Technische Universität Berlin

Research Associate (PostDoc) - salary grade E13 TV-L Berliner Hochschulen - 2nd qualification period (Habilitation)

part-time employment may be possible

Faculty V - Mechanical Engineering and Transport Systems, Institute of Fluid Dynamics and Technical Acoustics / Smart Water Networks
Reference number: V-394/25 (starting at 01/02/26 / for 5 years / closing date for applications 03/10/25)

About us:

The Smart Water Networks research group (https://www.tu.berlin/en/swn/) investigates how digi-tal technologies can support urban water management and modelling and management of human-water systems. Our research mission is developing data-informed and transferrable algorithms and sensor-based technologies that support sustainable, cost-effective, and just decision making, cli-mate adaptation, awareness, and sustainable behavior.

We are currently looking for a highly motivated Post-doc researcher to join our team. In this role, you will develop and apply state-of-the-art methods in uncertainty quantification to advance re-search and practice in water resources systems modelling and water-energy infrastructure planning and management, with opportunities for interdisciplinary collaboration and real-world impact.

This position offers the opportunity to engage in cutting-edge, interdisciplinary research with real-world applications, while also contributing to innovative teaching activities. Teaching responsibilities will center on topics at the intersection of data science, uncertainty quantification, and sustainable water management, with the flexibility to shape new formats that reflect emerging challenges in the field.

Your responsibility:

- Conduct in-depth literature reviews on uncertainty quantification, water resources systems modeling, and decision-making frameworks for sustainable water management
- Develop, apply, and evaluate advanced methods for uncertainty quantification and sensitiv-ity analysis in the context of water resources planning, management, and climate adapta-tion
- Collect, preprocess, and integrate diverse datasets - including hydrological time series (e.g., rainfall, streamflow), geospatial information (e.g., catchment characteristics, land use), and socio-economic indicators - to support robust water systems modeling
- Publication of the research outcomes in peer-reviewed scientific publications
- Contributions to developing new teaching modules combining the domains of uncertainty quantification, sensitivity analysis, and water management
- Support with BSc/MSc thesis on topics related to the project main topic

Your profile:

- Successfully completed university degree (Master, Diplom or equivalent) in Physical Engineering Science, Mechanical Engineering, or related fields and a Completed PhD in Computational Engineering or related field
- Very good knowledge of and demonstrated experience in probabilistic mathematical modelling and statistics, particularly in the fields of uncertainty quantification/error propagation/sensitivity analysis and anomaly detection
- Experience with application of uncertainty quantification techniques in the water sector (water resources management, fluid systems)
- Excellent programming skills in Python and Matlab
- Experience in teaching and BSc/MSc thesis supervision in the field of statistics and data science
- Experience in managing scientific projects
- Familiarity with version control and HPC environments
- Very good written and oral language skills in English
- Ability to work independently and collaboratively in interdisciplinary teams desirable
- Good computer skills in C++ desirable
- Experience with writing research project proposals desirable
- Background or interest in sustainable water systems, climate informatics, or water management desirable
- Good written and oral language skills in German desirable

How to apply:

Please send your written application in English with the **reference number** and the usual docu-ments (cover letter, CV with final grades, Doctoral certificate, certificate of Master´s degree and other relevant certificates) **only by e-mail** to Prof. Dr. Cominola (**office-k2@fsd.tu-berlin.de**) – Technische Universität Berlin, Fakultät V, Institut fu?r Strömungsmechanik und Technische Akustik, FG Smart Water Networks, Prof. Dr. Cominola, Sekr. FSD, Straße des 17. Juni 135, 10623 Berlin.

By submitting your application via email you consent to having your data electronically processed and saved. Please note that we do not provide a guaranty for the protection of your personal data when submitted as unprotected file. Please find our data protection notice acc. DSGVO (General Data Protection Regulation) at the TU staff department homepage: https://www.abt2-t.tu-berlin.de/menue/themen_a_z/datenschutzerklaerung/.

To ensure equal opportunities between women and men, applications by women with the required qualifications are explicitly desired. Qualified individuals with disabilities will be favored. The TU Berlin values the diversity of its members and is committed to the goals of equal opportunities. Applications from people of all nationalities and with a migration background are very welcome.

The vacancy is also available on the internet at:
https://www.jobs.tu-berlin.de

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