The Chair of Hydrology in the Faculty of Environment and Natural Resources at the University of Freiburg, Germany, is offering a

PhD position in ecohydrology

starting September 2022 according to the government scale TVL 13 (at 75%) ending June 2026. The position is funded by the German Research Foundation (DFG) within ECOSENSE (SFB 1537) - Multi-scale quantification and modelling of spatio-temporal dynamics of ecosystem processes by smart autonomous sensor networks. The project A2 "Linking carbon and water fluxes in trees to the soil and atmosphere using in-situ NMR and ecohydrological sensor cluster" is located at the Chair of Hydrology (Prof. Dr. Markus Weiler) at the University of Freiburg, Germany. The project is in cooperation with the Chair for Ecosystem Physiology and the Institute of Microstructure Technology (IMT) at Karlsruhe Institute of Technology (Prof. Dr. Jan Korvink and Dr. Mazin Jouda). For details on ECOSENSE, see https://www.cep.uni-freiburg.de/forschungsprojekte/ecosense

In this project, we will focus on ecohydrological fluxes and processes in heterogeneous forest patches investigating dynamics and spatial patterns in root water uptake, tree sap flow and phloem carbon isotopes, its feedbacks on spatio-temporal soil moisture variability and heterogeneity, and how this, in turn, affects tree water use efficiency and phloem sugar transport. We aim to trace water and carbon fluxes in trees and sharpen our picture of biotic and abiotic controls. In parallel, a novel NMR system will be developed by the researchers at KIT and link this to the more sensor cluster of state-of-the-art ecohydrological sensors. The doctoral researcher will plan and install together with the technicians the ecohydrological sensor network and then focus on data analysis, data-based modelling and the spatial-temporal analysis (e.g. geostatistical approaches).

Applicants should have an outstanding MSc degree (or equiv.) in hydrology, environmental science, geoecology, geography or a closely related field. Knowledge in programming, statistical data analysis and environmental modeling, is essential. Particular experience in ecohydrology and challenging field work will be an asset. We encourage applications from enthusiastic dedicated individuals with strong quantitative skills as well as very good writing and communication skills in English. Applicants should hold a valid driver's license (European Cat. B)

We offer an interdisciplinary, international work environment in the Faculty of Environment and Natural Resources with a formal PhD program of ECOSENSE. The PhD position will be advised by Prof. Markus Weiler, head of a dynamic, international research group. Collaboration and co-advising with the partners of ECOSENSE is foreseen. The University of Freiburg is an equal opportunity employer and is committed to increasing diversity.

Please send your application including a cover and motivation letter, CV, certificate & transcript of your highest degree earned, an example of your own scientific writing (in English, if available), and the names and contact details of at least two references in one single pdf-file to hydrology@hydrology.uni-freiburg.de **(Reference WE/ECO_1)**. The application deadline is **15 August 2022**. For questions, please contact Markus Weiler (markus.weiler@hydro.uni-freiburg.de).

Prof. Dr. Markus Weiler
Professur für Hydrologie
Universität Freiburg
Friedrichstr. 39, 79098 Freiburg
hydrology@hydrology.uni-freiburg.de