

CHIPP - outreach report, 26

CHIPP outreach team: Katharina Müller, Nicolas Angelides, Luz Sanchez-Real

High Schools & Students

- Masterclasses – at Bern, Geneva, EPFL and Zurich
- Workshops: Science Lab @ UZH, iLab @ PSI, Physiscope @ Geneva
- Visits at universities, CERN and schools
- Mentoring, workshops, schools, internships
- CHIPP summer student programme
- EPFL: Ukrainian Student programme, Ukrainian Teacher programme

Quantum Century

- 100 years Schrödinger Equation
- Escape Room opened January 2026

Events

- Long Nights of Museum (Zurich), Nuit de la Science (Geneva), Scientifica (Zurich, ongoing)

General public

- (Virtual) visits, talks, guided tours, videos, Youtube,...
- CHIPP members very active in (VIP) visits at CERN
- CHIPP articles
- [Science Pavilion UZH](#): exhibitions & guided tours (LHC & Dark Matter, GW)
- Interviews, articles in newspapers



ideas/suggestions?

→ Katharina (kmuller@physik.uzh.ch)

Ongoing activities for high schools

- Masterclasses
- School labs
- Visits at universities, CERN and at schools
- (Online) visits to the experiments
- Mentoring
- Matura projects

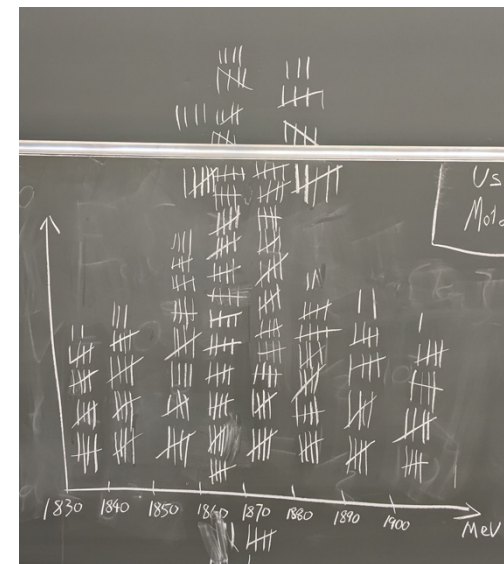
Masterclasses (high school students)

**INTERNATIONAL
MASTERCLASSES
HANDS
ON PARTICLE
PHYSICS**

International masterclasses with in total 225 CERN Masterclasses, > 10'000 participants worldwide (ATLAS, CMS, LHCb & ALICE)

In addition: MINERvA, NovA, Belle II, Hadron Therapy, Pierre Auger

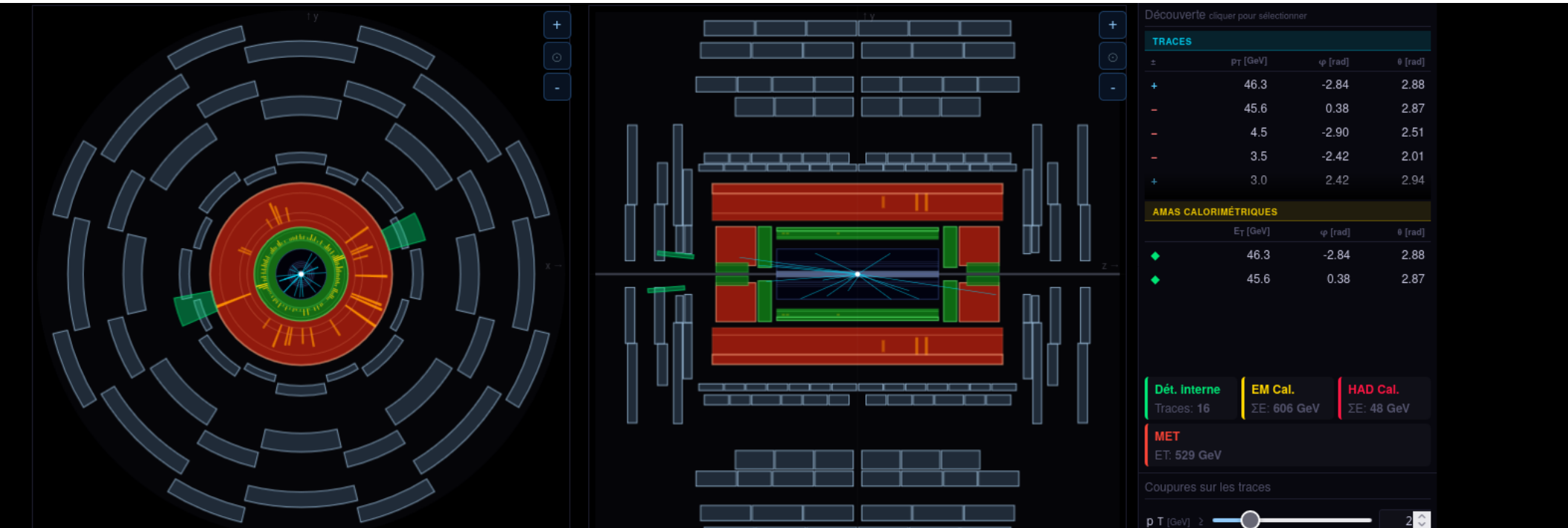
Masterclasses Zurich (CMS), Bern (ATLAS), Geneva (ATLAS), Lausanne (LHCb) in spring '25
good attendance



