

The Faculty of Mathematics, Informatics and Natural Sciences, Department of Physics, Institute of Experimental Physics invites applications for a

RESEARCH ASSOCIATE FOR THE PROJECT
“CLUSTER OF EXCELLENCE QUANTUM UNIVERSE”
MADMAX – AXION SEARCH EXPERIMENT
- SALARY LEVEL 13 TV-L -

The position in accordance with Section 28 subsection 3 of the Hamburg higher education act (Hamburgisches Hochschulgesetz, HmbHG) commences on **1 January 2020 or later**.

This is a fixed-term contract in accordance with Section 2 of the academic fixed-term labor contract act (Wissenschaftszeitvertragsgesetz, WissZeitVG). The term is fixed for a period of 3 years. The position calls for 39 hours per week.

RESPONSIBILITIES:

Duties include academic services in the project named above. Research associates may also pursue independent research and further academic qualifications.

SPECIFIC DUTIES:

The Cluster of Excellence “Quantum Universe” performs research to understand mass and gravity at the interface between quantum physics and cosmology. The research team includes leading scientists from mathematics, particle physics, astrophysics, and cosmology at Universität Hamburg and DESY.

The group is involved in R&D for a new experimental approach to search for Dark Matter axions with a mass around $100 \mu\text{eV}$ as favored by a class of theoretical models. The new approach makes use of magnetized dielectric media and dedicated RF antenna in the 1-100 GHz range. A prototype detector will be built and operated in the next three years. The group is responsible for the dielectric discs tiling, the booster mechanics, the discs positioning and alignment system. The group is further involved in the simulation of the experiment to determine its sensitivity.

This position is related to the development of a simulation platform for dielectric-based axion searches, as well as in the development of an algorithm for the iterative alignment of the dielectric discs during the experiment.

Postdoctoral research associates will become member of the Quantum Universe research school (QRS) and through this receive offers for academic training, soft skills, and career planning. In addition, they will receive individual budgets, meant to enable them to attend conferences or other educational and supporting measures. Additional travel money for project-specific duties will be made available via the hosting research groups. Postdoctoral research associates may participate in the supervision of doctoral students, teaching at the University, and in the organization of the Cluster via an early career council.

REQUIREMENTS:

A university degree in a relevant field plus doctorate. The applicant should fulfill the following requirements: profound competence in system simulation studies, numerical computation or extended experience simulating with CAD based tools; experience in machine learning techniques.

The University aims to increase the number of women in research and teaching and explicitly encourages women to apply. Equally qualified female applicants will receive preference in accordance with the Hamburg act on gender equality (Hamburgisches Gleichstellungsgesetz, HmbGleiG).

Qualified disabled candidates or applicants with equivalent status receive preference in the application process.

For further information, please contact Prof. Dr. Erika Garutti (+49 40 8998-3779 or erika.garutti@physik.uni-hamburg.de) or consult our website at www.qu.uni-hamburg.de.

Applications should include a cover letter, a tabular curriculum vitae, copies of degree certificate(s), and three letters of recommendation. Please send applications by **1 October 2019** to: gundula.serbser@desy.de and office@qu.uni-hamburg.de. Later applications will be considered until the position is filled.

Please do not submit original documents as we are **not** able to return them. Any documents submitted will be destroyed after the application process has concluded.