERN. Furthermore, recording the doses received by people who are not physically at CERN introduces bias to the reports transmitted to the Host State authorities, which must be avoided.

We thank you in advance for your cooperation.

Dosimetry Service
Building 55/R-004
Tel: 72155
Opening hours 8.30 a.m. – 12 noon
Closed in the afternoon
http://cern.ch/dosimetry

ANNUAL REPORT 2015 FROM THE HUMAN RESOURCES DEPARTMENT

The 2015 Annual Report from the Human Resources Department concerning the settlement of disputes and discipline under Chapter VI of the Staff Rules and Regulations.

Introduction

The 2015 Annual Report under Chapter VI ("Settlement of Disputes and Discipline") of the Staff Rules and Regulations serves to report:

- cases of submission of requests for review;
- internal appeals;
- complaints before the Administrative Tribunal of the International Labour Organization (ILOAT); and
- cases in which disciplinary action was taken.

Requests for Review and Internal Appeals

Under Article S VI 1.01 of the Staff Rules, members of the personnel may challenge an administrative decision by the Director-General where it adversely affects the conditions of employment or association that derive from their contract or from the Staff Rules and Regulations.

If permitted by the Staff Rules and Regulations, a decision may be challenged internally within the Organization:

- through a review procedure; or
- through an internal appeal procedure. In this case, the Joint Advisory Appeals Board (JAAB) shall be consulted by the Director-General prior to taking any final decision on the merits.

Complaints before the ILOAT

A decision may be challenged externally by the filing of a complaint before the ILOAT:

- when internal procedures have been exhausted and the decision is final or,
- when an internal challenge is not permitted by the Staff Rules and Regulations.

Requests for review

From 1 January 2015 to 31 December 2015, there were three requests for reviews of administrative decisions taken by the Director-General.

1. One staff member challenged the rating of their performance as "*meritorious*" and the granting of one periodic step at the outcome of the 2015 annual advancement and promotion exercise.

2. One staff member contested the decision concerning their promotion from Ec to Fa (i.e., rather than into Fb) at the outcome of the 2015 annual advancement and promotion exercise.

   Internal reviews for both matters were carried out by the Human Resources Department and the Director-General decided to maintain these administrative decisions.

3. One retired staff member contested a promotion decision taken in connection with the 2003 Technical Engineers and Administrators Careers Committee (TEACC) on the basis of a perceived lack of neutrality. This request was deemed to be irreceivable.

Internal appeals

From 1 January 2015 to 31 December 2015, two internal appeals were submitted to the Director-General. Both appeals challenged the administrative decisions to award a periodic step further to the outcome of the 2015 annual advancement and promotion exercise. Following recommendations by the JAAB to confirm the Organization's impugned decisions, the Director-General followed the JAAB's recommendations and confirmed the Organization's original decision to award a periodic step.

Complaints before the ILOAT

From 1 January 2015 to 31 December 2015, one complaint was filed before the ILOAT. The complaint concerns the Director-General's decision to terminate the employment contract of a CERN fellow following the recommendation by the Joint Advisory Disciplinary Board. The final decision on this complaint is not expected before 2017.

Disciplinary Action

Under Article S VI 2.01 of the Staff Rules, the Director-General may take disciplinary action against members of the personnel who,

whether intentionally or through carelessness, are guilty of a breach of the Staff Rules and Regulations or of misconduct that is to the detriment of the Organization.

Article S VI 2.02 of the Staff Rules stipulates that, having regard to the gravity of the breach or misconduct in question, the disciplinary action may be:

- a warning;
- a reprimand;
- suspension without remuneration or pay for a period not exceeding six months,
- loss of one or more steps; or
- dismissal.

The Joint Advisory Disciplinary Board (JADB) shall be consulted by the Director-General prior to taking any disciplinary action other than a warning or a reprimand (Article S VI 2.04 of the Staff Rules).

In cases of particularly serious misconduct, the Director-General may decide to dismiss without notice and without consulting the JADB (Article S VI 2.05 of the Staff Rules).

Warnings, reprimands and site bans:

In 2015, six warnings, two reprimands and three site bans were issued as follows:

- Three warnings for refusal to comply with security guard controls and demonstrating discourteous behaviour toward the security guards.
- One warning for misconduct (i.e., inappropriate behaviour toward a staff member).
- One warning for defacing and removal of LGBT posters on the CERN site.
- One warning for violation of building access and safety rules.
- One reprimand, with additional measures, for moral harassment, following an investigation under Operational Circular No. 9.
- One reprimand for alcohol consumption during duty hours and for discourteous behavior.
- Three retirees were issued with temporary site bans following refusal to comply with security guard controls and for discourteous behaviour toward the security guards.