Masterclasses

Geneva: web-based version of the [ATLAS Z-path](https://indico.cern.ch/event/1679012/#2-web-based-alternative-to-hyp) event display for phones/tablets/laptops
→ response was overwhelmingly positive (especially from teachers who had been there in previous years and thus had seen both versions)

<https://indico.cern.ch/event/1679012/#2-web-based-alternative-to-hyp>



Ongoing activities for high-schools

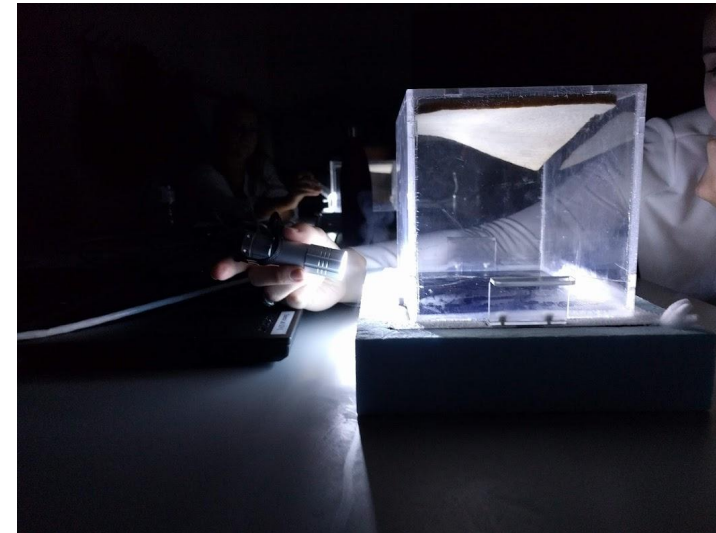
Workshops for students & schools:

- [Science Lab UZH](#): workshops, visits
- [iLab, PSI](#) visiting program
- [Physiscope, Geneva](#)
- [Science Gateway](#)

Visits:

- [Science Pavilion UZH](#) for school classes, gravitational waves, CERN, Dark Matter
- [EPFL: Musee de Physique](#)
- Lab visits at universities
- Visits to CERN and LHC experiments
online: <https://www.epfl.ch/labs/lphe/visite-virtuelle-de-lhcb/>

Study programs for high-school students: UniGe, UZH, UniBe



Internships / Matura projects / Mentoring

Internships / Maturarbeit (projects in final year of high-school)

- + very useful for students at university and high-school level
- + can attract good students to your group or university
- + visibility
- time consuming
- timing difficult (school holidays in summer)

Mentoring – for high-school students:

High-school (advisor for matura projects, eg [SCNAT](#))

Girls in STEM (eg [Swiss Tec Ladies](#))

