

简历

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研究领域:

深层地质资源的开发与利用, 地热储能, 地下多物理场 (水热固化) 耦合作用

教育经历:

[11.2018 – 07.2022] 哥廷根大学, 德国

地理科学, 博士研究生

[10.2015 – 03.2018] 哥廷根大学, 德国

水文地质及环境地理, 硕士研究生

[09.2011 – 06.2015] 武汉大学, 中国

环境工程, 本科

工作经历 / 实习

[01.2025 – now] 助理研究员

莱布尼茨应用地球物理研究所, 德国

[07.2022 – 12.2024] 博士后

哥廷根大学—克劳斯塔尔大学, 德国

Aquifer thermal energy storage 项目

[10.2016 – 06.2019] 研究助理

哥廷根大学应用地质系, 德国

[09.2013 – 12.2014] 研究助理

武汉大学环境工程系，中国

[07.2014 – 08.2014] 实习图形工程师

中国凯迪电力，中国

[04.2012 – 04.2013] 研究助理

武汉大学环境工程系，中国

参与项目

1. Aquifer thermal energy storage

Geo-TES: Möglichkeiten und Grenzen thermischer Energiespeicherung in tiefen

Aquiferen im Rahmen der "Wärmewende 2030". Funding by Bundesministerium für

Bildung und Forschung (BMBF 06G0917A)

主要贡献:

研究计划的撰写及实现（多物理场耦合过程）

对地下多物理场耦合过程进行模拟与分析

2. Horizon 2020 Research and Innovation Program, FracRisk project

（Grant agreement number: 636811）

主要贡献:

负责研究不饱和土壤中有效应力的解析解

3. “TRUST” project

（European Community's Seventh Framework Programme FP7/2007-2013 under grant agreement number 309607）

主要贡献:

负责使用DuMuX和COMSOL对目标地下结构进行建模并且比较

负责对新型“智慧”界面敏感形示踪剂进行深入研究

已发表文章

- [1] **D. Zhou***, A. Tatomir, H. Gao, Q. Liu, and M. Sauter, ‘Thermo-sensitive tracer technology to monitor the movement of thermal front in geothermal energy production’, Energy Conversion and Management, vol. 341, p. 120056, Oct. 2025, doi: 10.1016/j.enconman.2025.120056. **(IF 10.9, 中科院一区, Top)**

