



Researcher (m/f/d) for the project **Advancing Global Soil Salinity Assessment Through Hyperspectral Remote Sensing**

Institute of [Geo-Hydroinformatics](#)

Start of employment as soon as possible

Remuneration 2760 Euro/month before taxes

Application deadline October 27th 2025

Scope full time and for a maximum of four years

The [UNU Hub on Engineering to Face Climate Change](#) was founded to address critical challenges related to water, soil, and the environment. In line with this mission, this scholarship has been established to tackle soil salinization, a pressing global challenge. In collaboration with the UK Centre for Ecology & Hydrology, the Institute of Geo-Hydroinformatics is seeking a researcher to apply hyperspectral remote sensing, data-driven approaches, and modeling techniques to investigate the dynamics of soil salinization worldwide. The project aims to identify salinity hotspots and assess their changes over time under different boundary conditions. Hyperspectral remote sensing, with its capacity to detect subtle spectral variations in soil and vegetation, offers a unique opportunity to map, monitor, and model soil salinity gradients. The successful applicant will therefore use a broad array of tools, including hyperspectral remote sensing, big data

analytics, field measurements, and artificial intelligence, to advance our ability to quantify soil salinization and improve understanding of its interactions with global environmental change.

YOUR TASKS

- Develop spectral indices and models for detecting soil salinity from hyperspectral imagery
- Characterize spatial and temporal patterns of salinity across different land cover including coastal wetlands
- Assess the implications of salinity patterns for sustainable land management under different climate scenarios and agricultural intensification
- Publish research in leading peer-reviewed journals and present findings at scientific meetings and conferences
- Assist with tasks as assigned by the Head of the Institute and engage in research collaborations with other universities and institutes through visits as needed
- An opportunity to travel and conduct field work in saline prone parts of Europe is an option

YOUR PROFILE

- MSc degree in environmental engineering, hydrology, soil physics, fluid mechanics, or a closely related field
- Proven research experience in remote sensing and soil-related studies, ideally demonstrated through high-quality peer-reviewed publications, strong academic performance, and recognitions
- Excellent communication skills in English (both oral and written)
- Commitment to international collaboration, teamwork, and student supervision, if required

Please note that in order to ensure transparency, we can only consider applications submitted via the university's online application system

OUR OFFER

- We offer the opportunity for scientific qualification towards a PhD degree
- Working experience in a very international, stimulating, multidisciplinary and dynamic institute
- Access to state-of-the-art experimental and numerical tools and platforms
- Possibility to collaborate with internationally recognized scientists
- High level of personal responsibility and freedom in your work

At the heart of TU Hamburg's research, teaching and transfer of technology is the guiding principle of developing technology for people. The TU Hamburg sees itself in this context as a family-friendly and sustainable university with high performance and quality standards that strives for excellence in all its research fields. Interdisciplinarity, innovation, regionality and internationality are binding principles in our actions.

With currently around 8.000 students, 110 professors and 1.650 employees, the TU Hamburg is characterised by short decision-making processes and close cooperation between the board, the institutes, the deans of studies, the research areas and the administration. We identify ourselves with a modern leadership culture and cultivate appreciative interaction.

For further information please contact Eva Bayley, Tel.-Nr. [+49 40 428 78 28 71](tel:+4940428782871), email: eva.bayley@tuhh.de

We value diversity, therefore all applications are welcome, regardless of gender, gender identity, ethnic origin, nationality, age, religion and belief, disability, sexual orientation and identity or social background.

The TUHH stands for [equal opportunities](#) as well as [appreciative and respectful cooperation](#).

Please send your complete application documents (cover letter, curriculum vitae in table form, proof of completed training and/or university degree, job references or certificates of employment) via the online application system.

[Notice for severely disabled persons and people with equal status.](#)

Notice for graduates of foreign educational qualifications:

Please submit proof of all obtained university degrees and, if available, the recognition of your educational qualifications in Germany (e.g. anabin excerpts and/or acknowledgement of previous employers).

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