

**Position and research project (reference number DR/051/20):**

Research Associate / Ph.D. student (75% TV-L E13 | employment initially till 31.12.2021)

This position is embedded in the research project QUANTUS-IV MAIUS, which is carried out by the QUANTUS collaboration of seven German Universities and Research Institutes. QUANTUS (“Quantengase unter Schwerelosigkeit”) is funded by the German Aerospace Center (DLR) and aims to investigate ultra-cold quantum gases in microgravity.

The focus of MAIUS is the operation of a dual species atom interferometer using Bose-Einstein Condensates of Rubidium and Potassium in microgravity. To this end, MAIUS will perform atom interferometry aboard two sounding rocket missions launched from Kiruna, Sweden.

For suitably qualified candidates already holding a Ph.D. degree, this position might be upgraded to a Post-Doc position (depending on budget availability).

Tasks:

- Assembly, characterization and qualification of a laser system for dual species laser cooling and atom interferometry
- Software development (C++) and verification for autonomous operation of the laser system
- Integration of the laser system with other subsystems into the complete MAIUS sounding rocket payload (at the University of Hannover and/or the University of Bremen)
- Collaborative experimental work with the MAIUS payload (at the University of Hannover)
- Participation in two sounding rocket mission campaigns (Kiruna, Sweden)
- Work closely with other postdoctoral fellows, Ph.D. and Masters students
- Interact closely with academic partners in the QUANTUS collaboration
- Present research results in international journals and conferences

Scientific and technical competences:

Essential:

- Masters degree in physics (or in related fields with appropriate specialization)
- Excellent programming skills (preferably with substantial experience using C++)
- Willingness to travel and to spent substantial time at other laboratories of the QUANTUS collaboration (especially at the University of Hannover)
- Good team spirit and ability to work effectively in a collaboration

Desired:

- Practical experience with ultra-cold quantum gases and/or atom interferometry
- Expertise in the development and characterization of laser systems for laser cooling or precision measurement applications
- General laboratory skills (especially: optics, opto-mechanics, opto-electronics, RF-electronics)
- Good knowledge of analog and digital electronics
- Experience in computer aided design of electronic circuits and mechanics

Employment:

Humboldt-Universität zu Berlin
Mathematisch-Naturwissenschaftliche Fakultät
Institut für Physik
Berlin, Germany

Application (reference number DR/051/20) to:

Prof. Achim Peters, Ph.D.
Humboldt-Universität zu Berlin
Institut für Physik
Newtonstraße 15
12489 Berlin
achim.peters@physik.hu-berlin.de

Your application must include a curriculum vitae, copies of certificates and documents, a detailed description of your past or current research projects, and a list of publications, if available.

- HU is seeking to increase the proportion of women in research and teaching, and specifically encourages qualified female scholars to apply.
- Researchers from abroad are welcome to apply.
- Severely disabled applicants with equivalent qualifications will be given preferential consideration.
- People with a migration background are specifically encouraged to apply.