

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](mailto:margherita.boselli@cern.ch)

Kind regards,

*Margherita Boselli*

## WHAT'S UP IN SWITZERLAND?

### UN International Day of Women and Girls in Science

February the 11th is the [United Nations International Day of Women and Girls in Science](#), an event that aims to remind the society about the gender gap still present in STEM (science, technology, engineering and mathematics)- related fields, and to motivate individuals and institutions at taking actions to bridge it. On this occasion, [more than 40 women volunteers from CERN, EPFL and the University of Geneva](#)



visited (in presence or via video conference) 66 classrooms in France and Switzerland to present their jobs and career paths to 1367 children between the ages of 7 and 15. Despite the difficulties related to the pandemics, the event was successful and the volunteers presented their activities in an engaging and dynamics way.

*In the image Maria Alandes Pradillo talks about CERN to pupils at an elementary school in France (credit CERN).*

### Claus Beisbart interviewed in "Sternstunde Philosophie"

What are the limits of scientific knowledge? How can we tell the difference between proper science and pseudoscience? And what role has scientific knowledge to play in fighting the Corona crisis? These are just some of the questions that host Barbara Bleisch discussed with the chair of the [History and Philosophy of Physics section of the SPS](#), Claus Beisbart, on February the 21st, 2021. The interview can be watched [here](#). Some of the questions debated during the TV emission are also addressed in Beisbart's recent article in the [last issue \(number 63\) of the SPS Communications](#), «Science and Politics in the times of COVID-19».



*In the image Claus Beisbart.*

### Swiss Winners of the 2020 Edition of Physics in Advent

Christmas is over, spring is almost there, but it's not too late to take a look to the outcome of the [Physics in](#)



[Advent](#) competition. This year, more than 61000 people registered, and among them, many Swiss schools and individuals successfully completed the challenging tasks prepared by the organizers (all available [here](#)). In Switzerland, two school classes won guided tours at [PSI](#) and [IBM](#), and 20 students will receive a prize sponsored by the Swiss Academy of Science ([SCNAT](#)) and organized by [our society \(SPS\)](#). Congratulations to all the participants, and stay tuned for next year!



Image from the [Physics in Advent website](#).

## Wilhelm Conrad Röntgen Symposium taking place in 2021

2020 marked the 175th birthday of the physicist Wilhelm Conrad Röntgen (1845-1923) and the 125th anniversary of his discovery of X-rays. Due to the pandemic the celebrations didn't take place and have been postponed to 2021. An open symposium, jointly organized by [our society \(SPS\)](#), the [Physikalische Gesellschaft Zürich \(PGZ\)](#), and the [Swiss Academy of Sciences \(SCNAT\)](#), will take place on Saturday 18 September at the ETH Zurich. All the lectures will be free and will be given in English to be as accessible as possible to the interested public. More information about the program and the Young Talents Day, that will take place on the same day, can be found [here](#).



An image of Wilhelm Conrad Röntgen (source Wikipedia).

## The 5th Jost Bürgi Symposium goes digital

The 5th edition of the Symposium organized to celebrate the Swiss engineer and mathematician [Jost Bürgi](#) (1552-1632) will take place between 30 April and 1 May 2021, and it will be fully digital. On the one hand this format will not allow the usual exchanges about historical topics in the charming ambience of Bürgi's birthplace in Lichtensteig/SG, but on the other hand, many more people, to whom traveling would be too cumbersome, will be able to take part in the event. On Friday 30 April [the workshop](#) will be held as an interactive video conference, restricted to registered participants, while on Saturday 1 May a public broadcast streaming of the [Future Forum](#) will be organized.



Image from [Jost Bürgi Website](#).

## International Congress on Mathematical Physics: Update

Between August 2 and 7 2021 Geneva will host the [International Congress on Mathematical Physics \(ICMP\)](#). The ICMP 2021 is currently planned in physical presence and will also be streamed. The on-site event will comply with the [Federal Office of Public Health \(FOPH\)](#) Safety Rules at the time of the event.



The [ICMP 2021](#) submission deadline for contributed talks, posters and financial requests has been extended to 8<sup>th</sup> of March 2021. This year the traditional ICMP Human Rights Session (6th August 2021) proposes over a standing lunch, a discussion on to the Impact of gender equality measures in mathematics & physics. A call for contributions for this session is currently open and the submission deadline is fixed to: 10th May 2021.

