

The German Center for Astrophysics (DZA) is a new research center in Lusatia, Saxony, that is currently being established. The decision to create the center was made on 29.09.2022 as part of the competition "Wissen.Schafft.Perspektiven für die Region!" ("Science Creating Prospects for the Region!"), which was launched by the Federal Government, represented by the Federal Ministry of Education and Research (BMBWF), the Free State of Saxony and the Land of Saxony-Anhalt as part of the Act on Structural Change in Coal Mining Areas (Strukturstärkungsgesetz Kohleregionen, StStG) to strengthen Germany's position as a leading location for science and innovation as well as the economic development of the regions affected by the coal phase-out. As a globally visible sign of innovation, the DZA will create new opportunities for strategic leadership roles in German astrophysics and have a lasting impact on structural change in Lusatia.

A three-year start-up phase began in 2023 with the aim of establishing the DZA as an independent institution in 2025. The start-up phase is being jointly organized by TUD Dresden University of Technology and the Deutsches Elektronen Synchrotron (DESY). There is a unique opportunity to actively contribute to the establishment of a large research center and to become involved in shaping future structures.

For TUD and DZA diversity is an essential feature and a quality criterion of an excellent university. Accordingly, we welcome all applicants who would like to commit themselves, their achievements and their productivity to the success of the whole institution.

The **DZA** offers, as part of the development, a position located in Görlitz as

Research Associate (m/f/x)

"Interferometer design for gravitational wave experiments"

(subject to personal qualification employees are remunerated according to salary group E 13 TV-L)

starting **as soon as possible**. The position is initially limited until December 31, 2025 with the option of extension/permanence at the DZA after its foundation. The period of employment is governed by the Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG). Balancing family and career is an important issue. The position is generally suitable for candidates seeking part-time employment. Please indicate the request in your application.

Tasks: scientific research and development work on the design and development of an underground laser interferometer prototype, which will serve as a technology demonstrator for the planned Einstein Telescope, a third-generation gravitational wave observatory:

- development of the laser interferometer design for a gravitational wave detector prototype that will be installed at a depth of more than 200 meters
- planning, design, construction, and execution of experiments at the limits of feasibility, limited by seismic and thermal noise as well as quantum noise
- research on subsystems (validation of sub-functions) using above-ground laboratory setups, including vacuum and cryogenic technology
- transfer of the results to the use case of the Einstein Telescope
- scientific exchange with colleagues in the Einstein Telescope Community
- close collaboration with the other scientific areas of the DZA, especially at the interface to radio- and multi-messenger astronomy, as well as between astrophysics and data science
- presentation of the obtained results at international conferences and publication in peer-reviewed journals
- supervision of Bachelor's and Master's students as well as doctoral candidates

Requirements:

- university degree (Master's/Diploma) in optoelectronics, laser technology, optical engineering, astrophysics, physics, or a comparable course of study
- several years of professional experience or a doctorate in one of the above fields
- ability to work under pressure, flexibility and adaptability in an evolving organization
- high level of communication skills, ability to work in a team and a proactive approach
- interdisciplinary way of working
- willingness to travel for business
- business fluent in English; knowledge of German is advantageous
- knowledge of the following is preferable:
 - Optics and multi-physics simulation
 - Control theory

We offer:

- the chance to contribute to the development of the largest research center for astrophysics in Germany
- the opportunity to play an active role in shaping structural change in Upper Lusatia
- the opportunity to establish the personnel requirements to support the discovery of groundbreaking research results and to contribute to the realization of research projects
- a dynamic, committed, international and interdisciplinary environment with renowned experts from science and industry
- remuneration according to TV-L, as well as conditions and social benefits of the public sector
- compatibility of family and career
- The possibility of permanent employment after the start-up phase.

The TUD and the DZA strive to employ more women in academia and research. We, therefore, expressly encourage women to apply. The University is a certified family-friendly university. We welcome applications from candidates with disabilities. If multiple candidates prove to be equally qualified, those with disabilities or with equivalent status pursuant to the German Social Code IX (SGB IX) will receive priority for employment.

Please submit your detailed application with the usual documents quoting the **reference number "w25-057"** by **March 31, 2025** (stamped arrival date or the time stamp on the email server of TUD applies), preferably via the TUD SecureMail Portal <https://securemail.tu-dresden.de> by sending it as a single pdf file to dza@tu-dresden.de or to: Deutsches Zentrum für Astrophysik (**DZA**), Herrn **Alexander Welk**, Postplatz 1, 02826 Görlitz, Germany. Please submit copies only, as your application will not be returned to you. Expenses incurred in attending interviews cannot be reimbursed.



Reference to data protection: Your data protection rights, the purpose for which your data will be processed, as well as further information about data protection is available to you on the website: <https://tu-dresden.de/karriere/datenschutzhinweis>.