

Curriculum Vitae

Prof. Dr. sc. nat. Thomas Kohl

Chair of Geothermal Energy and Reservoir Technology
Coordinator of the Topic "Geoenergy" of KIT Helmholtz program

Karlsruhe Institute of Technology (KIT), Germany
Institute for Applied Geosciences (AGW)
Adenauer-Ring 20B, Building 50.40, D-76131 Karlsruhe, Germany
Phone: +49 721 6084 5220 | Email: thomas.kohl@kit.edu



[ORCID](#) | Scopus ID: [56505651900](#)

[Google Scholar](#)

Short CV

Thomas Kohl is full professor at the Karlsruhe Institute of Technology, KIT. He holds the chair of the Division of Geothermal Energy and Reservoir Technology at the Institute for Applied Geosciences and is head of the Helmholtz geothermal program at KIT. As trained geophysicist at the Technical University of Karlsruhe, he became research associate at CNRS in Paris in the field of seismology and received his PhD at ETH Zurich in the field of numerical modeling of deep geothermal systems. After completing his habilitation thesis, he became associate professor at ETH Zürich in 1999. In his medium sized company in Zürich, he participated in European and national research projects as work package leader and industrial geothermal projects. Since 2010 at KIT in Karlsruhe, one of the main research topics is the investigation of geomechanical aspects in fractured systems. Taking advantage of the exceptional capabilities of the surrounding geothermal projects, systematic data analyses are carried out and correlated to the tectonic conditions in the Rhine Graben. His activity at KIT culminated in the successful acquisition of the two large infrastructure projects DeepStor and GeoLaB to which he initiated collaboration with many other institutions. T. Kohl has organized several high rank workshops and is one of the initiators of the European Geothermal Workshop. He has established 5 teaching modules, is engaged in international Master Programs and was doctoral supervisor for >20 PhD students, was co-founder of the now well-established Geothermal Energy Journal. Currently, he is member in several scientific boards. T. Kohl is author of ~100 peer-reviewed manuscripts in renowned journals and frequently invited to high-level scientific conferences. He is often consulted as an expert on industrial projects and provides scientific support worldwide.

Professional Profile

Thomas Kohl is a leading expert in geothermal energy and reservoir engineering with over 30 years of experience in academia and industry. He currently holds the Chair of Geothermal Energy and Reservoir Technology at the Karlsruhe Institute of Technology (KIT), where he leads multidisciplinary research on deep geothermal systems, enhanced geothermal systems (EGS), reservoir modeling, induced seismicity, and risk assessment. His work bridges fundamental science and industrial application, focusing on sustainable subsurface utilization for energy and raw material recovery.

He has coordinated major Helmholtz programs including GeoLaB (Underground Geothermal Laboratory) and DeepStor (HT-ATES). He has led numerous national and international projects funded by EU Horizon, DOE, InnoSuisse, and other agencies. He has authored more than 100 peer-reviewed publications, serves as Editor-in-Chief of Geothermics, and contributes regularly to high-level scientific conferences.

Education & Academic Qualifications

- Diploma (M.Sc.) in Geophysics, Karlsruhe Institute of Technology (KIT), Germany
- Ph.D. in Numerical Modeling of Deep Geothermal Systems, ETH Zurich, Switzerland
- Habilitation in Geophysics, ETH Zurich, Switzerland

Academic Appointments

- Present: Full Professor (W3), Chair of Geothermal Energy and Reservoir Technology, KIT
- Before: Honorary Professor, University of Freiburg, Germany
- Before: Founder and CEO, GEOWATT AG, Zurich, Switzerland
- Before: Research Assistant / Assistant Professor, ETH Zurich, Switzerland
- Before: Postgraduate at CNRS (Centre National de la Recherche Scientifique), Paris, France

Research Leadership & Infrastructure Projects

Helmholtz Projects

- 2012–2023: Coordinator of the Helmholtz Topic "Geothermal Energy Systems" under Renewable Energy Programs
- 2020–Present: Coordinator of the Helmholtz Subtopic "Geoenergy" under MTET Program
- 2019–Present: Principal Investigator, GeoLaB – Underground Geothermal Laboratory in Crystalline Basement
- 2019–Present: Principal Investigator, DeepStor – High-Temperature Aquifer Thermal Energy Storage (HT-ATES)

Examples EU & International Projects

- ENGINE, IGET, DeepEGS, GeMex, INSIDE, VESTA, THERMION, LOGRO
- BRINEMINE, BRIDGE... several Chile Projects on Lithium extraction and geothermal fluids

Industrial Partnerships

- EnBW Industrial Foundation (€4 million support for chair and equipment)
- Collaboration with industry partners including FERVO, DOE, INL, Fraunhofer ISE, GFZ, UFZ, and others

Teaching & Supervision

Selected Teaching Modules (KIT, M.Sc. Level)

1. Borehole Technology (Drilling and Logging)
2. Numerical Methods in Earth Science
3. Geothermics I: Energy and Transport Processes (incl. 1-day field exercise)
4. Geothermics II: Application and Industrial Use (incl. 2-day field exercise)
5. Geothermics III: Reservoir Engineering and Modeling

International Collaborations

- Founder of the European Geothermal Workshop (EGW)
- Organized cross-border Autumn School with Université de Strasbourg (Soultz-sous-Forêts EGS site)
- Guest Lecturer in France, Switzerland, Indonesia, China
- Guest lecturer at Hector School's International Master's Programs (KIT spin-off) since 201

Publications & Bibliometrics (until August 1, 2025)

- Scopus H-index: 34; Google Scholar Citations: >6,000
- Selected recent works available via Google Scholar

Key Publications: More than 100 peer-reviewed articles in leading geoscience and energy journals including:

- Geothermics
- Geophysical Journal International
- Renewable and Sustainable Energy Reviews
- Scientific Reports
- Energy

Selected Recent Publications 2023–2025 (See list attached)

1. Goldberg, V. et al. (2025): Multi-use of Geothermal Systems: Perspectives for Renewable Baseload Energy and Green Mining. In: *Green Energy and Technology*.
2. Spitzmüller, L. et al. (2024): Titania-mediated stabilization of fluorescent dye encapsulation in mesoporous silica nanoparticles. In: *Nanoscale Advances*, 6(13), 3450-3461.
3. Dashti, A. et al. (2024): Machine learning for robust structural uncertainty quantification in fractured reservoirs. In: *Geothermics*, 120, 103012.
4. Yan, G. et al. (2025): Investigating the impact of wellbore lateral heat transfer on HT-ATES performance. In: *Geoenergy Science and Engineering*, 251, 213874.
5. Esmaeilpour, M. et al. (2024): GenEOS: An accurate equation of state for two-phase geofluids using gene expression programming. In: *Computer Physics Communications*, 297, 109068.

