

Researcher (post-doctoral)

Ecole/Institution/Société:

Université Grenoble Alpes, France / Saint-Martin-d'Hères

Discipline:

Computational Engineering

Type d'emploi::

Full-time

Date de publication:

2025-02-11

Personne à contacter:

If you wish to apply for this position, please specify that you saw it on AKATECH.tech

Researcher (post-doctoral) in scientific computing and spatial remote sensing

Presentation of the structure

The Institute of Environmental Geosciences is a French public research institution under the supervision of the CNRS Terre & Univers, the IRD, the Université Grenoble Alpes (UGA), Grenoble-INP and INRAE. It brings together approximately 330 people, including 190 permanent members (researchers, associate and full professors, research engineers), and approximately 140 doctoral students, post-doctoral researchers and permanent-term staff.

The Institute also welcomes several dozen interns and scientific visitors each year. The Institute is located on three sites of the Grenoble University Campus (Molière, OSUG-B, and Maison Climat Planète sites). The IGE is one of the main laboratories of the Grenoble Observatory of Universe Sciences (OSUG), which is a federal structure of the National Institute of Universe Sciences (INSU) of the National Center for Scientific Research (CNRS).

You will carry out your mission within the Climate, Cryosphere and Hydrosphere

(C2H) team of the IGE. You will be placed under the responsibility of Ghislain Picard and will join the snow remote sensing group which brings together Laurent Arnaud (permanent IR CNRS), Pierre Zeiger (post-doctoral fellow UGA and CNES), Marta Stentella (PhD student), and Sara Arioli (post-doctoral fellow).

<http://www.ige-grenoble.fr>

<https://www.ige-grenoble.fr/-C2H-Climate-Cryosphere-and->

Main missions

The general objective is to contribute to the development of the SMRT radiative transfer model for a wide range of microwave sensors (all-frequency radiometer, radar, altimeter, GNSS) and for application on snow, firn and ice caps.

A specific objective, which will represent a majority of the working time, is to improve the estimation of the temperature profile in the ice caps from low-frequency microwave data (<1 GHz). This objective is part of the CryoRad mission recently selected by the European Space Agency (ESA) for

the Earth Explorer 12 program. Our group seeks to estimate the internal temperature profile of the ice caps. To do this, two axes are to be developed.

First, it is about improving the modeling of the microwave emission of the polar ice caps in relation to their internal structure by taking into account the effects of low frequencies. Second, it is about continuing the development of a Bayesian algorithm to estimate the temperature profile from existing or simulated observations.

Main activities

- Microwave modeling of ice and snowpack emission
- Improved estimation algorithm
- ESA Project Management (Reports)
- Writing scientific articles

Travel to meetings with the European Space Agency (ESA), to maintain collaboration with the Institute of Applied Physics in Florence, Italy (IFAC) and to conferences in Europe to present scientific results.

Expected skills

- Knowledge of numerical modeling
- Knowledge of spatial remote sensing and/or radiative transfer
- Knowledge of inverse method, statistics or machine learning
- Know how to program in Python
- Written/spoken English
- Know how to work in a team

Remuneration

From €3,020 gross per month and depending on experience.

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