The Department of Geography at the Faculty of Geo- and Atmospheric Sciences at the Leopold-Franzens University of Innsbruck seeks to fill a

Postdoctoral Researcher or PhD Student position
in Alpine snow modelling at the regional scale (30 h / week)

to start on 1 October 2025. Project duration is 3 years.

We seek an individual who pursues innovative research in the field of physically based modelling and prediction of the seasonal snow cover evolution at the regional spatial scale. The modelling system to be developed combines subseasonal to seasonal forecast data, spatially distributed, physically based mountain snow modelling and snow maps derived from satellite data to be assimilated. The combined snow forecasting framework will be applied to the Alpine region of the EUREGIO Tyrol – South Tyrol – Trentino. Performance will be assessed for different lead times and spatial resolutions.

The successful candidate should be particularly interested in the physically based simulation of the Alpine snow cover evolution. The data used in the project comprise manyfold datasets of different origin, i.e. local meteorological observations, weather model simulations, satellite images of the snow cover and snow model simulation outputs of different resolutions and time scales.

The open position is embedded in the *Fram3S* project, a research cooperation between the University of Innsbruck (Austria), the EURAC Bolzano (Italy) and the University of Trento (Italy). *Fram3S* is funded by the EUREGIO Science Fund 2025. The researcher to be hired will be member of the working group „Human-Environment Systems Research" at the Department of Geography of the Faculty of Geo- and Atmospheric Sciences at the Leopold-Franzens University of Innsbruck, lead by Prof. Ulrich Strasser. Depending on the individual qualification, both the employment of a postdoctoral researcher or a PhD student is possible (30 h / week).

As an outcome of the scientific track of the working group in Innsbruck, the open source mountain snow model openAMUNDSEN has been continuously developed during the past years (https://github.com/openamundsen/openamundsen). This model – written in Python – will be applied and further developed in the project.

TASKS

- Analysis of weather model and satellite data sets for the EUREGIO Tyrol – South Tyrol – Trentino
- Setup, application and further development of the openAMUNDSEN mountain snow model
- Development of a framework for the assimilation of satellite data

- Evaluation of the simulation results for different lead times and spatial resolutions
- Close cooperation with the project partners in Bolzano and Trento
- Scientific publication of research methods and results.

REQUIREMENTS

- Master degree or PhD in a relevant discipline, e.g. environmental sciences, meteorology or hydrology
- Solid experience in programming (Python and/or R)
- Experience in numerical modelling
- Motivation to work with a numerical snow model
- Motivation to process large datasets, i.e. weather model output and satellite images
- Systemic thinking and communication skills for team work
- Fluency in English
- At least basic knowledge of German
- For PhD student candidates: Strong motivation to achieve a PhD degree.

The successful candidate will enter a 3-year working contract for 30 h per week, either as a postdoctoral researcher or as PhD student (depending on the qualification). Workplace will be Innsbruck/Austria. A salary according to the Austrian Collective Labor Agreement for University personnel with a wage of € 3.699/month (postdoctoral researcher) or € 2.786/month (PdD student) (14 times per year) is foreseen.

The Leopold‐Franzens‐University Innsbruck seeks to increase the proportion of females in the faculty. Applications from qualified female scientists are therefore especially encouraged. In accordance with Austrian disability laws, qualified people with special requirements are especially encouraged to apply.

If you are interested, please send your documents (motivation letter, CV, graduation certificates) to ulrich.strasser@uibk.ac.at.

We are looking forward to receiving your application by 15 June 2025.