CERN

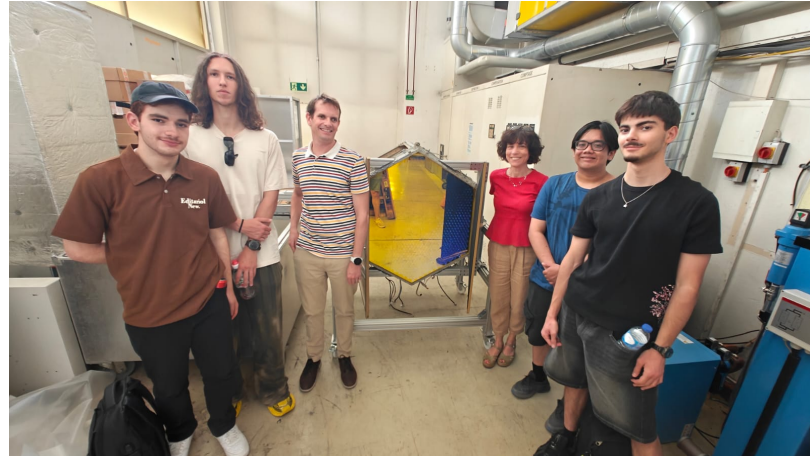
[Beamline for Schools](#): teams of high-school students propose a scientific experiment

[CERN-Solvay student camps](#): one week experiments, lectures, projects

Semaine décloisonnée” and “Option Complémentaire” at Collège Rousseau

Topic: Gamma-Ray Astronomy for High-School

Foto: Students and their teachers around the SST-1M camera during a visit at the University of Geneva



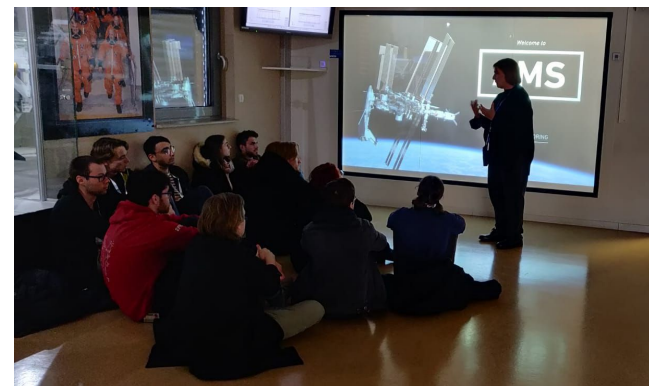
High-School students are introduced to astrophysics, data analysis techniques and detector technologies employed with the SST-1M telescope.

Program started in 2024, in two years close to 100 students attending a one-week program with extremely positive feedback.

In 2025/2026, it was turned into an Option Complémentaire with a visit to the University of Geneva, where the SST-1M camera was back for maintenance operations

Activities for Students

- Mentoring (SPS, Universities)
- Career: SPS Women in Physics Career event
- Network event for female students (UZH)
- Regularly: CERN visits for bachelor and master students
- ETH: camp for teaching assistants
- EPFL: one-week pre-university course
- CHIPP Winter School
- PSI Particle Physics Summer School
- PSI Summer Student Programme



Students: EPFL pre-university course

one-week pre-university course for high school students

Lectures and visits to the lab during the fall & spring school holidays

- Médecine et intelligence artificielle
- Mathematical thinking: between rigor and creativity
- Science and sustainability
- Materials science: innovating at the atomic level
- Dive into the world of STEM!
- Build your own mobile robot
- Game theory and artificial intelligence
- Nature, in code



PSI Particle Physics Summer School

For bachelor students who have completed 3 years and master students (physics, other natural sciences, engineering, or information technology)

2026 Precision on the Edge 23 - 28 August

Programme



CHIPP Summer Student Program

The Swiss Summer Student Program is organized by the particle physics groups of ETH Zurich, the University of Zurich, EPFL and the University of Geneva.

For Bachelor and Master students.