## CHEOPS finds Unique Planetary System

Using CHEOPS, a joint mission by the [European Space Agency \(ESA\)](#) and Switzerland (under the aegis of the [University of Bern](#) in collaboration with the [University of Geneva](#)), scientists from the University of Geneva, the University of Bern and the [National Center of Competence in Research PlanetS](#), detected

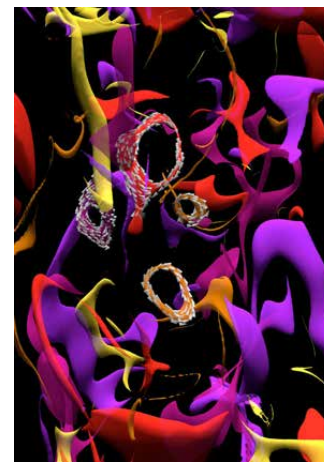


six planets orbiting the star TOI-178, located over 200 light years away from Earth, and found a harmonic rhythm in the orbits of five of them. More precisely, they observed that the ratios of their orbital periods form simple fractions, similarly to the relationships among musical notes forming a harmony. Surprisingly, the researchers found that these planets have different compositions, a result that challenges the current understanding of the formation and evolution of the planetary systems. This work has been published in the journal [Astronomy and Astrophysics](#), and a press-release is available [here](#).

*Image VLT/eso.*

## Magnetic vortices come full circle

An international team of scientists from [PSI](#), [ETH Zurich](#), the [University of Cambridge \(UK\)](#), the [Donetsk Institute for Physics and Engineering \(Ukraine\)](#), and the [Institute for Numerical Mathematics RAS in Moscow \(Russia\)](#) reported at the end of 2020 the discovery of unexpected magnetic structures inside a tiny pillar made of the magnetic material GdCo<sub>2</sub>. The researchers observed sub-micrometer loop-shaped configurations, which they identified as magnetic vortex rings. Far beyond their aesthetic appeal, these textures might point the way to further complex three-dimensional structures arising in the bulk of magnets, and could one day form the basis for novel technological applications. This important result was achieved using a novel X-ray method for the nanotomography of bulk magnets developed in 2017 by researchers at PSI and ETH Zurich and demonstrated in [experiments at the Swiss Light Source SLS](#). This work has been published in the Journal [Nature Physics](#), and a press-released is available [here](#).



*Reconstructed vortex rings inside a magnetic micropillar (Image: Claire Donnelly).*

## WHAT'S UP IN EUROPE?

### For the first time in a decade ESA opens a call for Astronauts

On February the 16th, the [European Space Agency \(ESA\)](#) announced the beginning of their third [astronaut recruitment campaign](#), an historical call after the first in 1974, and the second in 2008. The application submission will start on March 31 2021, and a dedicated [webpage](#) will provide all the information to prepare the applications. ESA is looking for candidates from a large variety of profiles and backgrounds, but for the best chance of success, the minimum requirements are: being a citizen of an ESA [member state or associate state](#), holding the minimum of a Master's degree in natural sciences, medicine, engineering, mathematics, or computer sciences or holding a degree as an experimental test pilot and/or test engineer from an official experimental test pilot school. Candidates must have at least three years of relevant professional experience after graduation and be fluent in English. Good knowledge of another foreign language and any other additional language is a plus.



*In the image the ESA astronauts selected in 2009 (from ESA).*

## WHAT'S UP IN THE WORLD?

### International Day of Light 2021

UNESCO celebrates every year on 16 May the [International Day of Light \(IDL\)](#). The date commemorates the first laser by Theodore Maiman at Bell Labs in 1960. IDL is a global initiative that provides an annual focal point for the continued



appreciation of light and the role it plays in science, culture and art, education, and sustainable development, as well as in fields as diverse as medicine, communications, and energy. It is a good opportunity to organize a special event perhaps for kids, pupils or to announce an activity which is already in your light-pipeline. It is easy to upload the details to the [IDL- Calendar](#), so the whole world can enjoy it, hopefully. More information about this event are provided by [SCNAT](#).

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