

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 NEW IN SWITZERLAND

SPS Young Talent Day 2024

This year's edition of the **Swiss Physical Society's Young Talent Day** took place on 9 September, in parallel with the SPS Annual Meeting at ETH Zurich. A selected group of Swiss students - winners of national physics and science competitions - were warmly welcomed at the Physics Department on the ETH Hnggerberg campus. Local physicists kindly organised a series of guided tours through the laboratories of the Quantum Optics, Attosecond Physics, Ion Beam Physics groups and the Quantum Device Lab. After the tours, students and guides enjoyed lunch in the Mensa FoodMarket, where lively discussions and exchanges took place. In the afternoon, the students went to the ETH Zentrum campus to join the Louis de Broglie Symposium. During the break, the young talents were congratulated by SPS President Prof. Montaruli.

The aim of this annual event is to give young people - in their high school, junior high school and early university years - the opportunity to visit research laboratories, get a feel for the atmosphere, meet researchers: in short, getting a taste of science.

According to the students' feedback, the Young Talent Day was a highly informative and inspiring experience. They particularly enjoyed the "super interesting" lab tours and were impressed by the motivation and enthusiasm of the experts. They expressed a desire to visit more labs and have more time to interact with the experts.

Image: participants in the Young Talent day learning about a dilution cryostat.



Dark Matter Day 2024 at CERN : Discover the Mysteries of the Universe and the Brain

To celebrate **Dark Matter Day 2024**, CERN is organising an immersive evening that will take the public on a journey from cosmology and particle physics to neuroscience. The event



will take place on 31 October 2024 at 19:30 and is entitled "Discovering the mysteries of the universe and the brain".



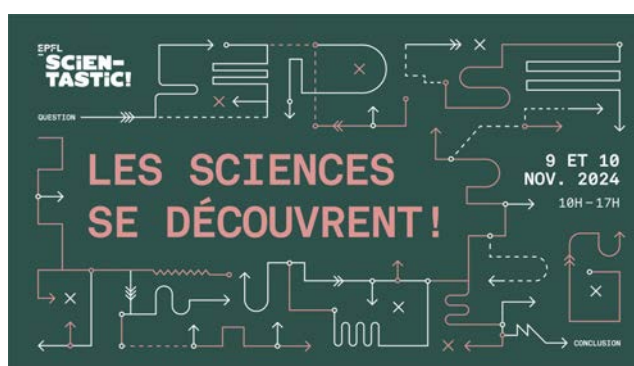
During the event, [Camille Bonvin](#), Associate Professor of Cosmology at the University of Geneva, will take the public on a journey to discover dark matter. Three CERN researchers will present in a very engaging way how dark matter research is carried out in particle physics experiments. [Denis Jabaudon](#), Director of the Department of Fundamental Neurosciences at the University of Geneva, will show how the study of neurons in our brains is similar to the search for dark matter particles in physics.

The event will be held in French with simultaneous translation into English. It is free of charge, but registration is required [via this link](#).

Join CERN for an evening that promises to stretch the limits of your knowledge and feed your curiosity!

The "Scientastic" event at the EPFL

On 9 and 10 November, the EPFL is organising the "[Scientastic](#)" event. Researchers from the Lausanne campus will welcome the public to discover and discuss science and technology and their impact on our society. Several activities for adults and children will be organised under the banner of: "le fonctionnement des sciences" - "how science works".



[The programme](#) is very rich and includes, among other things, the visit of exhibitions, laboratories and science shows.

Colloque Wright 2024

The 2024 edition of the "Colloque Wright pour la science" will be held in Geneva from 4 to 8 November.

The event consists of a series of free public conferences on the theme of symmetry. Speakers from international institutions will offer the public an interdisciplinary

interpretation of this fascinating topic. More information is available [here](#).



Call for Prix Schläfli 2025

The **Prix Schläfli** is awarded each year by the **Swiss Academy of Sciences (SCNAT)** to scientific papers based on doctoral theses that make a significant contribution to their field. In 2025, SCNAT will award four prizes in the following disciplines: biology, chemistry, geosciences and physics.