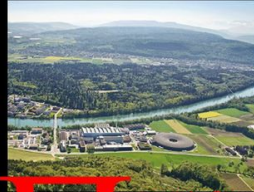
Work on detector development or data analysis
(9 weeks)

Article



Swiss Summer Student Particle Physics Program

For undergraduate students & students that graduated within the last year



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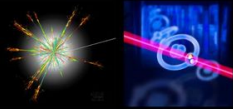
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A summer student program based at ETH Zürich, University of Zürich and EPFL. Let's make knowledge collide in different Swiss institutes.

Organizing Committee:
Tobias Golling, Geneva
Ben Kilminster, UZH
Luigi Marchese, ETH Zürich
Lesya Shchutska, EPFL
Anna Soter, ETH Zürich



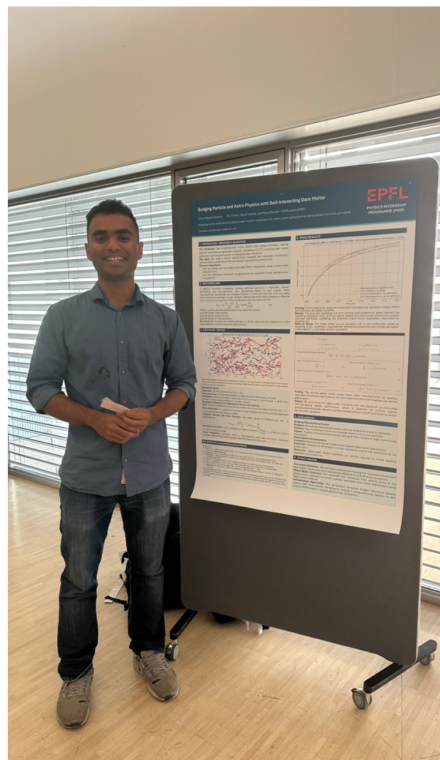
Apply by May 1, 2024



CHIPP Summer Student Program

3 students at EPFL from Swiss Summer Student Program in Particle
Physics

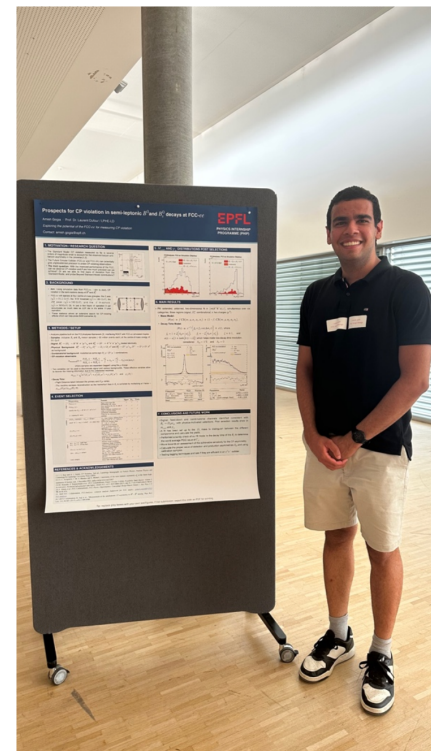
Omar Saimun
Obs. Paris–PSL (S^3P^3)



Illia Koval
CTU Prague (S^3P^3)



August 13,
2026
Amish Gogia
ETHZ (S^3P^3)



Mentoring

PSI: **feM-LEAD** Programme (female Mentoring: Leadership for Equity And Diversity)

- What does leadership (in general / at PSI, Empa, Eawag, WSL) mean?
- What are challenges, opportunities and important competences?
- What steps can I take if I want to become a leader?
- How can I expand my network?
- What are the (unwritten) laws in the professional environment?

