

**Position and research project (reference number DR/050/20):**

Postdoctoral Fellow (100% 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.

The position can, if applicable, be extended to and continued in a project aiming at the operation of a BEC apparatus aboard the international space station. Depending on the research interests of the applicant a stronger focus may be placed on the science of ultra-cold quantum gases and dual species atom interferometry in microgravity.

**Tasks:**

- System responsibility for the MAIUS laser system
  - Assembly, characterization and operation
  - Qualification for sounding rocket missions
  - Software for autonomous operation on sounding rockets
  - Characterization in experiments with ultra-cold Rubidium and Potassium
  - Lasers system support and participation in sounding rocket missions
- Project management and interaction with the funding agency
- Interact intensively with academic partners in the QUANTUS collaboration
- Work closely with other postdoctoral fellows, Ph.D. and Masters students
- Present research results in international journals and conferences

**Scientific and technical competences:**

## Essential:

- Ph.D. degree in physics (or in related fields with appropriate specialization)
- Expertise in the development and characterization of laser systems for laser cooling or precision measurement applications. Electro-optic characterization of laser systems (laser frequency noise, laser linewidth, optical power, etc.)
- Good team spirit and ability to work effectively in a collaboration

## Desired:

- Practical experience with ultra-cold quantum gases and/or atom interferometry
- Excellent programming skills (preferably with substantial experience using C++)
- Good knowledge of analog and digital electronics
- Experience in computer aided design of electronic circuits and mechanics
- Project management skills and experience

**Employment:**

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

**Application (reference number DR/050/20) 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.