

## HL-LHC EQUIPMENT INSTALLED ON BOTH SIDES OF THE ALICE EXPERIMENT

**Novel cryostat units have been installed for the High-Luminosity LHC to allow insertion of room-temperature collimators in the LHC's 1.9 K cryostats**



*Installation of a bypass cryostat at LHC Point 2, where the ALICE experiment is located. These new bypass cryostats have been designed to host a collimator (Image: CERN)*

The upgrades performed during Long Shutdown 2 (LS2) will allow the ALICE experiment to operate at higher luminosities than before, starting from the next run of the LHC. A higher luminosity means a higher number of collisions in the detector every instant. Yet, during heavy-ion collisions, which is the speciality of the ALICE experiment, a wider variety of particles are generated than in proton collisions. And some of these particles escape from the detector and fly alongside the beam trajectory. Two additional collimators must therefore be installed around the experiment, one for each exiting beam, to remove the

particles deviating from the beam trajectory before they can reach the superconducting magnets. Indeed, particles hitting a magnet cooled down at 1.9 K (-271 °C) cause it to heat up, resulting in a loss of its superconducting state.

To host these collimators, two innovative cryostat units have been inserted along the continuous cryostats of the LHC, on both sides of LHC Point 2, where the ALICE experiment is located.

*(Continued on page 2)*

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# HL-LHC EQUIPMENT INSTALLED ON BOTH SIDES OF THE ALICE EXPERIMENT

These units allow a collimator that has to operate at room temperature to be inserted along the beam lines, while still ensuring continuity of all the other lines of the magnets system: that is why they are called *bypass* cryostats. This upgrade is part of the High-Luminosity LHC (HL-LHC) project, whose first components have already been put in place in the LHC tunnel during the first part of LS2.

"These new bypass cryostats have been designed to host a TCLD (Target Collimator Long Dispersion suppressor) collimator, while connecting two adjacent cryostats to ensure the continuity of the vacuum, the cryogenic lines and the superconducting electrical cables," explains Délio Ramos of the TE department, project engineer responsible for the magnet cryostats. The same type of bypass units will be used around LHC Point 7 for the installation of two TCLD collimators: in this case, they will be housed between two new 11-Tesla superconducting dipole magnets, which are among the most innovative equipment to be installed for HL-LHC during LS2.

At the beginning of the year, both the bypass cryostat units have been installed and

interconnected and the first collimator has been installed on one side of ALICE; the second one will take up residence later this year. These collimators, which were developed alongside the new bypass cryostats, are much more compact than standard collimators. Nonetheless, a pre-existing 13-metre-long LHC cryostat unit, so called *connection* cryostat as it ensures continuity between adjacent magnets, had to be replaced by two new ones, of a new design. These new connection cryostats are shorter (around 5 m long each) so that they can be placed, with the bypass cryostat in between, within the original 13-metre allocated slot.

Like every connection cryostat, these new short connection cryostats ensure the continuity of electrical powering, cooling and vacuum in the magnet system, though they do not contain magnets. "As for the previous connection cryostats, the new short ones also have to ensure a beam-line supporting and alignment which guarantees a positioning accuracy of within 0.5 mm over the cryostat's length," explains Arnaud Vande Craen, the TE department's engineer-in-charge of connection cryostats. "We had to develop a smaller

version of these connection cryostats fitted with an interface that is compatible with the bypass." The new short connection cryostats have been developed and manufactured in three years.

This project has been carried out thanks to collaboration between various teams in the Accelerators and Technology sector, which comprises the BE, EN and TE departments.



*This new connection cryostat is around 5 m long. It has been designed to be connected to a bypass cryostat (Image: CERN)*

Anaïs Schaeffer

## OPEN SCIENCE AGAINST COVID-19: HOW ZENODO AND OPENAIRE SUPPORT THE SCIENTISTS

Zenodo and OpenAIRE are contributing to the European Commission call for action with what they do best – preserving and sharing all COVID-19-related datasets, software, preprints and other research objects

*(Image: CERN)*

CERN, with co-funding from the European Commission, has long invested in Zenodo, a free repository for storing and sharing data, software and other research artefacts. Intended to be used beyond the

high-energy physics community, Zenodo taps into CERN's long-standing tradition and know-how in sharing and preserving scientific knowledge for the benefit of all. It is hosted at CERN and provides the wider scientific community with the option of storing its data in a non-commercial environment and making it freely available to society at large.