New: SPS Women in Physics → Diversity in Physics

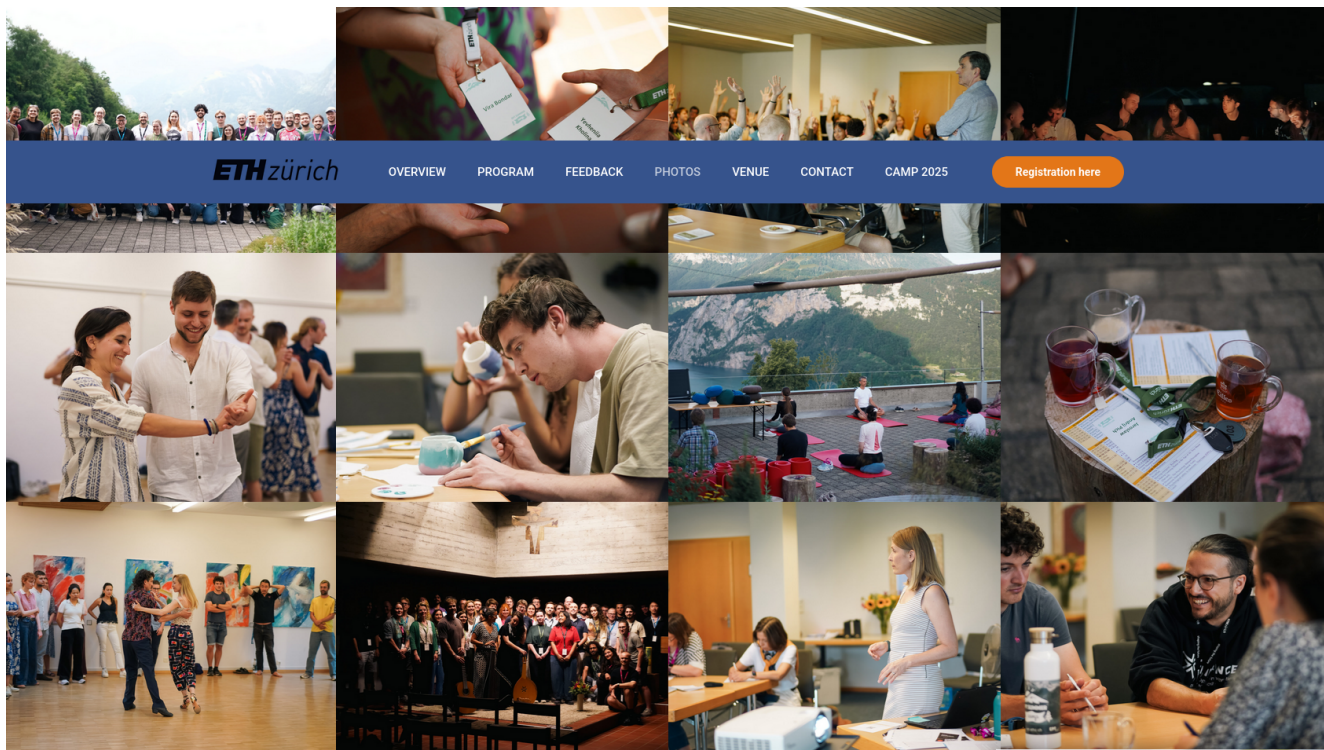
- Yearly career symposium
- Mentee programme



EPT summer camp, Morschach, 14-17 June 2026

5th edition of **EPT summer** camp for PhDs and postdocs

- Engaging Physics Tutoring (EPT)
- Transversal skills for teaching & research
- Innovative teaching methods in multidisciplinary setting
- Enhance learning experiences across disciplines



Visits to CERN

Regular CERN visits for

- Students
- Teachers
- High-Schools
- Alumni
- General public
- VIP
- ...



Outreach Events for the general public

Use different channels to reach a diverse audience

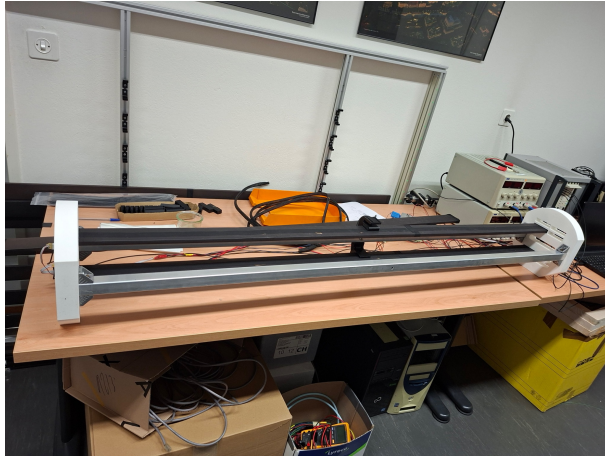
- Talks
- Workshops
- Exhibitions & Museums
- Hands-on Experiments
- Lab visits
- Videos & public screenings
- Games
- Arts & Science
- Social Media
- Newspapers
-

