

Dear Reader,

You scientists shape this newsletter.

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. If you would like to share some news with us, please contact Celine.Lichtensteiger@UniGe.ch.

WHAT'S UP IN SWITZERLAND?

New EASAC report on transportation and greenhouse gas emission

The new report "*Decarbonisation of transport: road transport has a dominant role*" by the European Academies Science Advisory Council (EASAC) makes important recommendations to reduce greenhouse gas in transport, which are also relevant for Switzerland. Read the press release from the Swiss Academies of Arts and Sciences [here](#).



The report was presented on **5 April 2019** at the House of Academies in Bern by its main author [Prof. Konstantinos Boulouchos](#) (ETH Zurich, President of the Energy Commission of the Swiss Academies of Arts and Sciences) and discussed with [Roger Nordmann](#) (Member of Parliament), [Benoît Revaz](#) (Federal Office of Energy) and [François Launaz](#) (auto-suisse). [[more](#)]

(Image: sign with CO2 by Stockwerk-Fotodesign Adobe Stock)

International Physicists' Tournament - 22-26 April 2019, Lausanne

On 22-26 April 2019, EPFL will have the honour to host the 11th International Physicists' Tournament (IPT 2019) - the biggest international competition in physics for teams of university students. This event will bring together almost 200 undergraduate and graduate students, researchers and



professors and will be a real feast of fascinating experiments, brave theories and [spectacular physics fights](#)! If you are a PhD student or professor, you can become a jury member (send an e-mail to evgenii.glushkov@epfl.ch) and judge one or several physics fights. Or you can just come and watch the fights, including the Grand Final!

For all updates on the IPT2019, please check IPT's [website](#), [Facebook](#) and [Twitter](#).

Discovery of CP violation in charm particle decays by LHCb

CP violation is one of the key ingredients required to explain why today's universe is only composed of matter particles, with

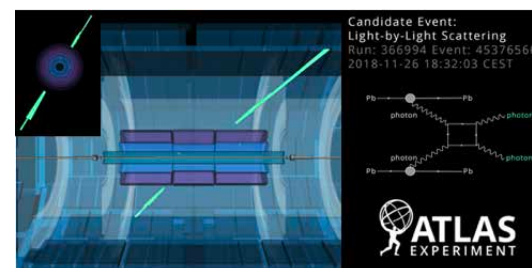


essentially no residual presence of antimatter. The [LHCb collaboration](#) has presented in a special [CERN Seminar](#) the first observation of CP violation in charm particle decays. Quarks can be split into two sectors: those with the same electrical charge as the up quark (up-type quarks, charge $+2/3$), and those with the same as the down quark (down-type quarks, charge $-1/3$). Differences in the properties of matter and antimatter, arising from the so-called phenomenon of CP violation, had been observed in the past using the decays of K and B mesons, i.e. of particles that contain strange or beauty quarks, which are both down-type quarks. By contrast, despite decades of experimental searches, CP violation in the decays of charmed particles, i.e. containing the charm quark, which is an up-type quark, escaped detection so far. The result announced last week constitutes the first observation of CP violation in decays of a charmed particle. The publication can be found [here](#).



ATLAS observes light scattering of light

Light-by-light scattering is a very rare phenomenon in which two photons – particles of light – interact, producing another pair of photons. This process was among the earliest predictions of quantum electrodynamics (QED), the quantum theory of electromagnetism, and is forbidden by classical physics theories (such as Maxwell's theory of electrodynamics). At the [Rencontres de Moriond conference](#) (La Thuile, Italy), the [ATLAS Collaboration](#) reported the [observation of light-by-light scattering](#) with a significance of 8.2 standard deviations. The result utilizes data from the most recent heavy-ion run of the LHC, which took place in **November 2018**. About 3.6 times more events (1.73 nb^{-1}) were collected compared to **2015**. The increased dataset, in combination with improved analysis techniques, allowed the measurement of the scattering of light-by-light with greatly improved precision. The conference note can be found [here](#).