With the COVID-19 outbreak necessitating an extraordinary collaborative effort from the scientific community and requiring scientists to act fast in sharing results across disciplines and across borders, Open Science and the tools needed

to realise it are more essential and critical than ever.

Consequently, together with OpenAIRE, the Open Access Infrastructure for Research in Europe, Zenodo responded to the call by the European Commission for synchronised action and collaboration among the important initiatives in the European Open Science Cloud (EOSC) in order to facilitate efforts by scientists worldwide working relentlessly to stop the pandemic.

Zenodo and OpenAIRE are today contributing to the call for action with what they do best – preserving and sharing

all COVID-19-related datasets, software, preprints, and any other research objects that can help the scientific community to find a breakthrough solution to this universal problem.

Immediate actions were taken in March. The first was the creation of a COVID-19 Research Community on Zenodo, endorsed by the European Commission. The community content, which is automatically fed into the OpenAIRE Open Research Gateway, is currently under development by OpenAIRE and will result in a single point of entry for all research results and other useful resources for the Coronavirus disease (COVID-19) and SARS-CoV-2. A team of experts nominated by OpenAIRE has also been created to curate the COVID-19 commu-

nity. Zenodo is also adding a data curator (@StephvandeSandt) to scout for further COVID-19 uploads outside the community and coordinate the COVID-19 curation efforts on Zenodo with those of other teams worldwide. In addition, COVID-19-related support requests are prioritised and Zenodo's support can further offer, upon request, liberal quota increases (beyond the current limits of 50 GB), one-on-one dedicated support via chat with Zenodo staff, and help with automated uploads to Zenodo of large datasets. Finally, Zenodo's home page has been revamped to make sure that COVID-19 research objects and communities get the necessary visibility.

Zenodo encourages anybody willing to help improve its COVID-19 content (in any way, for example by displaying rele-

vant information more prominently, curating datasets, or even improving Zenodo features) to get in touch and share their feedback.

#### *Curation team for the Coronavirus Disease Research Community*

The curation team is reachable via the following e-mail address for further clarification or information: covid19@openaire.eu.

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*For more information on the "CERN against COVID-19" taskforce, visit: <https://against-covid-19.web.cern.ch/>.*

## **MAITE BARROSO LOPEZ: CERN IT DURING THE LOCKDOWN, STRIKING A WORK–LIFE BALANCE**

As in previous weeks, a member of the management team addresses the CERN community to share their thoughts on teleworking.

Maite Barroso Lopez, Deputy Head of the IT department, describes the exceptional

measures implemented by her department to facilitate teleworking for members of the CERN community, and reiterates the importance of finding a balance between one's private and professional lives.

Find useful computing tools for teleworking here (<https://computing-blog.web.cern.ch/2020/03/useful-tools-for-teleworking/>).

Video recorded on 16 April 2020. (<https://videos.cern.ch/record/2715369>)

## **COVID-19: MAKE YOUR TELEWORK SPACE MORE ERGONOMIC**

#### **The Occupational Health Service reminds you of the rules to follow to make your work or telework space as comfortable and safe as possible**

Last week, CERN's Occupational Health Service published eight tips to help you stay in good mental and physical health during the lockdown. In this article, it offers some advice on optimising the ergonomics of your telework space, as teleworking may be a brand new adventure for you...

It's very tempting to grab your laptop and mobile phone and work on the sofa or even in bed. Bad idea. Beware of the inevitable onset of lower back pain, a stiff neck and tendonitis. People who telework are not immune to musculoskeletal and visual problems; in fact, they are predisposed to develop them.

So, what can you do?

