Technische Universität Braunschweig

IGEP TU Braunschweig Institut für Geophysik und extraterrestrische Physik

Part time researcher / graduate student position in

Cometary Science

Three-year fixed-term position, Salary Level EG 13 TV-L, 75%

The Institute of Geophysics and Extraterrestrial Physics of the Technische Universität Braunschweig is looking to fill a researcher position (Entgeltgruppe 13 TV-L, 75%) as part of Prof. Jessica Agarwal's research group, **starting from the earliest possible date for a period of three years**.

The position will offer the possibility to work towards **obtaining a doctoral degree** from the Technische Universität Braunschweig and to acquire teaching experience. For the latter, knowledge of German will be an advantage.

The successful applicant is expected to carry out research on a project (funded by the German Research Foundation, DFG) to investigate the **emission of decimetre-sized chunks from comet 67P/Churyumov-Gerasimenko** by reconstructing their motion from imaging data of the OSIRIS camera on board the Rosetta spacecraft. The process underlying the emission of these chunks is currently not understood. The goal of this project is to obtain an overview of the conditions under which emission was and was not observed, in order to derive information on the emission process.

The position includes the **following tasks:**

- Familiarise with the current knowledge of chunk emission from comet 67P, including with available data and software to detect and track particles in OSIRIS images.
- Expand an existing python program to track particles in image sequences.
- Derive the motion of the detected particles from comparison to a state-of-the-art computer model of the gas flow from the comet.
- Determine the locations and times of chunk emission, and interpret these findings in terms of the physical conditions during emission.
- Publish the results in a relevant refereed journal and present them at international meetings.

International collaborators have agreed to support the tasks outlined above. Inquiries for details on the project and the position are welcome and should be addressed to Jessica Agarwal (contact details below).

Applicants must hold a Master's degree or equivalent in a relevant field, and combine dedication to scientific work with the ability to work in a self-organised and efficient way. Good command of written and spoken English is required. Knowledge of German will be beneficial. Familiarity with programming in, e.g., MATLAB, python, C(++), fortran, Julia, or IDL will be advantageous.

Applications should include a description of previous research (e.g., for a Bachelor and/or Master thesis), curriculum vitae, publication list if applicable, proposed starting date and the contact information of two potential referees. Applications should be sent by email as a single pdf file to Jessica Agarwal (j.agarwal@tu-braunschweig.de). **Review of applications will begin on 18 September 2024 and continue until the position is filled.**

Remuneration is in accordance with the collective agreement TV-L, pay grade E13 (75%), including 30 days of vacation per year. Social security benefits will be in accordance with public service regulations.

The **Institute of Geophysics and Extraterrestrial Physics** offers an active and interdisciplinary scientific environment with an open and collaborative atmosphere. Key research areas include Laboratory Astrophysics, Planet Formation, Space Physics, Applied Geophysics, and Small Body Astronomy and Exploration.

With about 16 000 students and 3 800 employees, **Technische Universität Braunschweig** is one of Germany´s leading institutes of technology. We offer flexible working and part-time options, and a family-friendly university culture. We welcome applicants of all nationalities. We encourage people with severe disabilities to apply. Applications from severely disabled persons will be given preference if they are equally qualified. Please attach a proof of disability to your application. We are also working on the fulfilment of the Central Equality Plan based on the Lower Saxony Equal Rights Act (Niedersächsisches Gleichberechtigungsgesetz—NGG) and strive to reduce under-representation in all areas and positions as defined by the NGG. In this case, applications from women are particularly welcome.

The personal data will be stored for the purpose of processing the application. By submitting your application, you agree that your data may be stored and processed electronically for application purposes in compliance with the provisions of data protection law. Further information on data protection can be found in our data protection regulations at https://www.tu-braunschweig.de/datenschutzerklaerung-bewerbungen. Application costs cannot be reimbursed.

Full contact information:
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