Latsis Symposium on Diamond Photonics - 19-22 May 2019, EPFL

The symposium from **19-22 May 2019** at EPFL will be a unique event bringing together for the first time the worldwide leaders in diamond photonics. It will gather on EPFL campus the key international players of academic research in diamond physics and photonics, in diamond growth and fabrication technologies, together with companies engaged in bringing the applications of diamond photonics to the market. The Forum Rolex will be the meeting point for physicists, engineers, materials scientists, and entrepreneurs, with keynote, invited and contributed talks, and poster sessions, as well as a free [public lecture](#) by [Prof. Marko Lončar](#) on Sunday **19 May 2019**. [\[more\]](#)



Final of the Swiss Physics Olympiad

On the weekend of **16-17 March 2019**, 26 students competed in the final of the Physics Olympiad in the Neue Kantonsschule in Aarau. In total the students had to do six hours of theoretical and experimental exams. Among other tasks, they measured the density of oil and described the dynamics of toilet paper. We congratulate [Cédric Solenthaler](#), [Hiro Farré](#), [Jonas Hofmann](#), [Fabian Graf](#), [Nicolas Schmid](#), [Yanjun Zhou](#), [Noah Roux](#), [Robin von Reding](#), [Etienne Rösli](#) and [Ramòn Buchenberger](#), who have qualified themselves to represent Switzerland either at the International Physics Olympiad in Tel Aviv or at the European Physics Olympiad in Riga. Cédric Solenthaler from St. Gallen and Hiro Farré from Rolle achieved the highest scores and have therefore been awarded with the “*SPG Nachwuchsförderpreis / Prix SSP de la Relève*” of the Swiss Physical Society. [\[more\]](#)



(Picture: participants of the final round)

WHAT'S UP IN EUROPE?

QCALL Science Film Contest

Film contest open to teams from secondary (high) schools across Europe

Are you interested in quantum physics? Do you have an amazing idea for a new technology using quantum mechanics? Then share it by making a short video clip for the Science Film Contest to be first screened in Palermo in **September 2019!**



Three PhD students at the University of Geneva - [Antonio Ortu](#), [Davide Rusca](#) and [Gaëtan Gras](#) - are part of this European project aiming at promoting science and research to the general public, offering a contest for high school students to create a short video (3-7 minutes) regarding science. This competition is open to students accross Europe and prizes (€300) will be awarded for the best videos in **Septembre**. For more details on this competition, read [here](#) or contact gaetan.gras@etu.unige.ch before **15 April 2019**.

IDL2019, the Illuminating Education conference - 16 May 2019, Trieste

The event is the Flagship Celebration of the International Day of Light 2019 held at the UNESCO Category 1 Institute ICTP in Trieste on **16 May 2019**. Presentations will cover a wide range of topics, from inspiring science to practical career advice. The conference keynote speaker is ICTP Distinguished



**International
Day of Light**

16 May

Lecturer [Sir Michael Berry](#) from the University of Bristol who will present *Optica fantastica* - images to illuminate the physics of light, a topic ideally suited to engage interest and promote science outreach to the public of all ages. Attendance is free to whoever may wish to attend. Please find [here](#) the schedule for this fascinating event. [\[more\]](#)

ESOF2020 - EuroScience Open Forum - 5-9 July 2020, Trieste

Your Voice on Research in Europe

The EuroScience Open Forum 2020 Trieste is really coming alive. From today until **15 June 2019** it will be possible to submit proposals for the scientific programme of the event, which will take place from **5 to 9 July 2020** in the Old Port of the city. Key players from the world of science and technology, innovation, entrepreneurship, politics, communication and all those who want to bring innovative ideas, strategies and formats on the relationship between science and society can present their ideas through the website [here](#).

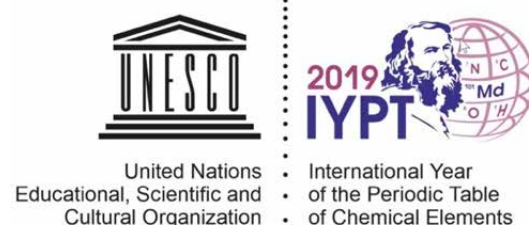


WHAT'S UP IN THE WORLD?

International Year of the Periodic Table (IYPT2019)

The Periodic Table of Chemical Elements is one of the most significant achievements in science, and establishing a most profound link between chemistry and (quantum) physics. In **2019**, there will be many interesting publications and events for science communication and education. For instance,

an interesting article about "*The women behind the periodic table*" was published in [Nature](#). A dedicated dossier for teachers has been prepared (in French [\[here\]](#)). The Swiss Physical Society is featuring the IYPT2019 in a special session on the *Genesis of Elements* at its [annual meeting](#), **26-30 August 2019** in Zürich. [\[more\]](#)



United Nations
Educational, Scientific and
Cultural Organization

International Year
of the Periodic Table
of Chemical Elements

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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