MAX-PLANCK-INSTITUT
FÜR QUANTENOPTIK

Prof. Dr. Thomas Udem

MAX-PLANCK-INSTITUT FÜR QUANTENOPTIK · POSTFACH 1327 · D-85741 GARCHING

In the Division of Laser Spectroscopy of Nobel laureate Prof. Theodor W. Hänsch, we employ the award-winning frequency comb technology to test the theory of quantum electrodynamics (QED) in highly precise spectroscopic experiments with simple atomic and ionic species. One of the ongoing research activities in our group focuses on the generation of vacuum-ultraviolet (VUV) frequency combs via high harmonic generation (HHG) in a noble gas target inside a passive enhancement resonator. Such a VUV comb is currently under investigation in the Horizon2020 Future Emerging Technologies project "nuClock": The lowest energy excited nuclear state of the thorium-229 isotope is expected to be optically accessible with VUV light and promises to be used in a nuclear atomic clock that could offer superior performance to existing atomic clocks. As one of the eight collaboration partners in "nuClock", we are currently looking for a committed PhD student who wants to join our experimental work towards VUV frequency comb spectroscopy and whose task will be to investigate how to adapt the existing laser system to be suitable for the thorium transition. For the time being the position is financed for one year through the nuClock project. To continue beyond this time frame the applicant is expected to contribute to the application process.

Your profile:
- You have completed your Master's studies in physics with an excellent degree.
- You have sound knowledge of and first practical experience and skills in the fields of laser physics, (nonlinear) optics, optical spectroscopy, or similar.

Additional Requirements
- You have a very good command of both written and spoken English.
- You are able to work independently.
- You are an excellent team player with good communication skills, interested in interdisciplinary and international collaboration.

If this project seems interesting to you and if you believe that you match the requirements you should send your application to:

Thomas Udem, thu@mpq.mpg.de