The prize includes a cash award of CHF 5000. Candidates must have defended their doctoral thesis between 1 December 2021 and 30 November 2024. **Nominations** must be submitted by the candidate's supervisor or by the president of an SCNAT member society by **30 November 2024**.

All relevant information can be found [here](#).

Prix Schläfli
since 1866

Awarding outstanding Swiss PhDs in natural sciences

Call 2025

The Swiss Academy of Sciences (SCNAT) awards the Prix Schläfli for scientific articles resulting from PhDs that make major contributions to key questions in their respective fields. In 2025, four prizes will be awarded in the following disciplines:

- Biology
- Chemistry
- Geosciences
- Physics

Eligibility is limited to young researchers who completed their doctoral thesis at a Swiss University, or Swiss nationals who completed their doctoral thesis abroad. Candidates must have defended their doctoral thesis between 1 December 2021 and 30 November 2024. Nominations may be submitted by the candidate's doctoral supervisor or by the president of a SCNAT member society.

A jury is established for each of the four disciplines in order to evaluate the candidates and choose the laureates. The prize includes a monetary award of CHF 5000.

Nominations must be submitted using our online form no later than **30 November 2024** (scnat.ch/prixschlaefli). Please consult the guidelines before applying.

Contact details:
Swiss Academy of Sciences (SCNAT) | House of Academies | Laupenstrasse 7 | P.O. Box | 3001 Bern
Dr Anne Jacob - Phone +41 31 306 93 05 - anne.jacob@scnat.ch

Physics in Advent is coming to town

Physics in Advent is a special and unique Advent calendar where young researchers, school classes and anyone interested can try out a do-it-yourself physics experiment at home or school every day from 1 to 24 December 2024.

Participation is particularly rewarding for Swiss students and school classes, who can win special prizes offered by the Swiss Physical Society, SCNAT and our sponsors.



Registration opens on 1 November 2024, so don't miss this opportunity!

Workshop: Quantum Gravity and the Laws of Nature

On 12 and 13 December, Geneva will host an exciting workshop on quantum gravity and the laws of nature.

What, if anything, are the laws of nature? This is a central question from both a philosophical and a scientific point of view. Laws of nature are based on the existence of space-time and spatio-temporal relations. However, if the notion of spacetime were to be revised, at least fundamentally, as various approaches to quantum gravity suggest, the viability of these proposals would be called into question.

This workshop will bring together experts in the field to examine the fate of the laws of nature in such a stimulating yet problematic environment.

Full details of the event are available [here](#). Interested scientists have until 23 October 2024 to submit a title and an abstract to contribute to the workshop.

Prof. Nicolas Gisin wins the Micius Quantum Prize

Professor **Nicolas Gisin**, Honorary Professor at the Faculty of Science of the University of Geneva, [has been awarded the prestigious 2023 Quatum Prize by the Chinese Micius Foundation](#). The prize is shared with John Rarity, Professor at the University of Bristol.



Named after Micius, an ancient Chinese philosopher, the foundation of the same name created the [Quatum Prize in 2018](#) to reward scientists who have made outstanding contributions in the field of quantum communication and quantum simulation.

This award is a further recognition of the pioneering contributions of Professor Gisin's group in the field of quantum cryptography based on entangled particles. A journey that began in the early 1990s and culminated in 2003 with the first long-distance quantum teleportation in telecommunications fibres.

Image: portrait of Prof. Gisin. Photo from Mireille Gisin.

