Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

1919 2019 100 JAHRE WISSENSWERFT Universität Hamburg

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

RESEARCH ASSOCIATE FOR THE PROJECT "CLUSTER OF EXCELLENCE QUANTUM UNIVERSE" INDIRECT DARK MATTER SEARCHES WITH THE TAIGA AIRSHOWER ARRAY

- 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 July 2019.**

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 search for dark matter particles at energies beyond the reach of collider experiments relies on indirect methods related to gamma-ray emission from astrophysical objects dominated by dark matter. The German/Russian air shower experiment TAIGA is already collecting data with an unprecedented collection area in the energy range between several TeV and tens of TeV. The successful candidate will implement improved analysis techniques for hybrid air shower reconstruction optimized for indirect dark matter searches. This includes development of methods based upon simulation and application to data. Additional themes of work relate to the improvement of air shower detection techniques, contributions to CTA, and phenomenology studies of particular dark matter annihilation signals from massive self-annihilating particles.

Postdoctoral research associates will become member of the Quantum Universe research school (QURS) 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. Experience in astroparticle physics, specifically data analysis, reconstruction and calibration methods, air shower and detector simulation. Advanced knowledge in programming (e.g. python, C/C++, Fortran), experience in the field of dark matter related research.

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. Dieter Horns (+49 40 8998-2202 or dieter.horns@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 April 2019** to: dieter.horns@physik.uni-hamburg.de and office@qu.uni-hamburg.de.

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.