Leadership Roles & Editorial Work

- Editorial Board Member:
 - o Geothermics (Guest Editor)
 - o Journal of Geothermal Energy (Editor-in-Chief, 2013–2019)
- Scientific Boards:
 - o German Geophysical Society (Board Member, since 2020)
 - o European Energy Research Alliance – Geothermal (EERA-JPGE)
 - o German Geothermal Economic Forum
- Workshop Organizer:
 - o Initiated European Geothermal Workshop (EGW)
 - o Invited speaker at numerous international conferences including GRC, EGU, AGU

Professional Activities

- Peer reviewer for major funding agencies including:
 - o U.S. Department of Energy (DOE)
 - o Norges Forskningsråd (Norway)
 - o InnoSuisse (Switzerland)
 - o State of Lower Saxony (Germany)
- Scientific advisory board member for:
 - o German Geothermal Association
 - o Helmholtz Energy Research Field
 - o European Geothermal Energy Council (EGEC)
 - o German Geophysical Society (DGG); Coordinator of the Geothermal Energy Working Group

Additional Contributions

- Citizen Science Initiatives: Led low-cost seismometer networks for public engagement in geothermal monitoring
- Policy Engagement: Contributed to national and EU-level policy documents on geothermal development
- Start-up Support: Co-founder of GEOWATT AG, a geothermal consultancy and software development firm
- Public Outreach: Regular contributor to media and educational programs on renewable energy and geothermal innovation

Attachment

PhD Supervision

- 2003 Bächler, Dominique: Coupled thermal-hydraulic-chemical modelling at the Soultz-sous-Forêts HDR reservoir (France)
- 2004 Signorelli, Sarah: Geoscientific investigations for the use of shallow low-enthalpy systems
- 2013 Mundhenk, Niklas: Corrosion and scaling in utilization of geothermal energy in the Upper Rhine graben
- 2014 Meller, Carola: Localization and characterization of hydrothermal alteration zones in a geothermal reservoir and their significance for rock mechanics (summa cum laude, awarded)
- 2014 Schoenball, Martin: Evolution of Stress and Seismicity in Fractured Geothermal Reservoirs (summa cum laude, awarded)
- 2016 Kinnaert, Xavier: Data processing of induced seismicity: estimation of errors and of their impact on geothermal reservoir models (Cotutelle with Université de Strasbourg)
- 2016 Meixner, Jörg: Geomechanical characterization of geothermal relevant fault patterns in Southwest Germany
- 2016 Sahara, David Prambudi: Significance of mechanical behavior and stress heterogeneity in a deep geothermal reservoir (awarded)
- 2017 Nusiputra, Yodha Yudhistra: Coupled Hydraulic, Thermal and Chemical Simulations for Geothermal Installations
- 2018 Held, Sebastian: Exploration of Villarrica Geothermal System using Geophysical and Geochemical Techniques (awarded)
- 2018 Nitschke, Fabian: Numerical and Experimental Characterization of Dissolution and Precipitation Processes in Deep Geothermal Reservoirs
- 2019 Seithel, Robin: Geomechanical characterization of geothermal reservoirs in the Bavarian Molasse Basin (awarded)
- 2019 Köpke, Rike: Fracture network characterization in enhanced geothermal systems by induced seismicity analysis (Cotutelle with Université de Strasbourg)
- 2020 Egert, Robert: Scale-dependent Processes in the Fractured Reservoir Rock: Linking Experiments and Numerical Models (summa cum laude)
- 2021 Wang, Jia: Thermal Modeling and Inversion of Borehole Temperature Data
- 2023 Pavez, Max: The role of active crustal faults in geothermal systems in volcanic areas: A case study of Southern Chile by Magneto-telluric method
- 2023 Esmailpour, Morteza: Numerical Simulation of non-isothermal Multiphase and Multi-component Transport in Deep Geothermal Systems
- 2023 Yström, Lars: Numerical Optimisation and Machine Learning Advancement in Solute Geothermometry (awarded)
- 2024 Goldberg, Valentin: The potential of direct mineral extraction from geothermal fluids (to be held in March 2024, Cotutelle with Universidad de Chile, awarded)
- 2024 Stricker, Kai: Potential and Geomechanical Risks of High- Temperature Heat Storage in Deep Reservoirs
- 2024 Dashti, Ali: Impact of structural uncertainty on the assessment of geothermal reservoirs
- 2024 Yan, Guoqiang: Reservoir temperature characterization historical environment to future geothermal applications
- 2025 Spitzmüller, Laura: Development of Functionalized Silica-Based Nanoparticle Tracers for Geo-Reservoirs (awarded)

Peer-Reviewed Publications in the Last 10 Years

(Bibliometry: H-Index 34 scopus)