Salon International des Inventions de Genève 2026 (11 to 15th March)



- Photon-detection technology → detection of light flashes containing only a few tens of photons
 - Development of extensive air showers in the atmosphere
 - Signal classification (cosmic ray or a gamma ray)
- exhibit attracted a broad audience, ranging from primary school pupils to senior visitors, and generated many engaging discussions about particle astrophysics and modern detector technologies.

Nuit de la Science 2026, Geneva: When matter casts a Muon shadow



- Where do muons come from, how can they be detected?
- Principles of particle detection with working muon detector
- Hands-on experiments, visual demonstrations and interactive explanations
- Particools game: for children to discover the elementary particles of the Standard Model

→ communication of modern particle physics and its applications to a broad audience generating sustained interest throughout the event.

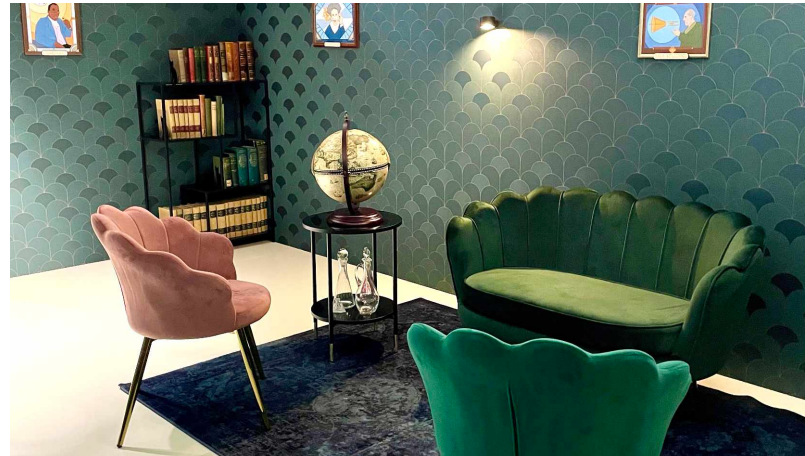
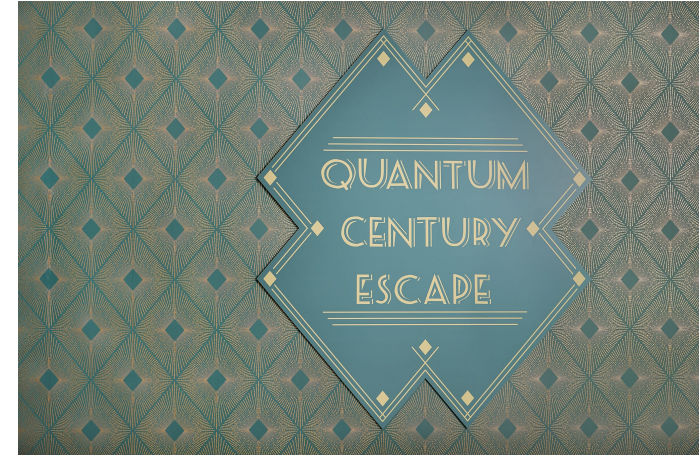
Quantum Century Escape – University of Zurich

Inspired by science and history

Immersive escape room where physics, scientific method, and groundbreaking historical discoveries come to life in a thrilling race against time.

Work together to solve puzzles and perform experiments as you uncover the secret of a mysterious scientist from 1925 - the dawn of quantum mechanics.

