PUBLIKATIONEN (publications)

Feldlabor Gersprenz-Einzugsgebiet / field lab Gersprenz basin ihwb TU Darmstadt (04/2026)

Begutachtete Publikationen (peer-reviewed publications)

2025

- Grosser, P.F. & Schmalz, B. (2025): **Assessing the Impacts of Climate Change on Hydrological Processes in a German Low Mountain Range Basin: Modelling Future Water Availability, Low Flows and Water Temperatures Using SWAT+**. Environments 12(5): 151. https://doi.org/10.3390/environments12050151.

2024

- Kissel, M., Bach, M. & Schmalz, B. (2024): **Impact of model structure and calibration strategy on baseflow modeling in the German Low Mountain Range**. Journal of Hydroinformatics 26(7): 1692-1714. https://doi.org/10.2166/hydro.2024.077.
- Scholand, D. & Schmalz, B. (2024): **Automated quantification of contouring as support practice for improved soil erosion estimation considering ridges**. International Soil and Water Conservation Research 12: 761e774. https://doi.org/10.1016/j.iswcr.2024.07.001.

2023

- David, A., Ruiz Rodriguez, E. & Schmalz, B. (2023): **Importance of catchment hydrological processes and calibration of hydrological-hydrodynamic rainfall-runoff models in small rural catchments**. Journal of Flood Risk Management 16(3): e12901, 30 p. https://doi.org/10.1111/jfr3.12901.
- Grosser, P.F. & Schmalz, B. (2023): **Projecting Hydroclimatic Extremes: Climate Change Impacts on Drought in a German Low Mountain Range Catchment**. Atmosphere 14(8): 1203. https://doi.org/10.3390/atmos14081203.
- Kissel, M., Bach, M. & Schmalz, B. (2023): **Evaluation of baseflow modeling with BlueM.Sim for long-term hydrological studies in the German low mountain range of Hesse, Germany**. Hydrology 10(12): 222. https://doi.org/10.3390/hydrology10120222.

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- Grosser, P.F., Xia, Z., Alt, J., Rüppel, U. & Schmalz, B. (2022): **Virtual field trips in hydrological field laboratories: The potential of virtual reality for conveying hydrological engineering content**. Education and Information Technologies 28: 6977-7003. https://doi.org/10.1007/s10639-022-11434-5. IF (2022) 5.5.

2021

- David, A. & Schmalz, B. (2021): **A Systematic Analysis of the Interaction between Rain-on-Grid-Simulations and Spatial Resolution in 2D Hydrodynamic Modeling**. Water 13(17): 2346. https://doi.org/10.3390/w13172346.
- Grosser, P.F. & Schmalz, B. (2021): **Low Flow and Drought in a German Low Mountain Range Basin**. Water 13(3): 316. https://doi.org/10.3390/w13030316.
- Scholand, D. & Schmalz, B. (2021): **Deriving the Main Cultivation Direction from Open Re-mote Sensing Data to Determine the Support Practice Measure Contouring**. Land 10(11): 1279. https://doi.org/10.3390/land10111279.

2020

- David, A. & Schmalz, B. (2020): **Flood Hazard Analysis in Small Catchments: Comparison of Hydrological and Hydrodynamic Approaches by the Use of Direct Rainfall**. Journal of Flood Risk Management 13(4): e12639, 26 p. https://doi.org/10.1111/jfr3.12639.
- Kissel, M. & Schmalz, B. (2020): **Comparison of baseflow separation methods in the German low mountain range**. Water 12: 1740. https://doi.org/10.3390/w12061740.

2019

- Schmalz, B. & Kruse, M. (2019): **Impact of land use on stream water quality in the German low mountain range basin Gersprenz**. Landscape online 72: 1-17. https://doi.org/10.3097/LO.201972.

Dissertationen (PhD theses)

- Grosser, Paula Farina: **The Evolution of Drought and Low Flow in a German Low Mountain Range Catchment – Integrating Observed Trends, Climate Projections and Process-Based Modelling**. Disputation am 17.11.2025. https://doi.org/10.26083/tuda-7883

- Kissel, Michael: **A Contribution to Improving Baseflow Modeling in Low Mountain Ranges**. Disputation am 01.07.2024. https://doi.org/10.26083/tuprints-00029958

- Rebscher, Angela: **Bodenerosion durch Oberflächenabfluss – Analysen zur Veränderlichkeit der Erodibilität kohäsiver Böden**. Disputation am 16.01.2024. https://doi.org/10.26083/tuprints-00028782

- David, Amrei: **Modeling of Rain-Related Inundation Areas in Small Rural Catchments Using the Direct Rainfall Method**. Disputation am 27.06.2023. https://doi.org/10.26083/tuprints-00024374