1. Azzola, J., Gaucher, E., Habibi, R., Kohl, T., Westerhaus, M. (2025): Abschlussbericht zum Verbundprojekt INSIDE, KIT. DOI: 10.5445/IR/1000179255.
2. Baujard, C., Schoenball, M., Kohl, T., Dorbath, L. (2014): Large magnitude events during injections in geothermal reservoirs and hydraulic energy: A heuristic approach. In: *Geothermics* 52, 140-152. DOI: 10.1016/j.geothermics.2014.07.002.
3. Berson, J., Rudolph, B., Spitzmüller, L., Kohl, T., Schimmel, T. (2024): Reporting nanoparticle tracers: Validation of performance in flow-through experiments simulating reservoir conditions. In: *Journal of Hydrology*, 637, 131429, DOI: 10.5445/IR/1000171158/pub.
4. Blankenship, D., Dobson, P., Garg, S., Ghassemi, A., Kohl, T. (2016): Enhanced Geothermal Systems: State of the Art. In: *Geothermics* 63, 1. DOI: 10.1016/j.geothermics.2016.04.001.
5. Bracke, R., Huenges, E., Acksel, D., Amann, F., Bremer, J., Kohl, T. et al. (2022): Roadmap Tiefe Geothermie für Deutschland. Handlungsempfehlungen für Politik, Wirtschaft und Wissenschaft für eine erfolgreiche Wärmewende. DOI: 10.24406/ieg-n-645792.
6. Bremer, J., Kohl, T., Rudolph, B., Schill, E., Zimmermann, G., Milsch, H., Rink, K., Shao, H., Kolditz, O., Rühaak, W., Schüth, C. (2022): GeoLaB - Das geowissenschaftliche Zukunftsprojekt für Deutschland. In: *WVGW*, Wirtschafts- u. Verl.Ges. Gas und Wasser, 73, 12, 66-71, ISSN: 1611-1478.
7. Dashti, A., Grimmer, J. C., Geuzaine, C., Bauer, F., Kohl, T. (2023): Developing meshing workflows for Geologic Uncertainty Assessment in High-Temperature Aquifer Thermal Energy Storage. In: *Geoscientific Model Development Discussions*, [Preprint], 1-25. DOI: 10.5194/gmd-2023-105.
8. Dashti, A., Grimmer, J.C., Geuzaine, C., Bauer, F., Kohl, T. (2024): Developing meshing workflows in Gmsh v4.11 for the geologic uncertainty assessment of high-temperature aquifer thermal energy storage. In: *Geoscientific Model Development*, 17(8), 3467-3485, DOI: 10.5194/gmd-17-3467-2024.
9. Dashti, A., Korzani, M. G., Geuzaine, C., Egert, R., Kohl, T. (2023): Impact of structural uncertainty on tracer test design in faulted geothermal reservoirs. In: *Geothermics*, 107, 102607. DOI: 10.1016/j.geothermics.2022.102607
10. Dashti, A., Stadelmann, T., Kohl, T. (2024): Machine learning for robust structural uncertainty quantification in fractured reservoirs. In: *Geothermics*, 120, 103012, DOI: 10.1016/j.geothermics.2024.103012.
11. Egert, R., Gaucher, E., Savvatis, A., Goblirsch, P., Kohl, T. (2022): Numerical determination of long-term alterations of THM characteristics of a Malm geothermal reservoir during continuous exploitation. In: *European Geothermal Congress (EGC)*, Berlin, Germany, 17-21 October 2022, proceedings, DOI: 10.5445/IR/1000152037/pub.
12. Egert, R., Korzani, M. G., Held, S., Kohl, T. (2020): Implications on large-scale flow of the fractured EGS reservoir Soultz inferred from hydraulic data and tracer experiments. In: *Geothermics* 84, 101749. DOI: 10.1016/j.geothermics.2019.101749.
13. Egert, R., Seithel, R., Kohl, T., Stober, I. (2018): Triaxial testing and hydraulic-mechanical modeling of sandstone reservoir rock in the Upper Rhine Graben. In: *GEEN* 6 (1), 49. DOI: 10.1186/s40517-018-0109-0.
14. Egert, R., Nitschke, F., Gholami Korzani, M., Kohl, T. (2021): Stochastic 3D Navier-Stokes flow in self-affine fracture geometries controlled by anisotropy and channeling. In: *Geophysical Research Letters*, 48, 9, e2020GL092138.
15. Esmaeilpour, M., Gholami Korzani, M., Kohl, T. (2022): Increasing the contribution of closed geothermal systems to green energy generation through designing a novel deep multilateral framework. DOI: 10.5445/IR/1000159620.
16. Egert, R., Nitschke, F., Gholami Korzani, M., Kohl, T. (2023): Spatial Characterization of Channeling in Sheared Rough-Walled Fractures in the Transition to Nonlinear Fluid Flow. In: *Water Resources Research*, 59(10). DOI: 10.1029/2022WR034362.
17. Esmaeilpour, M., Korzani, M. G., Kohl, T. (2022): Impact of thermosiphoning on long-term behavior of closed-loop deep geothermal systems for sustainable energy exploitation. In: *Renewable Energy*, 194, 1247-1260, DOI: 10.1016/j.renene.2022.06.014.
18. Esmaeilpour, M., Korzani, M. G., Kohl, T. (2023): Stochastic performance assessment on long-term behavior of multilateral closed deep geothermal systems. In: *Renewable Energy*, 208, 26-35, DOI: 10.1016/j.renene.2023.03.074.

