PhD position in UAV-based glacier monitoring and boundary layer research at FAU (Germany) (1.3.2025) (AG A. Groos)

Department Geographie und Geowissenschaften, Erlangen, TV-L E 13, Teilzeit, Befristete Anstellung, Bewerbungsschluss: 15.12.2024

Ihre Aufgaben

Within the framework of the newly funded Franco-German research project FlyHigh, the Institute of Geography at the Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) in Erlangen, Germany, seeks a motivated candidate for a PhD position (desired start is March 2025).

The FlyHigh project is a collaborative endeavour between the Glacier Systems & Natural Hazards Group at FAU and the Drones & UTM Chair at the École Nationale de l'Aviation Civile (ENAC) in Toulouse, France. The project aims to develop a modular, lightweight and versatile open-source Unoccupied Aerial System for photogrammetric surveys and atmospheric soundings in glacierised high-mountain environments. A particular focus of the project will be on dynamic and small-scale processes in alpine terrain that are not well represented or parameterised in numerical glacier models, such as glacier-atmosphere interactions or the influence of spatially highly variable supraglacial debris on ice melt. Together with ground-based observations, the novel UAV-based monitoring and sounding techniques will provide detailed insights into the characteristics and dynamics of the glacier surface and the structure of the overlying atmospheric boundary layer.

Your responsibilities:

- Close collaboration with the UAV engineers on the specifications and final design of the proposed Unoccupied Aerial System
- Further development of the existing open-source pipeline for the processing of UAV data (e.g. multispectral and thermal infrared imagery, meteorological measurements)
- Preparation of field work and UAV surveys/soundings on different glaciers in the Alps
- Processing and analysis of aerial imagery and meteorological data, generation of glacier maps (e.g. debris thickness, albedo, velocity, surface melt)
- Publication of results in international peer-reviewed journals

Ihr Profil

Notwendige Qualifikationen:

- MSc degree in Geography, Earth Sciences, (Geo)Physics, Engineering or related fields
- Strong background in at least one of the following subjects: glaciology, geomorphology, meteorology, photogrammetry, UAV technology
- Ability to work independently, to critically appraise scientific findings and to collaborate within an

international and interdisciplinary research team
- Affinity for fieldwork in alpine terrain and cold environments
- Programming skills (Python, R)
- Experience in scientific writing and good level of spoken and written English

Stellenzusatz

Befristetes Forschungsvorhaben

What we offer:

- A good working atmosphere and varied tasks in an international research environment
- Access to state-of-the-art methods, equipment and measuring instruments
- Extensive training opportunities
- Access to the qualification programme of the International Doctorate Program „Measuring and Modelling Mountain glaciers and ice caps in a Changing ClimAte (M³OCCA)“
- Flexible working hours and conditions
- Work place in the Nuremberg Metropolitan Area

Employment details:

- Start date: 1 March 2025 (or as soon as possible thereafter)
- Type of contract: fixed-term (36 months), part-time (75 %)
- Salary group: E13 TV-L
- Place of work: Institute of Geography (FAU), Erlangen, Germany

How to apply:Please send your application by email (subject: „FlyHigh Application“) as a single PDF file (max. 5 MB) to Dr. Alexander R. Groos (alexander.groos@fau.de).**Deadline for applications is 15 December 2024.**

The application should include:

- Cover letter stating your background and motivation for the project (max. 1 page)
- Curriculum vitae (max. 2 pages)
- Degree certificates including transcript of records
- Optional: other relevant certificates
- Optional: letter of recommendation

Supplementary notes:

- The following applies to all job advertisements: The Friedrich-Alexander-Universität promotes the professional equality of women. Women are therefore expressly encouraged to apply.
- Severely disabled persons within the meaning of the Severely Disabled Persons Act will be given preferential consideration if they have the same professional qualifications and personal suitability, if the advertised position is suitable for severely disabled persons.
- At the applicant's request, the Equal Opportunities Officer may be consulted during the interview without any disadvantages for the applicant.

Interessiert?

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