Attosecond and Strong Field Physics

https://www.atto.uni-freiburg.de/de

PhD position

Attosecond metrology and nonlinear photoionization at free-electron lasers

Main responsibilities

- Data Analysis
- Participation to experimental beamtimes at free-electron lasers
- Development of simulation and analysis codes

What we offer?

- High impact physics project
- Access to state-of-the-art facilities
- Salary level: 66% E13

Required skills (preferred)

- Master in Physics or Engineering
- Solid background in atomic, molecular and optical physics.
- Solid background in programming (preferred Matlab and/or Python)
- Willingness to work in a team
- Curiosity and creativity

One PhD position in the field of attosecond and free-electron laser science is available in the attosecond and strong field physics group of the Albert-Ludwigs-University of Freiburg

(https://www.atto.uni-freiburg.de/en).

The main goals of the project are along two complementary directions:

a) novel approaches for the ***characterization of attosecond pulses and for the investigation of attosecond dynamics using free-electron lasers*** will be investigated. Recently the group demonstrated the generation of trains of attosecond pulses at the seeded free-electron laser FERMI (P.K. Maroju et al. Nature 578, 386-391 (2020)).

b) ***the nonlinear photoionisation mechanisms in small quantum systems*** (atoms and simple molecules) ***using intense soft X-ray pulses*** will be characterized. Experimental data acquired at the free-electron lasers FERMI and EuXFEL are already available (P. Carpeggiani et al. Nature Physics 15, 170–177(2019)).

The candidate will participate to future experimental beamtimes at free-electron laser facilities (FERMI and EuXFEL) and she/he will be in charge of the data analysis. The project will be conducted in close collaboration with the theoretical group of Prof. Dr. A. N. Grum-Grzhimailo of the Lomonosov Moscow State University.

The position is available from 01.02.2021 for a period of four years.

Applications (Curriculum Vitae and Motivation Letter) should be sent to the email giuseppe.sansone@physik.uni-freiburg.de

(deadline for applications **17.01.2021.**)

Interested, please contact

Prof. Giuseppe Sansone
giuseppe.sansone@physik.uni-freiburg.de
Tel: +49 761 203-5738