

Dear Reader,

This Newsletter is intended for all SPS members, researchers, industries, students, interested specialists and physics friends. Feel free to share this Newsletter within your community, and follow this [link](#) if you want to add a person to our mailing list.

If you wish to give your contribution with news or suggestions, please do not hesitate to contact me at: margherita.boselli@cern.ch

Kind regards,

Margherita Boselli

WHAT'S UP IN SWITZERLAND?

Finals of the Swiss Physics Olympiad

The finals of the [Swiss Physics Olympiad](#) took place on the weekend of March 19 and 20 in Aarau. 19 high school students selected among 595 participants coming from all around Switzerland challenged each other in a series of tests both on experimental and theoretical physics. Gold, silver and bronze medals have been awarded to the best students. The five students awarded with a gold medal are:



- Adrian Serrano Capatina, Ecole Internationale de Genève (GE)
- Bruno Pontecorvo, Institut International de Lancy (GE)
- Patrick Zenhäusern, Kollegium Spiritus Sanctus (VS)
- Lucio Ineichen, Kantonsschule Uetikon am See (ZH)
- Luis Jost, Alte Kantonsschule Aarau (AG)

The winners will represent Switzerland during the [International Physics Olympiad \(IPhO\)](#). The current edition of IPhO is planned to take place in Belarus during the summer, but Switzerland won't participate. Nevertheless, the five students will take part in the alternative event organized with the support of Switzerland. On top of the five students taking part in IPhO, other students will represent Switzerland in the European Physics Olympiad that will take place in Ljubljana in May.

Group picture of the finalists in the Swiss Physics Olympiad (image from: Physics Olympiads).

New MOOC released by EPFL

A new massive-open-online course (MOOC) offered by the [École Polytechnique Fédérale de Lausanne \(EPFL\)](#) on Synchrotron and X-Ray Free Electron Laser techniques will be published on **11th April 2022**. The introductory course includes a description of the interaction of matter with X-rays, the production of X-rays at synchrotrons and X-ray free-electron lasers, and the optics and experimental instrumentation needed to carry out experiments at such large-scale facilities. The material is pitched at an undergraduate/graduate level to a broad audience from the natural and engineering

sciences.

The course is nominally six weeks long, but is self-paced, meaning all the material is available once one has registered.

Certificate-track students need to obtain 60% of the graded questions to obtain their certificate; there is no time limit to this, nor the time in which the course material is accessible, as long as it remains on the platform. Audit-track students (no certificate) have access to the course for the six-week period after they register.

A description of the course contents can be found [here](#), while a short teaser movie is viewable [here](#). A second six-week course concentrating on the experimental techniques performed at synchrotrons and XFELs is presently under development.

Qubit Storage: a New World Record at the University of Geneva

A team of scientists from the University of Geneva succeeded in storing a photonic quantum bit (qubit) for a record time of 20 milliseconds, a result never achieved before in a solid state memory.



Quantum information is an extremely promising technology which is still facing several challenges, including the availability of long duration memories to implement long distance quantum networks and repeaters. In the framework of the European programme [Quantum Flagship](#), the team of Mikael Afzelius at the [Department of Applied Physics of the University of Geneva](#) works on qubit storage using photons in a crystal. This process allows the photon to transfer its quantum state to the atoms of the crystal before disappearing. In 2015 they managed to store a qubit for 0.5 milliseconds, and today they succeeded in increasing it to 20 milliseconds. This research has been published on [npj Quantum Information](#). More information are available [here](#).

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WHAT'S UP IN EUROPE

Position Paper on Science and Mathematic teaching

Science knowledge is evolving rapidly and it plays a prominent role in the response to the challenges that we are facing, including climate change, pandemics and energy production. Science and mathematic school teaching must keep the pace, and high-quality in-service teacher education and professional development for teachers in an indispensable element to achieve this goal.



For this reason, a [position paper](#) published by the German Physical Society and four other major mathematics and science societies calls on politicians and school authorities to create qualified courses for teachers of science and mathematics and to make it easier for them to participate in them during regular working hours.

This political demand and the points in the position paper are highly relevant also for the education of Swiss physics teachers.

Centennial of IUPAP

In 2022 [IUPAP](#), the international organisation representing the global community of physicists, celebrates its centennial. IUPAP promotes the worldwide development of physics and aims at solving problems of concern to humanity, and to celebrate this anniversary it will hold an international



symposium in July along with a number of other satellite events in the course of the year.

The [Centenary Symposium](#) will take place at the **Abdus Salam International Centre for Theoretical Physics (ICTP) in Trieste, Italy, from July 11 to 13** and it will host world-renowned scientists, with panels addressing key issues related to the development of physics, the promotion and role of physics research in the world, and science policies. The conference is one of the events of the [International Year of Basic Sciences for Sustainable Development](#) promoted by UNESCO, which will start officially in July 2022.

The Swiss Physical Society (SPS) unites persons interested in physics from university, schools, research, development and industry. The SPS promotes the scientific exchange of ideas in Switzerland and with its international environment.

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