- [2] **D. Zhou***, A. Tatomir, H. Gao, K. Li, L. Ganzer, G. Brenne, P. Jaeger, M. Sauter, “Analysis of high-temperature aquifer thermal energy storage system performances with heterogeneous permeability distribution, insights from a case study in burgwedel, germany,” *J. Energy Storage*, vol. 120, p. 116467, Jun. 2025, doi: 10.1016/j.est.2025.116467. **(IF 8.9, 中科院二区, Top)**
- [3] **D. Zhou**, K. Li*, H. Gao, A. Tatomir, M. Sauter, and L. Ganzer, “Techno-economic assessment of high-temperature aquifer thermal energy storage system, insights from a study case in Burgwedel, Germany,” *Appl. Energy*, vol. 372, p. 123783, Oct. 2024, doi: 10.1016/j.apenergy.2024.123783. **(IF 10.1, 中科院一区, Top)**
- [4] **D. Zhou**, A. Tatomir, Q. Liu, K. Li, H. Gao*, and M. Sauter, “Effects of thermoelasticity induced aperture variation on performances of Enhanced geothermal system,” *Appl. Therm. Eng.*, vol. 248, p. 123308, Jul. 2024, doi: 10.1016/j.applthermaleng.2024.123308. **(IF 6.1, 中科院二区, Top)**
- [5] **D. Zhou***, A. Tatomir, H. Gao, Q. Liu, and M. Sauter, “Influences of directional aperture heterogeneity on the performances of two-phase enhanced geothermal system considering the CO₂ buoyant force,” *Int. J. Heat Mass Transf.*, vol. 228, p. 125611, Aug. 2024, doi: 10.1016/j.ijheatmasstransfer.2024.125611. **(IF 5.0, 中科院二区, Top)**
- [6] **D. Zhou* et al.**, “CO₂ high-temperature aquifer thermal energy storage (CO₂ HT-ATES) feasible study: Combing the heating storage and CCUS,” *Gas Sci. Eng.*, vol. 122, p. 205224, Feb. 2024, doi: 10.1016/j.jgsce.2024.205224. **(IF 4.9, 中科院二区, Top)**
- [7] **D. Zhou***, A. Tatomir, I. Tomac, and M. Sauter, “Effects of fracture aperture distribution on the performances of the enhanced geothermal system using supercritical CO₂ as working fluid,” *Energy*, vol. 284, p. 128655, Dec. 2023, doi: 10.1016/j.energy.2023.128655. **(IF 9.0, 中科院一区, Top)**
- [8] **D. Zhou***, A. Tatomir, A. Niemi, C.-F. Tsang, and M. Sauter, “Study on the influence of randomly distributed fracture aperture in a fracture network on heat production from an enhanced geothermal system (EGS),” *Energy*, vol. 250, p. 123781, Jul. 2022, doi: 10.1016/j.energy.2022.123781. **(IF 9.0, 中科院一区, Top)**
- [9] **D. Zhou***, A. Tatomir, and M. Sauter, “Pore-scale analytic model to calculate the suction stress in partially saturated soils,” *Vadose Zone J.*, vol. 21, no. 5, p. e20229, Sep. 2022, doi: 10.1002/vzj2.20229. **(IF 2.5, 中科院三区)**
- [10] **D. Zhou***, A. Tatomir, and M. Sauter, “Thermo-hydro-mechanical modelling study of heat extraction and flow processes in enhanced geothermal systems,” *Adv. Geosci.*, vol. 54, pp. 229–240, Jun. 2021, doi: 10.5194/adgeo-54-229-2021.
- [11] H. Gao, **D. Zhou***, A. Tatomir, K. Li, M. Al-Eryani, S. Mohammadi, M. Sauter, “Effects of calcite reactions on aquifer permeability in high-temperature aquifer thermal energy storage,” *Hydrogeol. J.*, May 2025, doi: 10.1007/s10040-025-02899-y. **(IF 2.4, 中科院三区)**
- [12] H. Gao*, A. B. Tatomir, **D. Zhou**, N. K. Karadimitriou, H. Steeb, and M. Sauter, “Reservoir characterization by push–pull tests employing kinetic interface sensitive tracers – quantification of residual trapping in geological storage of carbon dioxide,” *J. Hydrol.*, vol. 659, p. 133240, Oct. 2025, doi: 10.1016/j.jhydrol.2025.133240. **(IF 5.9, 中科院一区, Top)**
- [13] H. Gao*, **D. Zhou**, A. Tatomir, K. Li, L. Ganzer, P. Jaeger, G. Brenner, M. Sauter, “Estimation of recovery efficiency in high-temperature aquifer thermal energy storage

- considering buoyancy flow', *Water Resources Research*, vol. 60, no. 11, p. e2024WR037491, 2024, doi: 10.1029/2024WR037491. **(IF 4.6, 中科院一区)**
- [14]H. Gao*, H. Abdullah, A.B. Tatomir, N.K. Karadimitriou, H. Steeb, **D. Zhou**, Q. Liu, M. Sauter, "Pore-scale study of the effects of grain size on the capillary-associated interfacial area during primary drainage," *J. Hydrol.*, vol. 632, p. 130865, Mar. 2024, doi: 10.1016/j.jhydrol.2024.130865. **(IF 5.9, 中科院一区, Top)**
- [15]A. Tatomir*, K. De Vriendt, **D. Zhou**, H. Gao, F. Duschl, F. Sun, T. Licha, M. Sauter, "Kinetic Interface Sensitive Tracers: Experimental Validation in a Two-Phase Flow Column Experiment. A Proof of Concept," *Water Resour. Res.*, vol. 54, no. 12, Dec. 2018, doi: 10.1029/2018WR022621. **(IF 4.6, 中科院一区, Top)**
- [16]Z. Ye, H. Zhang*, X. Zhang, and **D. Zhou**, "Treatment of landfill leachate using electrochemically assisted UV/chlorine process: Effect of operating conditions, molecular weight distribution and fluorescence EEM-PARAFAC analysis," *Chem. Eng. J.*, vol. 286, pp. 508–516, Feb. 2016, doi: 10.1016/j.cej.2015.10.017. **(IF 13.3, 中科院一区, Top)**