

Mingfeng Wang

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Educational Background

Ph.D. Student in Mechanical Engineering, University of Stuttgart

Institute of Mechanics (MIB) [11/2021 – Present]

Prof. Holger Steeb

City: Stuttgart | Country: Germany

Master in Geological Engineering, China University of Geosciences (Beijing)

School of Energy Resources [09/2017 – 07/2020]

Prof. Shu Tao

City: Beijing | Country: China | Final grade: 3.49/4.0

Bachelor in Mining Engineering, Henan Polytechnic University

School of Energy Science and Engineering [09/2013 – 07/2017]

City: Jiaozuo | Country: China | Final grade: 3.41/4.0

Skills

- **Programming:** C++, Python, Matlab (algorithm design and numerical simulation development)
- **Simulation Tools:** OpenFOAM (source-code level modification and model implementation), CalculiX, poremaps, preCICE
- **Supporting Tools:** Yade, Gmsh, Salome, Avizo, ImageJ, AutoCAD

Research Experience

Ph.D. Researcher, Institute of Applied Mechanics (MIB), University of Stuttgart, 11/2021 – Present

- Investigated pore-scale non-Darcy flow behavior in porous media using microfluidic experiments and numerical simulations
- Conducting numerical simulations of oscillatory flow in deformable tubes under FSI conditions
- Currently finalizing a data-driven permeability prediction model for packed porous media using machine learning techniques

Research Interests

- Single-phase, multi-phase, and reactive flow in porous and fractured media
- Fluid-structure interaction (FSI)
- Numerical solver development
- Machine learning-based modeling and simulation of fluid flow

Publications

- Krach, D., Weinhardt, F., Wang, M., Schneider, M., Class, H., & Steeb, H. (2025). A novel geometry-informed drag term formulation for pseudo-3D Stokes simulations with varying apertures. *Advances in Water Resources*, 195, 104860.
- Wang, M., Wang, J., Tao, S., Tang, D., Wang, C., & Yi, J. (2020). Quantitative characterization of void and demineralization effect in coal based on dual-resolution X-ray computed tomography. *Fuel*, 267, 116836.