PhD position in ultrafast lasers and intracavity HHG

Time and Frequency Laboratory, Physics Institute, University of Neuchâtel, Switzerland
Research Group of Prof. Thomas Südmeyer

Coherent extreme ultraviolet (XUV) light sources open up numerous opportunities for science and technology. Femtosecond laser-driven high harmonic generation (HHG) in gases is the most successful method for coherent table-top XUV generation. While initial HHG systems were limited to low repetition rates, the last years have seen a strong research effort on MHz systems. High repetition rates can strongly reduce measurement times, improve signal-to-noise ratio, and enable precision XUV frequency comb metrology. We are looking for highly motivated PhD student who would like to conduct research on MHz XUV sources based on HHG inside ultrafast thin disk lasers (TDLs), an approach which we recently successfully demonstrated in a project funded by the European Research Council. Due to the power-scalability of the thin disk concept, we expect that this new class of compact XUV sources has high potential for areas such as structural analysis of matter, attosecond science, XUV spectroscopy, and high resolution imaging.

Research topics
- Ultrafast thin disk lasers
- High harmonic generation
- Optical frequency combs
- XUV spectroscopy and imaging

What we provide
- Excellent research and working conditions
- Independent work with a high level of responsibility
- Competitive salary (1st year PhD: 59 kCHF)
- 4-year PhD contract

What we expect
- Enthusiasm for experimental research
- Highly motivated to work in the area of lasers and spectroscopy
- Ability to work in a team environment
- Master or diploma in physics, electrical engineering, or a related discipline
- Good oral and written communication skills in English (French language skills are advantageous, but not required)
- Independent working style

The position is immediately available. Applicants are encouraged to send a curriculum vitae, the diploma or master thesis, and provide names and contact information for at least two referees.

For questions and applications, please contact: job.ltf@unine.ch
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