The Joint Advisory Disciplinary Board (JADB):

From 1 January 2015 to 31 December 2015, the JADB was convened to study two matters:

1. Examination into incidents of alleged computer hacking which, following the JADB recommendation, resulted in the termination of the employed member of personnel's employment contract.

2. Examination into obtaining personal benefit from CERN material, which following an investigation under Operational Circular No. 10 and subsequent examination and recommendation by the JADB, resulted in the Director-General's decision to withdraw one step.

Dismissal notified during the probation period:

In 2015, two staff members' contracts were terminated following dismissal notified during the probation period (as per Article S II 5.01 g of the Staff Rules).

Dismissal without notice:

In 2015, a User's contract of association with the Organization was terminated for non-repayment of debts to the Organization.

HR Department

Take note

NEWS REGARDING MOBILITY AT CERN

CERN Bikes
CERN owns a fleet of more than 500 bikes, managed by the Mobility Centre (bdg. 6167). Members of CERN personnel (MPE and MPA) can use these free of charge during work-related activities at CERN (a security deposit is requested). Between 1st of June to 30th September anyone, except Summer Students, who wish to benefit from this service shall pay 1 CHF per day.

As from the 1st of August, the CERN bike rental requests are done via the Service Now (SNOW) Portal.

For more information, please consult: **http://cern.ch/bike-rental.**

CERN Cars
More than 60 vehicles are available for rent by members of personnel (MPE and MPA) at the Mobility Center (bdg. 6167). As from the 5th of September you can submit reservation requests via the new EDH Car Rental Request document.

As a reminder, the Terms of Use are the following:

- Operational Circular n° 4 (rev.1), governing the use of CERN vehicles;

- Any use of the service must be authorised by the concerned Head of Department or Team Leader (Car Driving Authorisation);

- The driver must have an identifier to be able to get into the vehicle. The identifier is to be requested from the Departmental Secretariat;

- For any use of the vehicle outside the "local zone", a Mission Order is necessary (annual or occasional).

For further information, please consult our web pages: **http://smb-dep.web.cern.ch/en/Mobility**.

Mobility Car sharing – Private Offer
To simplify your private travel, two parking spots are now reserved for Mobility vehicles at the Globe parking lot. The company Mobility proposes yearly subscriptions at 50% off for CERN personnel. In order to benefit from this service, you can apply for a subscription directly from the company Mobility to receive your private Mobility Card. CERN is not involved in the actual transaction.

Please note that the "Professional Mobility Card" distributed by the CERN Car Sharing Service does not give you access to the public Mobility service in Switzerland.

SMB Department
CERN Mobility Center: 72228 (bdg. 6167)
CERN Garage: 72042 (bdg. 130)

CLOSURE OF THE FLAGPOLE CAR PARK FROM 1 TO 5 SEPTEMBER

Please note that, owing to the flag-raising ceremony to mark the accession of Romania to the status of CERN Member State, the flagpole car park will be inaccessible from the morning of 1 September 2016 until around 1 p.m. on 5 September 2016.

Users of the car park are therefore invited to remove their vehicles before 1 September and to use the Globe car park instead.

ATTENTION: any vehicle left in the car park will be removed at the owners expense.

SMB Department

NEW SIGNAGE IN THE "*LES CÈDRES*" CAR PARK

Please note that new signage is now in force in the *Les Cèdres* car park. **The car park may only be entered from Route Scherrer and exited onto Route Bohr**, as indicated by the signs.

SMB Department

GENERAL PURPOSE (OFFICE) NETWORK REORGANISATION

On Saturday 27 August, the IT Department's Communication Systems group will perform a major reorganisation of CERN's General Purpose Network.

This reorganisation will cause network interruptions on Saturday 27 August (and possibly Sunday 28 August) and will be followed by a change to the IP addresses of connected systems that will come into effect on Monday 3 October.

For further details and information about the actions you may need to take, please see: **https://information-technology.web.cern.ch/news/general-purpose-office-network-reorganisation**.

IT Department

NEW LOCATION OF THE LEARNING AND DEVELOPMENT GROUP

The HR-LD group would like to inform you that, owing to renovations, the service currently located on the fourth floor of Building 5 will be moving to the first floor of Building 653 for around eight months from September 2016.

