

The **Excellence Cluster ELEMENTS** at the Department of Physics of Goethe University at Frankfurt am Main, invites applications for four

Research assistants (PhD-Students) (m/f/d) (E13 TV-G-U, 65% part-time)

positions for a period of 36 months, **starting at the next possible date**. The salary grade is based on the job characteristics of the collective agreement applicable to Goethe University (TV-G-U).

The Excellence Cluster ELEMENTS is a collaborative research project of Goethe University Frankfurt, Technical University Darmstadt, Giessen University, and the GSI Helmholtz Centre for Heavy-Ion Research. It addresses the physics of binary neutron-star mergers from gravitational waves to the nucleosynthesis of heavy chemical elements and electromagnetic signals. This includes investigations of the r-process fission cycle and its impact on the natural synthesis of heavy chemical elements in binary neutron-star merger events, as well as studies of QCD matter under extreme conditions.

The Excellence Cluster ELEMENTS will consider applications for PhD positions in one of the following research areas:

- 1.1 Equation of state and transport properties of strong-interaction matter
- 1.3 Experiments on short-range correlations and predictions for neutron-rich nuclei
- 2.1 Improvement of constraints on the nuclear EOS of QCD matter at high net baryon densities based on present and future HADES data
- 2.3 Impact of the hadron-quark phase transition on binary neutron stars mergers
- 2.4 Modelling of binary neutron stars mergers and their multimessenger signal
- 4.2 Study of the r-process in binary neutron-star mergers

Students in ELEMENTS will become part of an international team of theoretical and experimental physicists focusing on basic research on the properties of matter under extreme conditions. The Excellence Cluster ELEMENTS offers a structured doctoral training program through which students will refine their hard and soft skills through a structured PhD program. In addition to funding for research and equipment, the Excellence Cluster ELEMENTS will provide generous funding for travel and a visitor programme.

Requirements:

- Master degree in Physics or related disciplines
- excellent English skills both oral and written
- expertise and strong interest in one of the research fields listed above
- strong analytic and numerical skills
- creativity, flexibility, high degree of scientific curiosity, determination to work in interdisciplinary teams

The application should clearly indicate which of the areas listed above is meant for and should comprise a CV and a list of publications if applicable. Applicants should also arrange for three letters of reference to be sent to the address below. Applications will have to be sent **by 15.06.2021** for full consideration. Applications should be sent electronically to: Fr. Astrid Steidl: steidl@itp.uni-frankfurt.de

Further information about all openings for PhD positions within ELEMENTS and details about the application procedure can be found below and here: https://www.uni-frankfurt.de/48794929/FB13_Physik.