



Universität Hamburg

DER FORSCHUNG | DER LEHRE | DER BILDUNG



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

RESEARCH ASSOCIATE FOR THE PROJECT “CLUSTER OF EXCELLENCE QUANTUM UNIVERSE” GW3: EARLY UNIVERSE GRAV. WAVE SIGNATURES - 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 September 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 26 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 candidate will conduct theoretical research on stochastic backgrounds of gravitational waves (GW) originating from the early universe, either as echoes from quantum gravity during inflation or as by-products of cosmological phase transitions. Detection of such signals would provide information beyond what can be reached at future particle colliders. A systematic investigation of mechanisms leading to observable GWs at Advanced LIGO, LISA and next-generation observatories, such as the Einstein telescope, complemented by CMB measurements is a new path to uncover the early universe micro-physics. Another aspect will be the production mechanisms of primordial black holes that may make up part or all of dark matter. Members of the team have expertise covering the whole spectrum of early-universe physics, inflation, (pre)heating, phase transitions, lepto/baryogenesis and dark matter generation and are part of the LISA cosmology working group.

Doctoral research associates will become members 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 summer schools, conferences or other educational and supporting measures. Additional travel money for project-specific duties will be made available via the hosting research groups. Doctoral research associates may actively participate in the organization of the Cluster via an early career council.

REQUIREMENTS:

A Master degree in Theoretical Particle Physics and Cosmology.

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. Géraldine Servant (phd-app-particle-th19@desy.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 at least two letters of recommendation. Please submit applications by **1 March 2019** via the following portal: <https://ias.desy.de/pls/apex/f?p=293:1:0:>. In case of problems, they can also be sent by email to phd-app-particle-th19@desy.de. Later applications are considered until the position is filled.