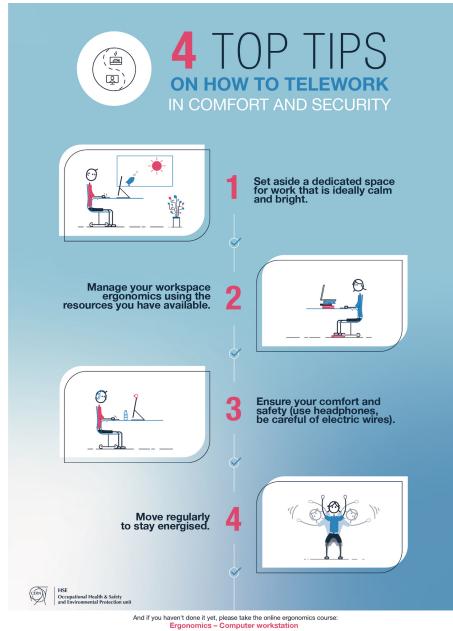
- If possible, set up a special teleworking area that is bright, quiet and, ideally, in a room that is set apart from other living areas, in order to keep your professional and private lives as separate as possible, especially if you live with children.
- Follow the general principles of ergonomics. Whether you're working on a laptop or a desktop computer, at home or in the office, the rules are the same. Use all the means available to you to make the necessary adjustments.
- For improved comfort, use a headset or headphones for videoconferences.
- Your electrical set-up is also important: it's not always easy to keep your cables tidy at home, but, to prevent accidents, try to avoid tangling them and keep them out of the way.
- Of course, keep moving as much as possible! Don't forget to set aside some time for physical exercise.
- And, if you haven't done so yet, complete our online training course on workstation ergonomics!

If you need any advice, please don't hesitate to contact us at [medical.service@cern.ch](mailto:medical.service@cern.ch) or [working.conditions@cern.ch](mailto:working.conditions@cern.ch) (if necessary, you can attach a photograph of your work-

station to your message – we would be delighted to advise you).

Get your sports kit ready – next week, we'll be exercising with Activ Santé!

The Medical Service



(Image: CERN)

## VIRTUAL LECTURES FOR SCHOOLS

**The CERN Visits service is offering interactive virtual lectures to schools whose visits have been cancelled due to the lockdown**

The Visits service has come up with the idea of replacing planned CERN school visits with virtual lectures, modelled on the measures implemented by many schools worldwide to enable pupils to continue to learn despite the lockdown.

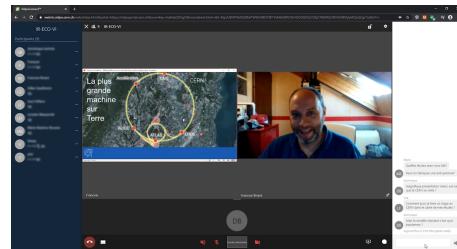
The suspension of guided tours, which has been in force since the beginning of March due to COVID-19, is particularly affecting school groups, who represent more than half of guided tour participants.

For the time being, these virtual lectures are restricted to secondary schools that had previously registered for a guided tour. They are held over the Vidyo system, which enables classes of pupils aged 16 and

above to tune in from home using a simple web browser.

The lectures, which are available in several languages, are given by official CERN guides who have received the necessary training. To make them as interactive as possible, they include not only a general presentation of the Organization, but also a question-and-answer session using the online Vidyo discussion tool.

The first lectures were held last week and the feedback has been very positive. Many more schools whose visits had to be cancelled have been contacted with a view to organising more lectures in the coming weeks.



François Briard of the Visits service gave a virtual lecture for pupils of a school in Bagnols-sur-Cèze (France) on 16 April (Image: CERN)

Marie Bouvier

# Official communications

## TRAVELLING TO SWITZERLAND FOR HEALTHCARE REASONS: PROCEDURE LIGHTENED

**The Swiss authorities have lightened the procedure for entry into Switzerland to receive medical treatment**

Entry into Switzerland is still restricted due to the COVID-19 pandemic. Only Swiss citizens, holders of a residence permit in Switzerland (including a FDFA legitimisation card), and persons with a certified professional reason for entering Switzerland may enter the country.

Non-Swiss citizens and persons not holding a valid Swiss resident permit may still not, in principle, travel to Switzerland to receive medical treatment.

However, exceptions may be granted in particular when a person is in a situation of absolute necessity. The continuation of a required medical treatment that has begun in Switzerland or abroad is now a ground for absolute necessity stated in the Directive of the State Secretariat for Migration (last updated on 16 April 2020).

The person concerned must therefore be able to present, when crossing the border, a certificate issued and signed by the

Swiss treating doctor stating that the patient must imperatively continue their medical treatment and indicating the dates of the scheduled appointments.

The statement from a doctor that suspending the treatment is life-threatening, is no longer required, neither is the request to the Swiss mission (see previous announcement from 7 April 2020).