19. Esmaeilpour, M., Nitschke, F., Kohl, T. (2024): GenEOS: An accurate equation of state for the fast calculation of two-phase geofluids properties based on gene expression programming. In: *Computer Physics Communications*, 297, 109068. DOI: 10.1016/j.cpc.2023.109068.
20. Gaucher, E., Kinnaert, X., Achauer, U., Kohl, T. (2016): Propagation of Velocity Model Errors in Earthquake Absolute Locations: Application to the Rittershoffen Geothermal Field. In: 41st Stanford Workshop on Geothermal Reservoir Engineering. Stanford, California, February 22–24, 2016. Vol. SGP-TR-209. Stanford University.
21. Gaucher, E., Schoenball, M., Heidbach, O., Zang, A., Fokker, P., van Wees, J.-D., Kohl, T. (2015): Induced seismicity in geothermal reservoirs. A review of forecasting approaches. In: *Renewable and Sustainable Energy Reviews* 52, 1473–1490. DOI: 10.1016/j.rser.2015.08.026.
22. Gaucher, E., Schoenball, M., Heidbach, O., Zang, A., Fokker, P., van Wees, J.-D., Kohl, T. (2015): Induced Seismicity in Geothermal Reservoirs: Physical Processes and Key Parameters. In: IGA (Hg.): World Geothermal Congress. Melbourne, Australia, 19–25 April 2015: Int. Geothermal Association.
23. Gholami Korzani, M., Held, S., Kohl, T. (2020): Numerical based filtering concept for feasibility evaluation and reservoir performance enhancement of hydrothermal doublet systems. In: *Journal of Petroleum Science and Engineering* 190, 106803. DOI: 10.1016/j.petrol.2019.106803.
24. Goldberg, V., Dashti, A., Egert, R., Benny, B., Kohl, T., Nitschke, F. (2023): Challenges and Opportunities for Lithium Extraction from Geothermal Systems in Germany – Part 3: The Return of the Extraction Brine. In: *Energies*, 16(16), 5899. DOI: 10.3390/en16165899.
25. Goldberg, V., Nitschke, F., Morata, D., Schill, E., Kohl, T. (2025) Multi-use of Geothermal Systems: Perspectives for Renewable Baseload Energy and Green Mining. In: Braun, A. C., Espinosa Gutiérrez, G., Tröger, D., Hirth, T. (eds) Eco-Industrial Development as an Industrial Strategy. Green Energy and Technology. Springer, Cham, pp. 311–318. DOI: 10.1007/978-3-031-73576-9_16.
26. Goldberg, V., Winter, D., Eiche, E., Koschikowski, J., Kohl, T., Morata, D., Schwantes, R., Seibt, P., Heboldt, J., Nitschke, F. (2023) Prototype Tests for the Treatment of Geothermal Waters for Raw Material Extraction and Freshwater Production. In: *Mining Report*, 159(6), 601–610.
27. Goldberg, V., Winter, D., Nitschke, F., Morata, D., Koschikowski, J., Kohl, T. (2021): Development of a brine treatment strategy for enhancing geothermal energy production and associated raw material extraction, Goldschmidt (2021), Online, 04.07. 2021. DOI: 10.7185/gold2021.6790.
28. Goldberg, V., Winter, D., Nitschke, F., Rath, M., Held, S., Spitzmüller, L., Budach, I., Pavez, M., Morata, D., Koschikowski, J. (2021): The potential of raw material extraction from thermal brines – Successful milestones of the BrineMine project. In: *Oil Gas*, 1, 26–33. DOI: 10.19225/210306.
29. Goldberg, V., Winter, D., Nitschke, F., Held, S., Groß, F., Pfeiffle, D., Uhde, J., Morata, D., Koschikowski, J., Kohl, T. (2023): Development of a continuous silica treatment strategy for metal extraction processes in operating geothermal plants. In: *Desalination*, 564, 116775. DOI: 10.1016/j.desal.2023.116775.
30. Grimm, M., Stober, I., Kohl, T., Blum, P. (2014): Schadensfallanalyse von Erdwärmesondenbohrungen in Baden-Württemberg. In: *Grundwasser* 19 (4), 275–286. DOI: 10.1007/s00767-014-0269-1.
31. Guoqiang, Y., Andersen, P. Ø., Qiao, Y., Hatzignatiou, D. G., Nitschke, F., Spitzmüller, L., Kohl, T. (2024): Numerical modeling of temperature-reporting nanoparticle tracer for fractured geothermal reservoir characterization. In: *Geoenergy Science and Engineering*, 237, 212787, DOI: 10.5445/IR/1000169659.
32. Held, S., Genter, A., Kohl, T., Kölbel, T., Sausse, J., Schoenball, M. (2014): Economic evaluation of geothermal reservoir performance through modeling the complexity of the operating EGS in Soultz-sous-Forêts. In: *Geothermics* 51, 270–280. DOI: 10.1016/j.geothermics.2014.01.016.
33. Held, S., Kohl, T. (2016): Case Study: Soultz-sous-Forêts. In: Norihiro Watanabe, Guido Blöcher, Mauro Cacace, Sebastian Held und Thomas Kohl (Hg.): *Geoenergy Modeling III: Enhanced Geothermal Systems*: Springer Berlin Heidelberg, S. 75–93.
34. Held, S., Schill, E., Pavez, M., Díaz, D., Muñoz, G., Morata, D., Kohl, T. (2016): Resistivity distribution from mid-crustal conductor to near-surface across the 1200 km long Liquiñe-Ofqui Fault System, southern Chile. In: *Geophysical Journal International* 207 (3), 1387–1400. DOI: 10.1093/gji/ggw338.
35. Held, S., Schill, E., Sanchez, P., Neumann, T., Emmerich, K., Morata, D., Kohl, T. (2015): Geological and Tectonic Settings Preventing High-Temperature Geothermal ReservoirDevelopment at Mt. Villarrica (Southern Volcanic Zone): Clay Mineralogy and Sulfate-Isotope Geothermometry. In: IGA (Hg.): World Geothermal Congress. Melbourne, Australia, 19–25 April 2015: Int. Geothermal Association.