Please note as well that, from mid-September 2016, the language courses run by CERN will take place in Building 693 (next to the Technical Training Centre, Building 593), instead of on the fourth floor of Building 5.

The move will take place in two phases:

1. Language courses: Thursday, 1 and Friday, 2 September 2016
2. HR-LD group: Monday, 5 and Tuesday, 6 September 2016

Communication by phone and e-mail may be disrupted during this time.

The temporary office numbers of those moving will be shown in the CERN Phonebook.

Thank you for your understanding.

The Learning and Development group

BIKE TO WORK SAFELY

As the fine weather appears and CERN fills up with summer visitors, the number of people cycling to and from CERN and around the CERN campus rises dramatically – and so does the number of accidents involving bicycles. So far this summer, there have been 10 reported accidents, all of which could have been avoided. There are many things that road users of all kinds can do to make cycling safer and stop that number rising any further.

If you're on a bike, make sure you're visible by using lights and wearing high-visibility clothing. Wear a helmet, and remember that you are subject to the same rules of the road as any other vehicle. There's also an online course in the SIR application on 'Road traffic-bike riding', which is freely available for you to follow.

If you're a motorised vehicle user, be sensitive to cyclists. Bike lanes and cycle paths are for cyclists, so leave them clear, and when overtaking a bike, leave plenty of room. Let's make cycling safer for everyone.

Simon Baird

ENTREPRENEURSHIP AS A CAREER PATH

After a summer break, the CERN Entrepreneurship Meet-Ups (EM-Us) will start again on 23 August 2016. The meet-ups are open to all those who are interested in learning more about entrepreneurship, with or without a particular project in mind.

"The meet-ups are about connecting with the community, within CERN, but also beyond," says Giovanni Porcellana, an EM-U enthusiast who works in the Knowledge Transfer group at CERN and is also a nuclear engineer, entrepreneur and active member of the World Economic Forum's Global Shapers Community. "Anyone can show up; you don't have to be a seasoned entrepreneur!"

The Entrepreneurship Meet-Ups are organised every other week at CERN. For more information and to sign up to the mailing list, read more here: **http://cern.ch/kt/meet-up.**

Knowledge Transfer group

CONFERENCE: SEEING TWO BLACK HOLES MERGE (WITH GRAVITATIONAL WAVES!) | 14 SEPTEMBER | UNI DUFOUR

GW150914: the first direct observation of gravitational waves from the inspiral and merger of two black holes - Conference by Prof. Bruce Allen, Albert Einstein Institute Hannover.

"Seeing two black holes merge (with gravitational waves!)"
Uni Dufour - Auditorium U300
Wednesday, 14 September at 7 p.m.

Bruce Allen. (Photo: ©F. Vinken/MPG)

Abstract: On 14 September 2015, the advanced LIGO gravitational wave instruments detected the gravitational wave signal emitted as two black holes, about one billion light years away from Earth, made a final few orbits around each other then merged together. This was big news around the world, because scientists have tried to make such observations for more than half a century. Before they merged, the two black holes were about 29 and 36 times as massive as the sun; after the merger was complete, a single black hole about 62 times the sun's mass was left behind. I'll describe what black holes are, how they (and other accelerated masses) produce gravitational waves, and how those waves are detected. I'll also discuss some of the behind-the-scenes details of this discovery, and why we are convinced that this signal, called GW150914, is real. For physics enthusiasts, I'll explain how the main properties of the black holes can be directly determined from the observational data and also why we are convinced that no other explanation is possible

CONFERENCE: PROBING THE WARPED SIDE OF OUR UNIVERSE WITH GRAVITATIONAL WAVES AND COMPUTER SIMULATIONS | 16 SEPTEMBER | UNI DUFOUR

"Probing the warped side of our Universe with gravitational waves and computer simulations", by Kip Thorne, recipient of the Tomalla Prize for Gravity 2016.

Uni Dufour - Auditorium U300
Friday, 16 September at 6 p.m.

Kip Thorne. (Photo: ©Jon Rou)

Abstract: A half century ago, John Wheeler challenged his students and colleagues to explore Geometrodynamics: the nonlinear dynamics of curved spacetime. How does the curvature of spacetime behave when roiled in a storm, like a storm at sea with crashing waves. We tried to explore this, and failed. Success eluded us until two new tools became available: computer simulations, and gravitational wave observations. Thorne will describe what these have begun to teach us, and he will offer a vision for the future of Geometrodynamics.

Seminars

SUNDAY, 28 AUGUST 2016

11:00 **CERN School of Computing 2016**