*Host States Relations service*

## Announcements

### NO LOCKDOWN FOR BLOOD DONATION

**Blood donation needs to continue at all times, and the various organisations responsible are adapting their approach in order to maintain this essential link in the healthcare chain**

Every year, CERN organises several blood donation sessions. Due to the COVID-19 pandemic, the session scheduled for 1 April 2020 was cancelled. Nonetheless, blood donation needs to continue at all times, and the various organisations responsible are adapting their approach in order to maintain this essential link in the healthcare chain.

If you are eligible to donate blood (the criteria are given on the websites indicated below), you are encouraged to do so, even in the current circumstances. The institutions organising blood donations in France and Switzerland have taken the necessary

measures to protect donors with respect to the COVID-19 risk.

People who have had a confirmed coronavirus infection during the last four weeks and those who are in close contact with patients who have had a confirmed coronavirus infection during the last two weeks are obviously not authorised to give blood at the present time.

See below for further information on how and where you can give blood.

#### If you live in France:

Several donation sessions will be held in the Pays de Gex in the coming weeks:

1. Wednesday, 6 May – 4.00 p.m. to 7.00 p.m. – *Salle des fêtes* in Thoiry
2. Tuesday, 19 May – 3.00 p.m. to 7.30 p.m. – Divonne-les-Bains town hall
3. Wednesday, 3 June – 4.00 p.m. to 7.30 p.m. – *Maison des Associations* in Péron

You can also go to the permanent blood donation centres in Annecy and Annemasse.

For all donations made before the end of the lockdown, appointments must be arranged in advance by calling +33 4 50 87 69 70. This applies to all donation sessions (i.e. whether at the donation centres or at one of the temporary venues).

When travelling to the donation venue, you must be in possession of the certificate of special dispensation ("attestation de déplacement dérogatoire"), on which box number 4 ("Déplacements pour motif familial impérieux, pour l'assistance aux personnes vulnérables ou la garde d'enfants" - Travel for urgent family reasons, to assist vulnerable people or for childcare purposes) must be ticked.

For more information, see the website of the French blood donation service. This website includes the dates of upcoming donation sessions and an eligibility test that you can use to determine whether you can give blood. **Steps have been taken to ensure that the appropriate measures to prevent the spread of the disease are respected** and that donors, volunteers and staff are protected.

#### If you live in Switzerland:

Three donation sessions will be held in the coming weeks:

1. Wednesday, 29 April – 3.00 p.m. to 7.30 p.m. – *Salle du Rondeau* in Carouge
2. Wednesday, 6 May – 4.00 p.m. to 7.30 p.m. – *Ecole de Vernier Place*
3. Thursday, 7 May – 3.00 p.m. to 7.30 p.m. – Satigny town hall

You can also go to the Blood Transfusion Centre at the HUG (Geneva University Hospitals):

- with an appointment booked via: [dondusang-rendezvous.ch](http://dondusang-rendezvous.ch)
- or without an appointment:

- on Mondays, Tuesdays, Wednesdays and Fridays between 7.30 a.m. and 3.30 p.m.
- on Thursdays between 11.00 a.m. and

7.00 p.m.

- on the first and third Saturday of each month between 8.30 a.m. and 12 noon

**Public donation sessions are open to all donors. Steps have been taken to ensure that the appropriate measures to prevent the spread of the disease are respected** and that donors, volunteers and staff are protected.

For further information, contact the Blood Transfusion Centre on +41 (0)22 372 39 01 or visit its website, which provides a schedule of upcoming donation sessions and the compulsory medical questionnaire, which you can print prior to the session. (If you are not able to print the document, a copy will be provided at the venue.)

**Don't forget: we can all save lives. Giving blood means saving a life. Thank you for your generosity.**

## EASISCHOOL 3: SCHOOL ON APPLIED SUPERCONDUCTIVITY - APPLY NOW!

The EASITrain project, an EU-funded Marie Skłodowska-Curie (MSCA) training network (ITN), organises its third autumn school (EASISchool 3) from 28 September to 9 October 2020 in Genoa, Italy.

During the two weeks, participants will gain unique insights on superconductivity applications that will help accelerate their careers. The school offers a unique opportunity to interact with leading experts from academia and industry. The programme includes advanced superconductivity lecture, exposure to the industry and visit facilities such as CNR-SPIN where innovative materials are explored well as ASG's factory, one of the world's leading companies in applied superconductivity with more than 60 years of experience.