36. Held, S., Schill, E., Schneider, J., Nitschke, F., Morata, D., Neumann, T., Kohl, T. (2018): Geochemical characterization of the geothermal system at Villarrica volcano, Southern Chile; Part 1. Impacts of lithology on the geothermal reservoir. In: *Geothermics* 74, 226-239. DOI: 10.1016/j.geothermics.2018.03.004.
37. Hörbrand, T., Beichel, K., Bendias, D., Savvatis, A., Kohl, T. (2025): Karst control on reservoir performance of a developed carbonate geothermal reservoir in Munich, Germany. In: *Geological Society Special Publication*, 548(1), 291-310, DOI: 10.1144/SP548-2024-42.
38. Huenges, E., Kohl, T., Kolditz, O., Bremer, J., Scheck-Wenderoth, M., Vienken, T. (2013): Geothermal energy systems: research perspective for domestic energy provision. In: *Environmental Earth Sciences* 70 (8), S. 3927–3933. DOI: 10.1007/s12665-013-2881-2.
39. Kinnaert, X., Gaucher, E., Achauer, U., Kohl, T. (2016): Modelling earthquake location errors at a reservoir scale. A case study in the Upper Rhine Graben. In: *Geophysical Journal International* 206 (2), 861-879. DOI: 10.1093/gji/ggw184.
40. Kinnaert, X., Gaucher, E., Kohl, T., Achauer, U. (2018): Contribution of the Surface and Down-Hole Seismic Networks to the Location of Earthquakes at the Soultz-sous-Forêts Geothermal Site (France). In: *Pure Appl. Geophys.* 175 (3), 757-772. DOI: 10.1007/s00024-017-1753-1.
41. Koepke, R., Gaucher, E., Kohl, T. (2020): Pseudo-probabilistic identification of fracture network in seismic clouds driven by source parameters. In: *Geophys. J. Int.* 223 (3), 2066-2084. DOI: 10.1093/gji/ggaa441.
42. Kohl, T., Sass, I., Kolditz, O., Bremer, J., Rudolph, B., Schill, E. (2023): The Large-Scale Helmholtz Research Infrastructure GeoLaB, PROCEEDINGS. In: 48th Workshop on Geothermal Reservoir Engineering, Stanford University, Stanford, California, February 6-8, 2023, SGP-TR-224, DOI: 10.5445/IR/1000180056.
43. Kohl, T., Sass, I., Kolditz, O., Schüth, C., Rühaak, W., Schamp, J., Bremer, J., Rudolph, B., Schätzler, K., Schill, E. (2023): GeoLaB – Geothermal Laboratory in the crystalline Basement: synergies with research for a nuclear waste repository. In: *Safety of Nuclear Waste Disposal*, 2,135-136. DOI: 10.5194/sand-2-135-2023.
44. Kolditz, O., Gutiérrez-Negrín, L. C., Huenges, E., Jakobs, L., Kohl, T., Moeck, I. (2017): The new Geothermal Energy. Science, Society, and Technology. In: *Geotherm Energy* 5 (21). DOI: 10.1186/s40517-017-0078-8.
45. Kolditz, O., Jakobs, L. A., Huenges, E., Kohl, T. (2013): Geothermal Energy: a glimpse at the state of the field and an introduction to the journal. In: *GEEN* 1 (1), 1-2. DOI: 10.1007/s12665-013-2881-2.
46. Kumar, R., Neupane, G., Jin, W., Atkinson, T., McLing, T., Smith, R., Zhang, Y., Dobson, P., Schill, E., Kohl, T., Bauer, F., Nitschke, F., Bremer, J. (2024): Development of Reactive Transport Models for Very High Temperature Heat Aquifer Storage (VESTA) at a Pilot Site in Germany, In: 2024 Geothermal Rising Conference: Using the Earth to Save the Earth, Waikoloa, 27th - 30th October 2024, Transactions - Geothermal Resources Council, 48, pp. 1168-1183, DOI: 10.5445/IR/1000180195.
47. Marchand, S., Mersch, O., Nitschke, F., Selzer, M., Schmittbuhl, J., Schoenball, M. et al. (2019): A stochastic study of flow anisotropy and channeling in open rough fractures. In: *Rock Mechanics and Rock Engineering*, 53, 233-249. DOI: 10.1007/s00603-019-01907-4.
48. Meixner, J., Grimmer, J. C., Becker, A., Schill, E., Kohl, T. (2018): Comparison of different digital elevation models and satellite imagery for lineament analysis. Implications for identification and spatial arrangement of fault zones in crystalline basement rocks of the southern Black Forest (Germany). In: *Journal of Structural Geology*, 108, 256-268. DOI: 10.1016/j.jsg.2017.11.006.
49. Meixner, J., Schill, E., Gaucher, E., Kohl, T. (2014): Inferring the in situ stress regime in deep sediments: an example from the Bruchsal geothermal site. In: *GEEN* 2 (1), 1-17. DOI: 10.1186/s40517-014-0007-z.
50. Meixner, J., Schill, E., Grimmer, J. C., Gaucher, E., Kohl, T., Klingler, P. (2016): Structural control of geothermal reservoirs in extensional tectonic settings. An example from the Upper Rhine Graben. In: *Journal of Structural Geology* 82, 1-15. DOI: 10.1016/j.jsg.2015.11.003.
51. Meller, C., Bremer, J., Ankit, K., Baur, S., Bergfeldt, T., Blum, P., Kohl, T. et al. (2017): Integrated research as key to the development of a sustainable geothermal energy technology. In: *Energy Technol.*, 5(7), 965-1006. DOI: 10.1002/ente.201600579.
52. Meller, C., Genter, A., Kohl, T. (2014): The application of a neural network to map clay zones in crystalline rock. In: *Geophysical Journal International*, 196 (2), 837-849. DOI: 10.1093/gji/ggt423.
53. Meller, C., Kohl, T. (2014): The significance of hydrothermal alteration zones for the mechanical behavior of a geothermal reservoir. In: *GEEN*, 2 (1), 1-21. DOI: 10.1186/s40517-014-0012-2.
54. Meller, C., Kohl, T. (2015): How Synthetic Clay Content Logs from Well Logs Can Help to Assess the Behaviour of a Geothermal Reservoir Upon Hydrothermal Stimulation. In: IGA (Hg.): World Geothermal Congress. Melbourne, Australia, 19-25 April 2015: Int. Geothermal Association.

