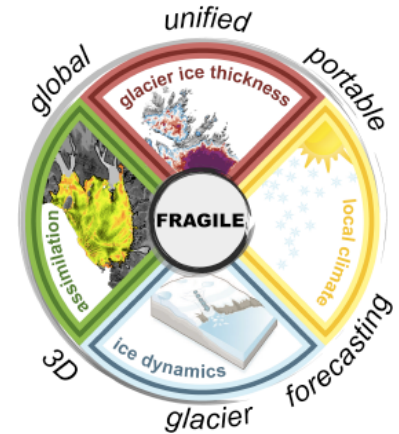




The Institute of Geography invites applications for a **PhD position** at the Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) in Erlangen, Germany. The position will preferably **start in December 2022**.

The position is part of the FRAGILE project on the 'Next generation framework for global glacier forecasting' funded by the European Research Council as a Starting Grant within Horizon 2020. The aim is to develop a self-consistent, ice-dynamic forecasting framework for global glacier evolution that will lift the confidence in forward projections for this century. The heart of the framework is the systematic utilisation of the rapidly growing body of information from satellite remote sensing. For this purpose, we pass on to ensemble assimilation techniques that transiently consider measurements as they become available. This will streamline and increase the total information flow into glacier system models. The envisaged 3D finite-element modelling framework will further allow for a more realistic representation of the local energy balance, a comprehensive description of the ice-dynamic adjustment as well as a state-of-the-art approach for iceberg calving. FRAGILE is coordinated by Dr. Johannes Fürst who has a track record in glacier-system modelling and data assimilation on various scales<sup>1</sup>.



**PhD**

refer to: FRAGILE-PhD

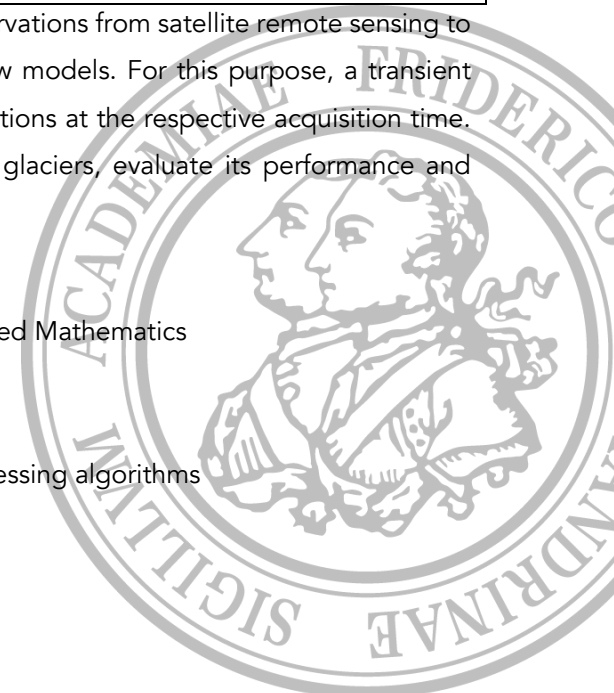
3 years, 67%, Entgelt-/Bes.Gr. E13.

The PhD candidate will deal with the systematic utilisation of observations from satellite remote sensing to substantially increase the overall information transfer into ice-flow models. For this purpose, a transient variant of data assimilation will be applied that considers observations at the respective acquisition time. The candidate will adapt this assimilation framework to calving glaciers, evaluate its performance and transfer it to regional scales.

*Required skills:*

- MSc in Earth Sciences, Physics, Computer Sciences, Applied Mathematics or a related field with an excellent grade
- Programming skills (Fortran, Python, R, Julia or similar)
- Affinity for scientific computing and development of processing algorithms
- Good reporting and presentation skills
- Excellent level of written and spoken English

<sup>1</sup> <https://www.geography.nat.fau.eu/startseite/glacier-group/>





- Ability to work independently, to critically assess own results and to cooperate within a wider research team

*Desired and advantageous are :*

- Interest for understanding Earth System processes and their complex interactions
- Affinity for geophysical modelling and remote sensing with regard to glaciological topics
- Experience or interest in big data handling, high-performance computing or cloud computing
- Demonstrated capacity for independent thinking and diligence

Proficiency in German is advantageous but not required, as the working language is English.

The candidates will be placed at the FAU Institute of Geography (<https://www.geographie.nat.fau.de/>), which offers a vivid working environment with specific research focus on mountain regions. Close interaction is anticipated with the Climate System Research Group by Prof. Thomas Mölg (<https://www.geography.nat.fau.eu/research/ag-moelg/>) and the Remote Sensing Group by Prof. Matthias Braun (<https://www.geography.nat.fau.eu/research/ag-braun/>).

The desired starting date is December 2022. The employment is limited to 3 years due to project funds with a possibility for extension (e.g., other third-party funding). Depending on qualification and personal requirements, this position is grouped into the Entgelt-/Bes.Gr E13.

The Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) is seeking to augment the number of women in research and teaching and specifically addresses female scientists to apply for this position. We further encourage persons with disabilities to apply. If desired, a member of the equal opportunity office of FAU can participate in the selection process without any disadvantage for the applicant.

For your application, please send a single PDF to [sabine.donner@fau.de](mailto:sabine.donner@fau.de) stating FRAGILE-PhD as subject.

The PDF should comprise:

- cover letter (stating your background and enthusiasm for this project)
- CV
- transcript of records, other certificates (if any)
- two reference letters (if any)

**Deadline for application:** 15 august 2022, the position is open until filled.

Further information:

Dr. Johannes Fürst, Institute of Geographie, FAU

phone: +49-(0)9131-85-26680, e-mail: [johannes.fuerst@fau.de](mailto:johannes.fuerst@fau.de)