Participants will receive specialised training sessions covering the domains of **superconducting devices, sensing and quantum computation , RF supercon-**

**ductivity and accelerating cavities, superconducting magnets design, modelling and building.** The courses will take place at CNR – SPIN, Genoa. A dedicated student's workshop will be organised at the Physics Department of the University of Genoa on 8 and 9 October.

EASISchool 3 is open up to 30 external participants for the whole training period. The registration fee is 250 € . It includes attendance of academic lectures, visits, participation in social events, organising workshop on transferable skills training.

Participants will enjoy a rich social programme getting plenty of opportunities for networking. It also includes a public event "Genoa for superconductivity, superconductivity for us" that will be hosted on 30 September at the "Carlo Felice" theatre. More details about the school programme can be found on: <http://EasiSchool3.web.cern.ch>.

**Registration deadline is June 30, 2020. Apply Now!**



# EXPLORE CERN'S WEALTH OF RESOURCES #3

The CERN community is not short of resources... and now is the ideal time to take advantage of them!



The two short VR clips about CERN have already made a hit in local events (Image: CERN)

The CERN community is not short of resources... and now is the ideal time to take advantage of them! Here are some new ideas for activities that can entertain, inform or educate during lockdown.

- A few of the S'Cool Lab educational activities for teenagers can be made at home: try the Particle Physics Board Game, the Quark Puzzle,

the Bubble Chamber to analyse tracks and the Particle Identities quiz. If you have a 3D printer at home, you can find more activities here (<https://scoollab.web.cern.ch/classroom-activities>).

- Discover CERN in Virtual Reality with the two short clips *LHC* and *CMS* and *LHC Grid Computing*. You can view them in a browser or, for a better experience, on your VR device.
- Do you want to learn more about accelerators? On the CERN Accelerator School (CAS) website, you can find slides and proceedings of almost all past courses. You can also watch the recordings of the 2016 Introduction to Accelerator Physics course, which includes over

30 lectures.

- Watch the great lecture "The Particle World: an introduction to particle physics" by Tara Shears to discover the basics of CERN's particle physics in an accessible way (part 1, part 2, part 3). Many other interesting Summer Students lectures are available online here (<http://summer-timetable.web.cern.ch/summer-timetable/>).

For more resources, consult *Explore CERN's wealth of resources #1* and *#2*.

*If you would like to share other CERN resources or initiatives with the community, don't hesitate to contact us at writing-team@cern.ch.*

## ACCESS TECHNICAL STANDARDS DURING ACCESS RESTRICTIONS

You need to read a standard for your work. The Library is here to help!

At CERN, many projects imply the use of national and international standards. CERN Library maintains a collection of more than 13,000 standards available on CDS for the CERN community.

In addition to the collection available on CDS, CERN has access to a large collection of IEEE standards, available on the IEEE Xplore platform as well as many standards and specifications in Electronics.

If you need a standard which is not available at CERN, the Library can acquire

it on your behalf. Please fill this form ([https://cds.cern.ch/ill/purchase\\_request\\_step1?this\\_edition\\_only=No&isbn=&year=&edition=&budget\\_code=&author=&publisher=&period\\_of\\_interest\\_from=&standard\\_number=&title=&language=&additional\\_comments=&cash=No&period\\_of\\_interest\\_to=&recid=&place=&type=acq-standard](https://cds.cern.ch/ill/purchase_request_step1?this_edition_only=No&isbn=&year=&edition=&budget_code=&author=&publisher=&period_of_interest_from=&standard_number=&title=&language=&additional_comments=&cash=No&period_of_interest_to=&recid=&place=&type=acq-standard)) (you will need to provide a budget code).

The standardization community has worked together to make standards useful for the COVID-19-related research freely

available, the list of those standards is available on the SNV website (Swiss Association for Standardization), as well as on IEC (International Electrotechnical Commission) and ISO (International Standardization Organization) websites.

*For any questions, do not hesitate to contact us: library.desk@cern.ch or via Mattermost.*

*CERN Library*

# VIRTUAL CONVERSATION WITH FABIOLA GIANOTTI ON MULTILATERALISM IN THE TIME OF COVID-19

On the occasion of the International Day of Multilateralism, the UN Office at Geneva organizes a virtual conversation between students and leaders of key international organizations on 24 April 2020 from 10.30 a.m. to 12.30 p.m.

The conversation will address questions on the impact of the COVID-19 crisis on multilateral cooperation and the need for global solidarity during and after the crisis.