55. Meller, C., Kohl, T., Gaucher, E., Genter, A. (2012): Approach for determination of the failure probability of fractures at the Soultz-Sous-Forêts EGS project. In: *Thirty-Seventh Stanford Workshop on Geothermal Reservoir Engineering*, Vol. 37. Stanford, California, January 30 - February 1, 2012. Stanford University, pp. 843–850.
56. Meller, C., Kontny, A., Kohl, T. (2014): Identification and characterization of hydrothermally altered zones in granite by combining synthetic clay content logs with magnetic mineralogical investigations of drilled rock cuttings. In: *Geophysical Journal International*, 199 (1), 465-479. DOI: 10.1093/gji/ggu278.
57. Meller, C., Schill, E., Bremer, J., Kolditz, O., Bleicher, A., Benighaus, C. et al. (2018): Acceptability of geothermal installations. A geoethical concept for GeoLab. In: *Geothermics*, 73, 133-145. DOI: 10.1016/j.geothermics.2017.07.008.
58. Mundhenk, N., Huttenloch, P., Bässler, R., Kohl, T., Steger, H., Zorn, R. (2014): Electrochemical study of the corrosion of different alloys exposed to deaerated 80°C geothermal brines containing CO₂. In: *Corrosion Science*, 84, 180-188. DOI: 10.1016/j.corsci.2014.03.027.
59. Mundhenk, N., Huttenloch, P., Kohl, T., Steger, H., Zorn, R. (2012): Laboratory and In-Situ Corrosion Studies in Geothermal Environments. In: *Geothermal Resources Council Transactions*. Vol. 36. Reno, Nevada, USA, 30 September -3 October 2012, pp. 1101–1105.
60. Mundhenk, N., Huttenloch, P., Kohl, T., Steger, H., Zorn, R. (2013): Metal corrosion in geothermal brine environments of the Upper Rhine graben-Laboratory and on-site studies. In: *Geothermics*, 46, 14-21. DOI: 10.1016/j.geothermics.2012.10.006.
61. Mundhenk, N., Huttenloch, P., Sanjuan, B., Kohl, T., Steger, H., Zorn, R. (2013): Corrosion and scaling as interrelated phenomena in an operating geothermal power plant. In: *Corrosion Science*, 70, 17-28. DOI: 10.1016/j.corsci.2013.01.003.
62. Mundhenk, N., Scheiber, J., Zorn, R., Huttenloch, P., Genter, A., Kohl, T. (2014): Corrosion and Scaling in the Geothermal Cycle of Soultz-sous-Forêts (France). In: *NACE Int. - Corrosion Conference Series*, January 2014.
63. Nitschke, F., Held, S., Himmelsbach, T., Kohl, T. (2017): THC simulation of halite scaling in deep geothermal single well production. In: *Geothermics*, 65, 234-243. DOI: 10.1016/j.geothermics.2016.09.009.
64. Nitschke, F., Held, S., Neumann, T., Kohl, T. (2018): Geochemical characterization of the Villarrica geothermal system, Southern Chile, part II. Site-specific re-evaluation of SiO₂ and Na-K solute geothermometers. In: *Geothermics*, 74, 217-225. DOI: 10.1016/j.geothermics.2018.03.006.
65. Nitschke, F., Held, S., Villalon, I., Neumann, T., Kohl, T. (2017): Assessment of performance and parameter sensitivity of multicomponent geothermometry applied to a medium enthalpy geothermal system. In: *Geotherm Energy*, 5 (1), 1. DOI: 10.1186/s40517-017-0070-3.
66. Nitschke, F., Held, S., Villalon, I., Neumann, T., Kohl, T. (2017): In-situ temperature determination at the Villarrica Geothermal System, Southern Chile: Case Study on Evaluating Classical Solute and Multicomponent Geothermometers. In: *42nd Stanford Workshop on Geothermal Reservoir Engineering*. Stanford, California, February 13-15, 2017. Stanford University.
67. Orywall, P., Dimier, A., Kohl, T., Kuhn, D., Place, J., Zorn, R. (2015): Experimental Validation of a Numerical Model-Application of an Open Source Algorithm towards Geothermal Conditions. In: IGA (Hg.): *World Geothermal Congress*. Melbourne, Australia, 19-25 April 2015: Int. Geothermal Association.
68. Orywall, P., Drüppel, K., Kuhn, D., Kohl, T., Zimmermann, M., Eiche, E. (2017): Correction to. Flow-through experiments on the interaction of sandstone with Ba-rich fluids at geothermal conditions. In: *Geotherm Energy*, 5 (1), 1. DOI: 10.1186/s40517-017-0083-y.
69. Orywall, P., Drüppel, K., Kuhn, D., Kohl, T., Zimmermann, M., Eiche, E. (2017): Flow-through experiments on the interaction of sandstone with Ba-rich fluids at geothermal conditions. In: *Geotherm Energy*, 5 (1), 74. DOI: 10.1186/s40517-017-0079-7.
70. Pavez, M., Schill, E., Held, S., Díaz, D., Kohl, T. (2020): Visualizing preferential magmatic and geothermal fluid pathways via electric conductivity at Villarrica Volcano, S-Chile. In: *Journal of Volcanology and Geothermal Research*, 400, 106913. DOI: 10.1016/j.jvolgeores.2020.106913.
71. Pérez, I., Goldberg, V., Nitschke, F., Morata, D., Koschikowski, J., Kohl, T. (2025). Raw Material Potential of Geothermal Systems in Chile. In: Braun, A.C., Espinosa Gutiérrez, G., Tröger, D., Hirth, T. (eds) *Eco-Industrial Development as an Industrial Strategy*. Green Energy and Technology. Springer, Cham, pp. 381–398. DOI: 10.1007/978-3-031-73576-9_19.
72. Regenauer-Lieb, K., Bunger, A., Chua, H. T., Dyskin, A., Fusseis, F., Gaede, O. et al. (2015): Deep geothermal. The 'Moon Landing' mission in the unconventional energy and minerals space. In: *J. Earth Sci.* 26 (1), 2-10. DOI: 10.1007/s12583-015-0515-1.

