

KLAUS MOSTHAF

Department of Environmental and Resource Engineering
Technical University of Denmark (DTU)
2800 Kgs. Lyngby, Denmark
Email: klmos@dtu.dk
ORCID ID: 0000-0002-7033-4351



Professional Experience

- 2014 – present **Circularity and Environmental Impact Section at DTU Sustain,**
Postdoc, Researcher and Senior Researcher (since April 2020). Selected projects:
- Development of an improved understanding of pesticide transport below source zones – an important brick for better investigations and more robust risk evaluations (funded by the Danish EPA, Miljøstyrelsen, 2022).
 - Combined aquifer thermal energy storage and source zone remediation (BiodegrATES, funded by the Independent Research Fund Denmark, DFF, 2020-present)
 - Pesticides in groundwater arising from point sources. (Collaboration project with Region Zealand, 2021-present)
 - Flux i Moræneler, collaboration project on risk assessment of contaminated sites in clayey tills (funded by the Capital Region of Denmark, 2017-present)
 - Gas interchange between groundwater and air (GIGA, funded by the Independent Research Fund Denmark, DFF, 2018-2022)Vulnerability of groundwater bodies to pesticide leaching (CLAYFRAC: funded by the Danish EPA, 2017-2020)
 - Skelnen mellem pesticidkilder, update of a tool to distinguish point sources and diffuse sources (funded by the Danish EPA, Miljøstyrelsen, 2021).
 - Contaminant transport in limestone geologies (collaboration project with the Capital Region of Denmark, 2014-2017).
 - Teaching DTU Master courses “Modelling Environmental Processes and Technologies” and “Contaminated Sites”
 - Supervision of master student theses (in total more than 12), and co-supervision of two PhD students.
- 2020 – present **Board Member of the Danish Academy of Technical Sciences (ATV) Foundation on Soil & Groundwater**
- 2007 – 2014 **Department of Hydromechanics and Modelling of Hydrosystems,**
University of Stuttgart - Research assistant, PhD student and Postdoc
- Development of a coupling concept for porous-medium and free flow
 - International DFG research unit: Multi-scale interfaces in unsaturated soil
 - Development of the modelling environment DuMu^x

Higher Education

- 2007 – 2013 **University of Stuttgart, Germany,** PhD student and research assistant
Member of graduate school: Simulation Technology
Dissertation: *Modeling and analysis of coupled porous-medium and free flow with application to evaporation processes*
Degree: Dr.-Ing. in Environmental Engineering (Grade: excellent with distinction)

Selected publications

Metrics:

4 first author publications (in quartile Q1 journals), 11 co-authored publications, 497 times cited (Web of Science, 15-10-2022), H-Index: 9.

WoS: <https://www.webofscience.com/wos/author/rid/A-9354-2015>

- [1] Ahmadi, N., Muniruzzaman, M., Sprocati, R., Heck, K., Mosthaf, K., and Rolle, M.: *Coupling soil/atmosphere interactions and geochemical processes: A multiphase and multicomponent reactive transport approach*. Advances in Water Resources 169 (2022).
- [2] Ahmadi, N., Acocella, M., Fries, E., Mosthaf, K., and Rolle, M.: *Oxygen Propagation Fronts in Porous Media Under Evaporative Conditions at the Soil/Atmosphere Interface: Lab-Scale Experiments and Model-Based Interpretation*. Water Resources Research 58 (2022).
- [3] Mosthaf, K., Rolle, M., Petursdottir, U., Aamand, J., and P.R. Jørgensen: *Transport of tracers and pesticides through fractured clayey till: Large Undisturbed Column (LUC) experiments and model-based interpretation*. Water Resources Research 57 (2021).
- [4] Berre, I., Boon, W. M., Flemisch, B., Fumagalli, A., Gläser, D., Keilegavlen, E., Scotti, A., Stefansson, I., Tatomir, A., Brenner, K., Burbulla, S., Devloo, P., Duran, O., Favino, M., Hennicker, J., Lee, I-H., Lipnikov, K., Masson, R., Mosthaf, K., ..., and P. Zulian: *Verification benchmarks for single-phase flow in three-dimensional fractured porous media*, Advances in Water Resources 147 (2021).
- [5] Ahmadi, N., Heck, K., Rolle, M., Helmig, R. and K. Mosthaf: *On multicomponent gas diffusion and coupling concepts for porous media and free flow: a benchmark study*. Computational Geosciences (2021).
- [6] Ahmadi, N., Mosthaf, K., Scheutz, C., Kjeldsen, P. and M. Rolle: *Model-based interpretation of methane oxidation and respiration processes in landfill biocovers: 3-D simulation of laboratory and pilot experiments*, Waste Management 108 (2020).
- [7] Jørgensen, P.R., Mosthaf, K. and M. Rolle: *A large undisturbed column method to study flow and transport in macropores and fractured media*, Groundwater, 57 (2019).
- [8] Mosthaf, K., B. Brauns, A.S. Fjordbøge, M.M. Rohde, H. Kern-Jespersen, P.L. Bjerg, P.J. Binning and M.M. Broholm: *Conceptualization of flow and transport in a limestone aquifer by multiple dedicated hydraulic and tracer tests*, Journal of Hydrology, 561 (2018).
- [9] Broholm, M.M., Janniche, G.S., Mosthaf, K., Fjordbøge, A.S., Binning, P.J., Christensen, A.G., Grosen, B., Jørgensen, T.H., Keller, C., Wealthall, G. and H. Kern-Jespersen: *Characterization of chlorinated solvent contamination in limestone using innovative FLUTE technologies in combination with other methods in a line of evidence approach*, Journal of Contaminant Hydrology 189 (2016) 68-85.
- [10] Mosthaf, K., Baber, K., Flemisch, B., Helmig, R., Leijnse, A., Rybak, I. and B. Wohlmuth: *A coupling concept for two-phase compositional porous-medium and single-phase compositional free flow*. Water Resources Research 47 (2011).

Copenhagen, October 2022