In addition to CERN Director-General Fabiola Gianotti, speakers will include

other leaders of international organizations based in Geneva, including IPU Secretary-General, Martin Chungong, ILO Director-General Guy Ryder, UNOG Director-General Tatiana Valovaya and ITU Secretary-General Hualin Zhao.

The event will be streamed live on webtv.un.org. Viewers will be able to ask questions through an online platform the details of which will be shared shortly before the event.

## Obituaries

### DANILA TLISOV (1983–2020)



(Image: Caleb Smith/CMS)

It is with great sadness that we inform you that Danila Tlisov, a member of the CMS collaboration at CERN, passed away on 14 April in Russia due to complications associated with COVID-19. He was 36 years old.

Danila joined the INR Moscow group in 2010 as a young researcher after graduating with honours from Moscow State University and defending his dissertation. Following his contributions to early heavy-

neutrino searches, Danila started to work on the CMS hadron calorimeter (HCAL) subsystem in 2012.

Danila himself was the strong hub of the multinational CMS HCAL upgrade effort, leading the CERN-based team that received individual components from India, Russia, Turkey and the United States and assembled them into a working detector. Danila recently brought his unique mix of strengths to the CMS HCAL management team as Deputy Project Manager and a member of the CMS Management.

In the physics analysis realm, Danila worked with the University of Rochester group on a measurement of the electroweak mixing angle using the forward-backward asymmetry in Drell-Yan events. Danila focused on critical improvements to the calibration of the electron-energy measurements in challenging regions of Drell-Yan kinematic phase space.

CMS friends and colleagues remember fondly the warm smile and incredibly ef-

fective leadership of Danila. His practical know-how and excellent judgement were critical as we worked together through the usual tough challenges of a detector upgrade.

Danila was an accomplished backcountry touring skier. Because of his great physical strength and focus on climbing, it was often said that he may have been faster going uphill than downhill, and that is saying a lot.

Among his many colleagues, Danila will be remembered for his pleasant, cheerful disposition even during times of intense pressure. He challenged us with his brilliant ideas, guided students with patience and grace and inspired us all. He will be sorely missed.

We would like to express our sympathies and heartfelt condolences to his wife and his family in Russia.

*His colleagues and friends from the CMS collaboration*

# Ombud's corner

## THE FIVE PHASES OF LOCKDOWN\*

We all experience lockdown differently, depending on our temperament, our family situation, our network of friends, the size and location of our home and many other factors. Some parts of the world are further along the timeline than us and we can learn from their experience. For example, there seem to be five fairly typical phases of lockdown: the beginning, adaptation, the new normal, continuity and, finally, the lifting of the lockdown. This timeline can help us to better understand our reactions.

The first phase is, of course, far behind us: the period when the lockdown came into force, bringing with it the closure of crèches, schools and non-essential businesses, as well as queues outside food shops.

We've also already been through the second phase: we've adapted to the new measures and found our rhythm. We try to limit our news intake so as not to end up adding to the widespread anxiety and panic. Some

of us have returned to some rather neglected domestic activities: cooking, board games or DIY. We've been in contact with those we haven't seen or perhaps even heard from for a long time.

In the current "new normal" phase, we've adopted a new lifestyle, not without difficulty sometimes. It's important to agree on a family schedule: who does what, when and where? Some parents have even drawn up "contracts" with their families, which can prove useful when it comes to respecting the new rules in the long term.

Switzerland is planning to gradually ease the lockdown restrictions as of 27 April and France will start to do the same as of 11 May. This will be the continuity phase. The challenge then will be to stand firm over the long term, even after the lockdown begins to be lifted. We might be tempted to let our guard down and bend our new rules now

and then... but we must keep up the good work and consolidate our new habits.

The light at the end of the tunnel is in sight, when we'll once again be able to visit and hug our friends and family and see our colleagues. That will be the moment to learn from this experience and remember the most important lessons!

I wish you all the best in overcoming this challenge with courage, patience and an open mind. Here's hoping that this experience will ultimately prove beneficial and will help us improve our lives in the future!

*Pierre Gildemyn*

*If you'd like to comment on any of my articles or suggest a topic that I could write about, please don't hesitate to e-mail me at Ombuds@cern.ch.*

*\*Loosely based on "Lessons from a coronavirus refugee" by Sina Farzaneh.*