In operation since January 2026



CHIPP articles

About 8-10 articles per year, funding from SCNAT since 2015

Published articles:

CHIPP : <https://chipp.ch/de>

SCNAT: <https://naturalsciences.ch/>

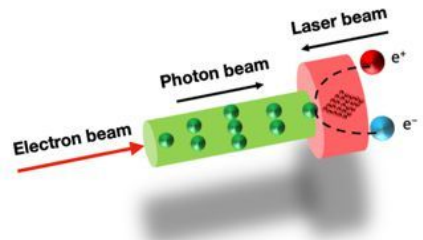
Scientific writer: Barbara Warmbein since 1/22
and Aleksandra Nelson since 1/25



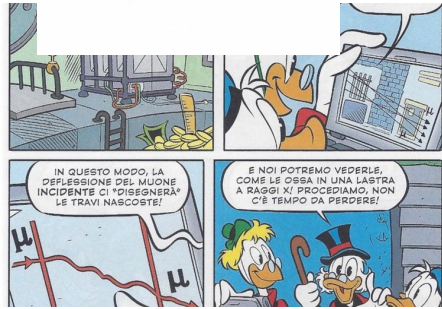
Ideas for an article?

Contact Katharina (kmueller@physik.uzh.ch)

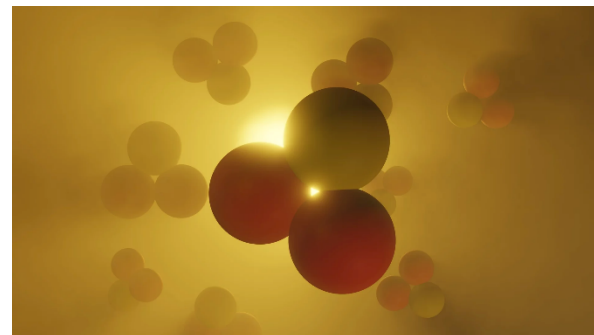
Articles



- Neutrons in search of their mirror twin
 - New era for gravitational waves in Switzerland
 - Boiling the vacuum
 - The boundary between physics, mathematics and AI is becoming increasingly productive
 - Uncle Scrooge discovers particle physics
 - Behind the Scenes of the Large Hadron Collider Upgrade
 - First CHIPP postdoc prize goes to PSI postdoc
 - Welcoming international students to Switzerland with S3P3
 - WWWCHIPP prize 2025: Top precision for top quarks
- Contact Katharina (kmueller@physik.uzh.ch)



- Information days for high-schools
- Visits to CERN (participants of Snakemake hackathon ((research) software engineers), group and other PSI members, PSI summer students, general public
- Interviews and podcasts
- Talks: Naturwissenschaftliche Gesellschaft St Gallen, Seniorenuniversität Winterthur & Zurich
- [Guided tours at PSI](#), [PSI iLab for schools](#)
- Mentoring within [fem-LEAD](#) at PSI and strong engagement in [SPS Women in Physics](#) program
- [PSI summer student programme](#), co-organiser Clemens Lange
- PSI [Particle Physics Summer School](#), 23-28 August 2026 organized by Harald Ita, Michael Spira and Peter Stoffer



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UZH Summary, Katharina Müller

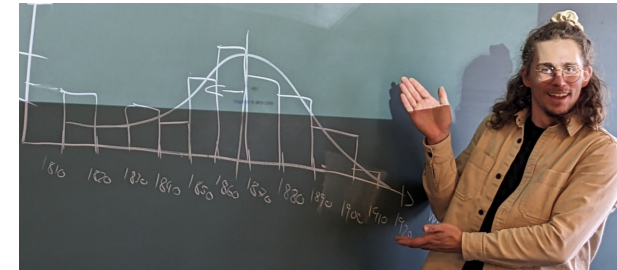
- Exhibition U_{ZH}N/EARTH at [Science Pavilion UZH](#) until February
- November: Open Day of the physics department
- March: CMS masterclass with 60 participants
- September: Long night of museums ask a scientist
- Many workshops for high school classes on particle physics and cosmology at [Science Lab UZH](#)
- Guided tours through the physics department for schools
- Guided tours through the physics exhibitions [Science Pavilion UZH](#) for schools and the general public and individual groups
- Visits to CERN for students and Alumni
- February: Schroedinger Colloquium, 100 Years of Quantum Mechanics including a dance on quantum mechanics
- Quantum Escape room
- Talks, eg at Seniorenuniversität Winterthur & Zurich, Seniorenkolleg Lichtenstein