73. Rolker, J., Schill, E., Stober, I., Schneider, J., Neumann, T., Kohl, T. (2015): Hydrochemical characterisation of a major central European heat flux anomaly. The Büchau geothermal spring system, Southern Black Forest, Germany. In: *GEEN*, 3 (1), 203. DOI: 10.1186/s40517-014-0021-1.
74. Rudolph, B., Berson, J., Held, S., Nitschke, F., Wenzel, F., Kohl, T., Schimmel, T. (2020): Development of thermo-reporting nanoparticles for accurate sensing of geothermal reservoir conditions. In: *Scientific reports*, 10 (1), 11422. DOI: 10.1038/s41598-020-68122-y.
75. Rudolph, B., Bremer, J., Stricker, K., Schill, E., Koenen, M., Dinkelmann, D., Wees, J. D. van, Kohl, T. (2022): Large-scale storage capacities as the backbone of a renewable energy system. In: *European Geothermal Congress (EGC)*, Berlin, Germany, 17-21 October 2022; proceedings. DOI: 10.5445/IR/1000152232.
76. Rybach, L., Kohl, T. (2018): Geothermal Energy and a Future Earth. In: Tom Beer (Hg.): *Global change and future earth. The geoscience perspective*. Cambridge, United Kingdom, New York, NY: Cambridge University Press (Special Publications of the International Union of Geodesy and Geophysics, 3), pp. 364–376.
77. Sahara, D. P., Schoenball, M., Gerolymatou, E., Kohl, T. (2017): Analysis of borehole breakout development using continuum damage mechanics. In: *International Journal of Rock Mechanics and Mining Sciences*, 97, 134-143. DOI: 10.1016/j.ijrmms.2017.04.005.
78. Sahara, D. P., Schoenball, M., Kohl, T., Müller, B. I. R. (2014): Impact of fracture networks on borehole breakout heterogeneities in crystalline rock. In: *International Journal of Rock Mechanics and Mining Sciences*, 71, 301-309. DOI: 10.1016/j.ijrmms.2014.07.001.
79. Schill, E., Cuenot, N., Genter, A., Kohl, T. (2015): Review of the Hydraulic Development in the Multi-Reservoir/Multi-Well EGS Project of Soultz-sous-Forêts. In: IGA (Hg.): World Geothermal Congress. Melbourne, Australia, 19-25 April 2015: Int. Geothermal Association.
80. Schill, E., Genter, A., Cuenot, N., Kohl, T. (2017): Hydraulic performance history at the Soultz EGS reservoirs from stimulation and long-term circulation tests. In: *Geothermics*, 70, 110-124. DOI: 10.1016/j.geothermics.2017.06.003.
81. Schill, E., Meixner, J., Meller, C., Grimm, M., Grimmer, J. C., Stober, I., Kohl, T. (2016): Criteria and geological setting for the generic geothermal underground research laboratory, GEOLAB. In: *Geotherm Energy*, 4 (1), 1. DOI: 10.1186/s40517-016-0049-5.
82. Schoenball, M., Baujard, C., Kohl, T., Dorbath, L. (2012): Changes of Coulomb Failure Stress due to Dislocations During Stimulation of GPK2 At Soultz-sous-Forêts. In: Thirty-Seventh Stanford Workshop on Geothermal Reservoir Engineering, Vol. 37. Stanford, California, January 30 - February 1, 2012. Stanford University.
83. Schoenball, M., Baujard, C., Kohl, T., Dorbath, L. (2012): The role of triggering by static stress transfer during geothermal reservoir stimulation. In: *J. Geophys. Res.*, 117 (B9), B09307. DOI: 10.1029/2012JB009304.
84. Schoenball, M., Dorbath, L., Gaucher, E., Wellmann, J. F., Kohl, T. (2014): Change of stress regime during geothermal reservoir stimulation. In: *GRL*, 41 (4), 1163-1170. DOI: 10.1002/2013GL058514.
85. Schoenball, M., Kohl, T. (2013): The Peculiar Shut-In Behavior of the Well GPK2 at Soultz-sous-Forêts. In: *Geothermal Resources Council Transactions*. Vol. 37. Las Vegas, Nevada, USA, 29 September -2 October 2012.
86. Schoenball, M., Sahara, D. P., Kohl, T. (2014): Time-dependent brittle creep as a mechanism for time-delayed wellbore failure. In: *International Journal of Rock Mechanics and Mining Sciences*, 70, 400-406. DOI: 10.1016/j.ijrmms.2014.05.012.
87. Seithel, R., Gaucher, E., Mueller, B., Steiner, U., Kohl, T. (2019): Probability of fault reactivation in the Bavarian Molasse Basin. In: *Geothermics*, 82, 81-90. DOI: 10.1016/j.geothermics.2019.06.004.
88. Schill, E., Waczowicz, S., Kohl, T., Stricker, K., Bracke, R., Sass, I., Rink, K. (2023): Wärmenetz-gekoppelte Speicherung im tiefen Untergrund, In: Forschung für die Wärmewende – klimaneutral, -effizient und flexibel: Beiträge zur FVEE-Jahrestagung 2022, Berlin, 12th -13th October 2022, pp. 96-101, DOI: 10.5445/IR/1000170376.
89. Seithel, R., Schmidt, R., Kohl, T., Henk, A., Stober, I. (2015): Local Stress Anomaly, their Interplay to Deep Seated Fault Structures and Geomechanical Characterization of Geothermal Reservoirs in southern Germany. In: IGA (Hg.): World Geothermal Congress. Melbourne, Australia, 19-25 April 2015: Int. Geothermal Association.
90. Seithel, R., Steiner, U., Müller, B. I. R., Hecht, C., Kohl, T. (2015): Local stress anomaly in the Bavarian Molasse Basin. In: *GEEN*, 3 (1), 1-22.
91. Spitzmüller, L., Berson, J., Kohl, T., Schimmel, T., Nitschke, F. (2025): Design of silica nanoparticle tracers with optimized dispersion stability, sorption and deposition properties based on (X)DLVO and filtration theory. In: *Geothermics*, 130, 103309, DOI: 10.1016/j.geothermics.2025.103309.

