



Open Postdoctoral Position on

Transport and exchange processes of shallow flows at water-soil and water-sediment interfaces

The *Institute for Hydromechanics (IfH)* at the *Karlsruhe Institute of Technology (KIT)* invites applications for a postdoctoral-fellow position focusing on research on water-soil and water sediment interfaces. Related teaching activities are primarily for the master's degree program *Water Science and Engineering (WatSciEng)*, which is housed at the *KIT Department of Civil Engineering, Geo- and Environmental Sciences* and involves more than 20 work groups from several KIT departments (see also [Water Research at KIT](#)).

The successful candidate is expected to perform research on transport and exchange processes at water-soil and water-sediment interfaces of shallow flows. Possible areas of research include (i) the interaction and exchange of shallow surface flows with sediments and surface structures such as rills (ii) the transport and exchange of conservative and reactive contaminants including particle-bound pollutant transport, (iii) the interaction of shallow surface flows with plants and biofilms. Special emphasis is also on how momentum and energy exchange between fluid and sediment, control pattern formation at different scales.

The primary method of approach is expected to be laboratory modeling and analysis, with an optional combination with numerical modelling. Innovative methods should be applied and developed with a view to transpose methods and results towards large-scale laboratory simulations as well as field and modeling approaches. The candidate will be collaborating with other researchers from the IfH institute as well as other institutes in the faculty and at KIT and contribute to the development, implementation and running of new research environmental infrastructures. The candidate is expected to apply for external research funding.

The successful candidate will participate in ongoing and new teaching activities within the International Master of Water Science and Engineering and assist the speaker in the management, organization and support of the students.

The successful candidate holds a doctorate in environmental fluid mechanics, hydrology or related areas with a strong focus on flow processes. A good knowledge of turbulence as well as experience in novel experimental methods is strongly recommended. Direct experience in turbulent flows over porous media is desirable. Experience with hydraulic infrastructures is a plus.

The candidate is fluent in written and spoken English. German is not required but successful candidates are encouraged to learn the language.

The appointment will begin November 1st, 2023 and will be for two years with possible extension. The salary will be according to the wage agreement of the civil service TV-L EG 13 commensurate with qualifications and experience.

Applications (preferably in one pdf file) should provide a short statement of interest, a curriculum vitae, copies of two relevant publications and letters of reference with contact information. Applications and further inquiries should be sent to Prof. Olivier Eiff olivier.eiff@kit.edu. The application deadline is September 15, 2023.