

Dear Reader,

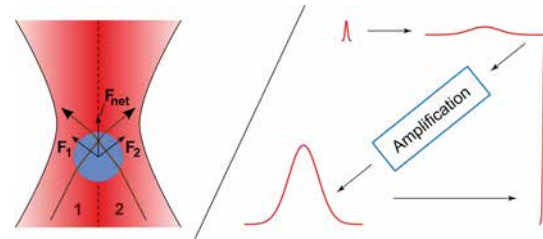
You scientists shape this newsletter.

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](mailto:Celine.Lichtensteiger@UniGe.ch).

## WHAT'S UP IN THE WORLD?

### 2018 Nobel Prize in physics awarded for important laser developments

The 2018 Nobel Prize in Physics has been awarded to Arthur Ashkin, Donna Strickland and Gérard Mourou. The Nobel Prize Committee selected the three awardees for their groundbreaking inventions in the field of laser science, albeit in rather different regimes



of laser parameters. Arthur Ashkin has been recognized for the invention of the optical tweezers that use tightly focused but relatively low-powered, continuous laser beams for trapping and manipulating objects from atomic and molecular up to microscopic dimensions. The optical tweezers find widespread use in biophysics as they allow for trapping and manipulation of viruses, bacteria, organelles and living cells. They also enabled force and motion measurements at the level of single molecules with pN force and Ångström positional sensitivity. The chirped pulse amplification (CPA) scheme invented by Donna Strickland and Gérard Mourou, on the other hand, enabled the scaling of peak power and intensity of femtosecond laser pulses by many orders of magnitude beyond what was previously considered possible by preventing damage of optical components and amplifiers through temporal stretching and subsequent recompression of the optical pulses. The peak power attainable with state-of-the-art CPA systems now reaches  $10^{16}$  W (10 PW). Both technologies recognized by this year's Nobel Prize in Physics are nowadays found in commercial products and cover a wide range of scientific applications. [\[more\]](#)

## WHAT'S UP IN SWITZERLAND?

### Wright Colloquium 2018 - Gravity, the universal attraction

*5-9 November 2018, 18h30, Geneva*

The 2018 edition of the Wright Colloquium will explore gravitation in all its aspects. A panel of speakers will discuss its use for interplanetary journeys, to the comet Churyumov-Gerasimenko for example, on which a probe was successfully landed in 2014. Gravitational extremes like black holes and gravitational waves will be presented, as will the



measurement of gravitational waves in detectors for which the boldest superlatives do not suffice. The complex links between gravitation and the quantum world will be examined.

These themes will be the topics of five public lectures given every evening of the week from **5-9 November 2018** at Uni Dufour in Geneva. [\[more\]](#)

## **Beyond impact factor, h-Index and university rankings: Evaluate science in more meaningful ways**

**21 November 2018, 13h30-17h30, Bern**

Impact and citation factors related to journals and publications as well as rankings of institutions are the best-known tools used to assess the scientific merit of the sheer volume of research output. Inadvertently, however, these measurements potentially undermine the quality in science because they incite violations of globally accepted research integrity principles with adverse effects.



This conference aims to: highlight the limitations of metrics in capturing scientific quality and the resulting pressure on the quality of scientific output; present assessment approaches that challenge conventional metrics; consider whether steps are necessary to maintain the high quality of the Swiss science landscape long-term. Programme/registration [here](#).

## **Faculty openings in condensed matter physics and quantum science & technology**

The Ecole Polytechnique Fédérale de Lausanne has recently published two calls for junior faculty positions at the Institute of Physics. The first call concerns a position in experimental Condensed Matter Physics and the second one advertises two openings in



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Quantum Science and Technology, one in theory and one in experiment. Candidates are expected to establish leadership in the respective area and strengthen the EPFL endeavor in these fields. EPFL is an equal opportunity employer and family friendly university. It is committed to increasing the diversity of its faculty and strongly encourages women to apply. The application deadline is **30 November 2018**. All the details can be found on the position announcements [\[position 1\]](#), [\[position 2\]](#).

## **Women in technology and computers - exploiting their potential**

**29 January 2019, 9h-16h30, Bern**

Many professions are chosen only by men. This is particularly the case in technology and computer science, in which the percentage of women is around 20%, sometimes even less than 10%. Why do talented young girls seldom choose technical professions? How to win them to technology and computer science?



The conference - organized by the Swiss Academy of Engineering Sciences [SATW](#) in partnership with the Federal Office for Gender Equality [BFEG](#) - offers the possibility of exchanging between professionals on acquired experiences.

The conference is free of charge, bilingual (German/French) and a simultaneous translation service is offered. Program/inscription available in German [\[here\]](#) or French [\[here\]](#).

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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