Joint annual meeting of Swiss and Austrian Physical Societies 2017

Monday 21 August 2017 - Friday 25 August 2017

Scientific Programme

The following topical sessions will be held during the conference. You can choose the appropriate topic for your contribution in the abstract submission form.

Applied Physics and Plasma Physics

Astronomy and Astrophysics

This session organised by the Swiss Society for Astrophysics and Astronomy is entitled "Interacting stars: from the origin of massive black holes to star-planet interactions." Contributed submissions related to this topic are welcome.

Contact: Georges Meynet (Georges.Meynet@unige.ch)

Atomic Physics and Quantum Optics

Biophysics, Medical Physics and Soft Matter

Condensed Matter Physics (incl. NESY)

The *Condensed Matter section* of the SPS and the *Fachausschuss Festkörperphysik* of the ÖPG encourage submission of abstracts to all related focussed sessions (see below). Further topics in Condensed Matter Physics e.g. magnetism, superconductivity, semiconductors, among others will be covered by the regular KOND program.
The *ÖPG Fachausschuss* "NESY" will be represented with appropriate sub-sessions, too.

Contact: Laura J. Heyderman (laura.heyderman@psi.ch), Patrycja Paruch (patrycja.paruch@unige.ch), Alberta Bonanni (alberta.bonanni@jku.at), Julian Stangl (julian.stangl@jku.at)

Correlated-Electron Physics in Transition-Metal Oxides

This session will focus on the experimental and theoretical aspects of the interplay between orbital, spin and lattice degrees of freedom in this class of materials, as well as in novel developments enabling their control. The presentations will cover advances in synthesis, characterization, design and property control of thin film, heterostructures and bulk oxide materials, as well as novel theoretical methods for the description of correlated electrons and for functional oxide design.

The session will include invited, contributed (oral) and poster presentations. The following invited

speakers have already confirmed their participation:
Eva Benckiser, Max Plank Institute, Stuttgart, Germany
Nicholas Plumb, Paul Scherrer Institute, Villigen, Switzerland
Oleg Peil, Materials Center Leoben, Austria

We particularly encourage young scientists to apply for oral contributions.

Contact: Maria Luisa Medarde Barragan (marisa.medarde@ psi.ch), Claude Ederer (claude.ederer@mat.ethz.ch), Antoine Georges (antoine.georges@polytechnique.edu), for the NCCR MARVEL

Earth, Atmosphere and Environmental Physics

Emergent phenomena in novel low-dimensional materials

The combined effect of quantum confinement and reduced screening enables emergent phenomena and unprecedented functionalities in low-dimensional systems. This session will focus on recent experimental and theoretical efforts in the discovery of novel low-dimensional materials, with particular emphasis on the design and characterization of their electronic, optical, and topological properties.

Contact: Marco Gibertini (marco.gibertini@epfl.ch), Oleg Yazyev (oleg.yazyev@epfl.ch), for the NCCR MARVEL

History of Physics

Magnetism and Spintronics at the Nanoscale

With this focus session we would like to highlight recent advances in the fabrication, measurement and control of novel functionalities in spintronic and nanomagnetic systems. We aim to bring together experimentalists and theoreticians from Switzerland, Austria, and the neighbouring countries exploring magnetic properties in thin films, interfaces, and nanostructures. Hans Hug (EMPA Dübendorf, Nanoscale Material Science) and Dieter Suess (TU Wien, Magnetic systems) will give invited presentations in this session.

Contact: Naëmi Leo (naemi.leo@psi.ch), Susmita Saha (susmita.saha@psi.ch), Laura J. Heyderman (laura.heyderman@psi.ch)

Nuclear, Particle- and Astrophysics (TASK - FAKT)

Physics in Startups

The section “Physics in Industry” will present a session centered on startup companies who are entering the market with new products or services which rely on physics-based phenomena. Invited speakers with physics and engineering backgrounds will describe the physics behind their products and give a first-hand account of their experience in recognizing the commercial viability of their idea and developing it to market maturity. Different sectors will be covered, such as new manufacturing approaches, advanced sensors, as well as energy and space applications.
If you are part of a startup with a physics background and would also like to present your work in the context of this session, please submit your request to the organisers including a short description of your proposed talk before the abstract submission deadline.

Contact: Patrick Ruch (ruc@zurich.ibm.com), Thomas Brunschwiler (tbr@zurich.ibm.com)

Scientific Opportunities with SwissFEL

X-ray free electron lasers (XFEL) have become available in recent years for researchers worldwide – a dream that finally came true 50 years after the invention of the optical laser and 40 years after the first theoretical work on FELs. These research facilities are bold examples of disruptive technologies: revolutionary instruments that expand the scope of what can be achieved in a field of science. The high potential of the new X-ray FEL sources for science and innovation seeded the development and construction of a number of facilities in the US, Europe and Asia. In Switzerland, after four years of construction, the commissioning of SwissFEL started in December 2016. Pilot experiments are expected to start by fall 2017.
The two sessions will be dedicated to present and discuss scientific opportunities opened up by this new facility in selected research fields including condensed matter physics, materials science and chemistry. Invited speakers will give an overview of the achievements and perspectives. The contributed talks will focus on the research goals of academic groups.

Contact: Luc Patthey (luc.patthey@psi.ch)

Surfaces, Interfaces and Thin Films

Theoretical Physics