WHAT'S NEW IN THE WORLD

Next edition of the Laser-aided plasma diagnostics conference - LAPD21

[The next edition of the Laser-Aided Plasma Diagnostics conference - LAPD21](#) - will be held in Saillon-les-Bains in September 2025, organised by the [SPC-EPFL](#). The LAPD21

symposium is the continuation of a biennial series that began at Kyushu University in 1983. It brings together physicists and chemists in various fields of laser-based plasma

LAPD21



EPFL
Swiss
Plasma
Center

diagnostics, including nuclear fusion physics, laser physics, and low-temperature plasma chemistry and physics. The symposium aims to promote cross-fertilisation between these fields through fruitful discussion and covers all diagnostics using electromagnetic waves (lasers and microwaves) applied to fusion plasmas, industrial process plasmas, environmental plasmas, plasmas for medical applications, atmospheric plasmas, plasmas in liquids and other plasma applications. Topics on hardware developments related to laser-aided plasma diagnostics are also welcome. Instrumentation developments related to laser-aided plasma diagnostics have also been emphasised in the programme.

Focus journal of French Physical Society on the Energetic transition

In 2024, the [French Physical Society](#) published 2024 [a special issue of its Journal, "Reflets de la Physique" on the energy transition](#) and the delicate issue of defossilisation. The journal collects articles from experts who approach the problem from different angles, starting from the facts and presenting the state of research in this field.

The pdf version of the journal is available [here](#).



Nobel Prizes 2024

Physics

The 2024 Nobel Prize in Physics was awarded in early October to **John Hopfield**, Princeton University, USA, and **Geoffrey Hinton**, University of Toronto (affiliation at time of award). The prize



recognises their "fundamental discoveries and inventions that enable machine learning with artificial neural networks". The researchers used tools and models originally developed for physics to lay the foundations for today's machine learning.

Chemistry

The 2024 Nobel Prize in Chemistry is for proteins, the ingenious chemical tools of life. Half of the prize has been awarded to **David**



Baker (University of Washington, USA) "for computational protein design" and half jointly to **Demis Hassabis** and **John M. Jumper** (both of Google DeepMind, London, UK) "for protein structure prediction". Both discoveries open vast possibilities with enormous potential.

Exploring the complexity of biological systems and the interactions of biomolecules in the highly crowded aqueous environment of living matter is the new focus of the Biophysics and Soft Matter section of the SPS. The next two issues of SPS Communications will focus on this fascinating area of science.

More information on the physics and chemistry laureates will be published in SPS

Image: Drawings of the Nobel prize laureates in Chemistry 2024. From left to right: David Baker, Demis Hassabis and John M. Jumper. Picture from Nobel Prize Outreach.

WHAT'S NEW ON DIVERSITY AND INCLUSION

The Swiss Physical Society Joins GENERA Network to Champion Diversity and Inclusion in Physics

Geneva, September 28, 2024 — **The Swiss Physical Society (SPS)** is proud to announce its official membership in the **GENERA Network**, a pan-European initiative dedicated to promoting diversity, equity, and inclusion in physics. During the network's general assembly, held from September 25 to 27 at CERN in Geneva, Philipp Schmidt-Wellenburg, representing the SPS, signed the Memorandum of Understanding (MoU) to formalize the society's participation.



"This is a tremendous opportunity for the newly established SPS Commission on Diversity, Equity, and Inclusion," said Schmidt-Wellenburg. "I'm excited to learn from our peers and be inspired by colleagues from across Europe as we work together to create a more inclusive scientific community."

The GENERA Network, originally launched in 2015 as part of an EU-funded project, unites physics institutions from universities to major research centers like CERN and the Helmholtz Association. Its mission is to make physics a more inclusive field, offering workshops, seminars, and networking opportunities that empower all genders and diverse groups.

SPS is joining an illustrious group of institutions, including national funding agencies and societies like the Swiss National Science Foundation (SNF) and the Swedish Physical Society, all working together to ensure equity and inclusion in the sciences. Reflecting on the assembly, Schmidt-Wellenburg added, "It was inspiring to participate in such an event, and I'm enthusiastic about the future prospects for diversity, equity, and inclusion within the Swiss physics community." With its commitment to GENERA, SPS is poised to make a significant impact, fostering an environment where all physicists, regardless of gender or background, can thrive.

For more information, please contact:

Philipp.schmidt-Wellenburg@psi.ch

Image: Signature of the MoU between the GENERA Network and the SPS. Photo from GENERA Network.

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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