EPFL Summary, Olivier Schneider

- November 3-7, 2025 5th online Ukrainian teachers programme, 85 registered participants, organized by Lesya Shchutka <https://indico.cern.ch/event/1589586/>
- Friday November 21, 2025 LPHE lab visit at EPFL for 20 high-school students, organized by Olivier Schneider with the EPFL physics section
- Tuesday March 3, 2026: LHCb Masterclass 2026 at EPFL, for 39 participants from high-schools in Saint-Maurice (VS), Sion (VS), Pully (VD) and Fribourg (FR), local organisation Olivier Schneider
- Friday March 28, 2026 LHCb Masterclass 2026 at EPFL, for 34 participants from high-schools in La Tour-de-Peilz (VD) and Fribourg (FR), local organisation Olivier Schneider
- Wed May 13, 2026: Visit at CERN (LHCb experiment, Science gateway) for 85 BSc students in physics from EPFL, organized by Radoslav Marchevski
- June 8-12, 2026: 3rd online Ukrainian students programme, 103 registered participants, organized by Lesya Shchutsk <https://indico.cern.ch/event/1675432/>
- July 13 - Sep 13, 2026: -participation in the Swiss Summer Student Programme in Particle Physics, with 3 interns hosted at EPFL, local organisation Lesya Shchutka <https://swiss.sspp.program.phys.ethz.ch/>

Masterclass in Lausanne



Geneva Summary, Tobias Golling, Anna Sfirla

- MasterClass with 28 students from four cantons.
- “Semaine décroisonnée” and “Option Complémentaire” at Collège Rousseau: College students are introduced to astrophysics, data analysis techniques used and eventually the detector technologies employed with the SST-1M telescope at the center of it.
- Nuit de la Science: When matter casts a muon shadow, attracted a large and diverse audience throughout the event.
- Salon International des Inventions de Genève 2026 (11 to 15th March), exhibition stand as part of the larger PhysiScope exhibit of the University of Geneva.
- **Various VIP visits** at the ATLAS visitors center or ATLAS cavern

International networks – IPPOG

Katharina Müller



International Particle Physics Outreach Group — <http://ippog.org>

The IPPOG collaboration comprises 47 members
32 countries, 7 experiments and CERN as an international laboratory and 2 associate members

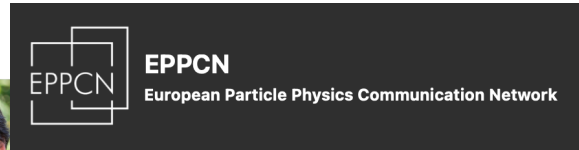
Organises masterclasses for more than 13'000 high school students a year



Lots of outreach material already available or being developed

International networks - EPPCN (European particle physics communication)

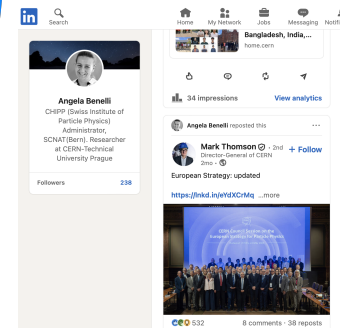
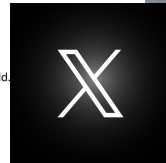
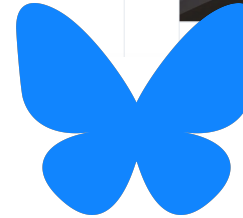
Angela Benelli



<https://eppcn.web.cern.ch>



chipp_news
CHIPP



Websites & Social Media

Besides the websites of the institutes and laboratories lots of additional activities

- particle theory, gravity and cosmology <https://un-solved.com/about/> (EPFL and Geneva)
funded by an Agora grant of the SNF
- particlephysics.ch
about one article/month on particle physics research, activities, results and their application
(supported by Swiss Academy of Sciences, SCNAT)
- IPPOG <http://ippog.org>, newsletter <http://ippog.org/news>