

Master thesis

The theory subgroup at the Laboratory of Attosecond Physics (LAP) is currently looking for a master student interested in computational physics to join our research on ultrafast electron dynamics in solids.

About us

In close collaboration with experimentalists, our group explores new ways to induce, control, and monitor electron dynamics with light [1]. By studying new regimes of nonlinear light-matter interaction, we investigate the fundamental speed limits of metrology and optoelectronic signal processing. Our primary goal is to develop theoretical descriptions and computational models for various processes that accompany the interaction of few- and subfemtosecond light pulses with solids and nanoscale objects. For our work, we use well-established methods, such as the time-dependent density functional theory, as well as our own models, designed to gain deeper physical insight into specific phenomena.

We require

- good grades in quantum mechanics, solid-state physics, mathematical courses, and numerical methods;
- hands-on experience with Python;
- basic knowledge of C++ or Fortran.

Interested candidates should submit their CV and bachelor transcript to

PD Dr. Vladislav S. Yakovlev
Max Planck Institute of Quantum Optics
Hans-Kopfermann-Straße 1
85748 Garching, Germany
email: vladislav.yakovlev@physik.uni-muenchen.de
phone: +49-89-32905-733
<http://www.attoworld.de/research/tap>

References

- [1] S. Yu. Kruchinin, F. Krausz, V. S. Yakovlev. *Colloquium: Strong-field phenomena in periodic systems*. [*Rev. Mod. Phys.* **90**, 021002 \(2018\)](#)