92. Spitzmüller, L., Berson, J., Nitschke, F., Kohl, T., Schimmel, T. (2024): Titania-Mediated Stabilization of Fluorescent Dye Encapsulation in Mesoporous Silica Nanoparticles. In: *Nanoscale Advances*, 6(13), 3450-3461, DOI: 10.1039/d4na00242c.
93. Spitzmüller, L., Berson, J., Schimmel, T., Kohl, T., Nitschke, F. (2024): Temperature stability and enhanced transport properties by surface modifications of silica nanoparticle tracers for geo-reservoir exploration. In: *Scientific Reports*, 14(1), 19222, DOI: 10.1038/s41598-024-70132-z.
94. Spitzmüller, L., Goldberg, V., Held, S., Grimmer, J. C., Winter, D., Genovese, M., Koschikowski, J., Kohl, T. (2021): Selective silica removal in geothermal fluids: Implications for applications for geothermal power plant operation and mineral extraction. In: *Geothermics*, 95, 102141, DOI: 10.1016/j.geothermics.2021.102141.
95. Spitzmüller, L., Nitschke, F., Rudolph, B., Berson, J., Schimmel, T., Kohl, T. (2023): Dissolution control and stability improvement of silica nanoparticles in aqueous media. In: *Journal of Nanoparticle Research*, 25, 40. DOI: 10.1007/s11051-023-05688-4.
96. Stober, I., Jägle, M., Kohl, T. (2023): Optimizing scenarios of a deep geothermal aquifer storage in the southern Upper Rhine Graben. In: *Geothermal Energy*, 11(1), 34, DOI: 10.1186/s40517-023-00275-1.
97. Stricker, K., Grimmer, J. C., Egert, R., Bremer, J., Korzani, M. G., Schill, E., Kohl, T. (2020): The Potential of Depleted Oil Reservoirs for High-Temperature Storage Systems. In: *Energies*, 13 (24), 6510. DOI: 10.3390/en13246510.
98. Stricker, K., Egert, R., Schill, E., Kohl, T. (2024): Risk of surface movements and reservoir deformation for high-temperature aquifer thermal energy storage (HT-ATES). In: *Geothermal Energy*, 12, 1, 4, DOI: 10.1186/s40517-024-00283-9.
99. Stricker, K., Schimschal, S., Müller, B., Wessling, S., Bender, F., Kohl, T. (2023): Importance of drilling-related processes on the origin of borehole breakouts – Insights from LWD observations. In: *Geomechanics for Energy and the Environment*, 34, 100463. DOI: 10.1016/j.gete.2023.100463.
100. Tolba, A. T., Bauer, F., Grimmer, J. C., Dashti, A., and Kohl, T. (2025): First identification of fluvial channels by advanced spectral decomposition in Chattian syn-rift successions of the central Upper Rhine Graben. In: Implications for subsurface energy storage, EGU General Assembly 2025, Vienna, Austria, 27 Apr–2 May 2025, EGU25-10539, DOI: 10.5445/IR/1000182343.
101. Wang, J., Nitschke, F., Gholami Korzani, M., Kohl, T. (2019): Temperature log simulations in high-enthalpy boreholes. In: *GEEN*, 7, 32. DOI: 10.1186/s40517-019-0149-0.
102. Wang, J., Nitschke, F., Gaucher, E., Kohl, T. (2021): Uncertainty analysis of numerical inversions of temperature logs from boreholes under injection conditions. In: *Journal of Geophysics and Engineering*, 18(6), 1022-1034. DOI: 10.1093/jge/gxab069.
103. Yan, G., Andersen, P. Ø., Qiao, Y., Feng, B., Kohl, T. (2025): Investigating the impact of wellbore lateral heat transfer on the performance of high-temperature aquifer thermal energy storage system by the coupling of wellbore and reservoir simulators. In: *Geoenergy Science and Engineering*, 251, 213874, DOI: 10.5445/IR/1000180939.
104. Yan, G., Busch, B., Egert, R., Esmaeilpour, M., Stricker, K., Kohl, T. (2023): Transport mechanisms of hydrothermal convection in faulted tight sandstones. In: *Solid Earth*, 14, 3, 293-310. DOI: 10.5194/se-14-293-2023.
105. Ystroem, L. H., Nitschke, F., Held, S., Kohl, T. (2020): A multicomponent geothermometer for high-temperature basalt settings. In: *GEEN* 8(1), 13. DOI: 10.1186/s40517-020-0158-z.
106. Ystroem, L. H., Nitschke, F., Kohl, T. (2022): Mult_predict-An optimised comprehensive multicomponent geothermometer. In: *Geothermics*, 105, 102548. DOI: 10.1016/j.geothermics.2022.102548.
107. Ystroem, L. H., Vollmer, M., Kohl, T., Nitschke, F. (2023): AnnRG-An artificial neural network solute geothermometer. In: *Applied Computing and Geosciences*, 20, 100144. DOI: 10.1016/j.acags.2023.100144.
108. Ystroem, L. H., Vollmer, M., Nitschke, F., Kohl, T. (2023): Deep learning and geochemical modelling as tools for solute geothermometry. In: *European Geothermal Congress 2022*, Proceedings, DOI: 10.5445/IR/1000157209.
109. Ziegler, M. O., Seithel, R., Niederhuber, T., Heidbach, O., Kohl, T., Müller, B., Rajabi, M., Reiter, K., Röckel, L. (2024): The effect of stiffness contrasts at faults on stress orientation. In: *Solid Earth*, 15, 1047-1063, DOI: 10.5194/se-15-1047-2024.
110. Ziegler, M. O., Seithel, R., Niederhuber, T., Reiter, K., Röckel, L. (2024): Stress state at faults: the influence of rock stiffness contrast, stress orientation, and ratio. In: *Solid Earth*, 15(8), 1047-1063, DOI: 10.5194/se-15-1047-2024.