

Wissenschaftliche Publikationen von TIMGEO-Mitarbeitern

Unsere wissenschaftlichen Arbeiten umfassen ein breites Themenspektrum und sind nachfolgend in diese Themenfelder untergliedert:

- [Methoden zur Interpretation von Feld- und Erkundungsdaten](#)
- [Hydrogeochemische Modellierung](#)
- [Integrierte Betrachtung von Wassereinzugsgebieten](#)
- [Bewertung/Designoptimierung von Grundwassersanierungsmaßnahmen, Mathematische Optimierung](#)
- [Boden-Atmosphäre-Interaktion](#)
- [Modelle und Simulationen zur Risikoabschätzung](#)
- [Ökobilanzierung von Grundwassersanierungsmaßnahmen](#)
- [Bewertung von Brachflächenrecycling-Optionen](#)

Methoden zur Interpretation von Feld- und Erkundungsdaten

Höyng, D., D’Affonseca, F.M., Bayer, P., Gomes de Oliveira, E., Perinotto, J.A.J., Reis, F., Weiß, H., Grathwohl, P.: High-resolution aquifer analog of fluvial–aeolian sediments of the Guarani aquifer system *Environ Earth Sci*, 2014, 71: 3081. doi: [10.1007/s12665-013-2684-5](https://doi.org/10.1007/s12665-013-2684-5)

Kübert, M., Finkel, M.: Contaminant mass discharge estimation in groundwater based on multilevel point measurements: A numerical evaluation of expected errors. *Journal of Contaminant Hydrology*, 84, 55-80, 2006, doi: [10.1016/j.jconhyd.2005.12.003](https://doi.org/10.1016/j.jconhyd.2005.12.003).

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D’Affonseca, F., Blum, P., Finkel, M., Melzer, R., Grathwohl, P.: Field scale characterization and modeling of contaminant release from a coal tar source zone. *Journal of Contaminant Hydrology*, 102, 120-139, 2008, doi: [10.1016/j.jconhyd.2008.03.011](https://doi.org/10.1016/j.jconhyd.2008.03.011).

D’Affonseca, F. M., Prommer, H., Finkel, M., Blum, Grathwohl, P.: Modeling of the long-term and transient evolution of biogeochemical and isotopic signatures in coal tar contaminated aquifers. *Water Resources Research* 47, W05518, 2011, doi: [10.1029/2010WR009108](https://doi.org/10.1029/2010WR009108).

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Finkel, M., R. Liedl, Teutsch, G.: Modelling Reactive Transport of Organic Solutes in Groundwater With a Lagrangian Streamtube Approach. - In: H. Schulz & G. Teutsch (Hrsg.): *Geochemical Processes - Concepts for Modelling Reactive Transport in Soils and Groundwater*, DFG Research Report, Wiley-VCH, Weinheim, 115-134, 2002, doi: [10.1002/9783527609703.ch7](https://doi.org/10.1002/9783527609703.ch7).

Finkel, M., Grathwohl, P., Cirpka, O.A.: A travel-time based approach to model kinetic sorption in highly heterogeneous porous media via reactive hydrofacies. *Water Resour. Res.*, 52, 9390–9411, 2016, doi: [10.1002/2016WR019147](https://doi.org/10.1002/2016WR019147).

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Grathwohl, P.: Diffusion in Natural Porous Media - Contaminant Transport, Sorption/Desorption and Dissolution Kinetics. Springer, 207 p., 1998, doi: [10.1007/978-1-4615-5683-1](https://doi.org/10.1007/978-1-4615-5683-1)

Höyng, D., Prommer, H., Blum, P., Grathwohl, P., D’Affonseca, F.M.: Evolution of carbon isotope signatures during reactive transport of hydrocarbons in heterogeneous aquifers. Journal of Contaminant Hydrology, 174, 10-27, 2015, doi: [10.1016/j.jconhyd.2014.12.005](https://doi.org/10.1016/j.jconhyd.2014.12.005)

Kouznetsova, I., Bayer, P., Ebert, M., Finkel, M.: Modelling the long-term performance of zero-valent iron using a spatio-temporal approach for iron aging. Journal of Contaminant Hydrology, 90 (1-2), 58-80, 2007, doi: [10.1016/j.jconhyd.2006.09.014](https://doi.org/10.1016/j.jconhyd.2006.09.014).

Sanz-Prat, A., Lu, C., Finkel, M., Cirpka, O.A.: Using Travel Times to Simulate Multi-Dimensional Bioreactive Transport in Time-Periodic Flows. J. Contam. Hydrol., 187, 1-17, 2016, doi: [10.1016/j.jconhyd.2016.01.005](https://doi.org/10.1016/j.jconhyd.2016.01.005).

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Integrierte Betrachtung von Wassereinzugsgebieten

Finkel, M., Barth, J., Grathwohl, P.: Advanced Tools and Models to Improve River Basin Management in Europe in the Context of Climate Change - AquaTerra. IWA Publishing London, 2010, 128 p. ISBN: 978-1843393726.

Grathwohl, P., Rügner, H., Wöhling, T. et al.: Catchments as reactors: a comprehensive approach for water fluxes and solute turnover. Environ Earth Sci, 69: 317-333, 2013, doi: [10.1007/s12665-013-2281-7](https://doi.org/10.1007/s12665-013-2281-7).

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Bewertung/Designoptimierung von Grundwassersanierungsmaßnahmen, Mathematische Optimierung

Bayer, P., Finkel, M., Teutsch, G.: Kombinierte „Pump-and-treat“-Barrieren-Systeme, Teil I: Minimierung der Grundwasserentnahmerate durch hydraulische Zusatzmaßnahmen. Grundwasser 3(9), 173-180, 2004, doi: [10.1007/s00767-004-0043-x](https://doi.org/10.1007/s00767-004-0043-x).

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- Bao, Z., Haberer, C., Maier, U., Grathwohl, P.: Modeling long-term uptake and re-volatilization of semi-volatile organic compounds (SVOCs) across the soil-atmosphere interface. *Science of The Total Environment*, 538:789-801, 2015, doi: [10.1016/j.scitotenv.2015.08.104](https://doi.org/10.1016/j.scitotenv.2015.08.104).
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McKnight, U.S., Finkel, M.: A system dynamics model for the screening-level long-term assessment of human health risks at contaminated sites. *Environmental Modelling and Software*, 40, 35-50, 2012, doi: [10.1016/j.envsoft.2012.07.007](https://doi.org/10.1016/j.envsoft.2012.07.007).

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Bayer, P., Finkel, M.: Life cycle assessment of active and passive groundwater remediation technologies. *Journal of Contaminant Hydrology*, 83, 171-199, 2006, doi: [10.1016/j.jconhyd.2005.11.005](https://doi.org/10.1016/j.jconhyd.2005.11.005).

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Bewertung von Brachflächenrecycling-Optionen

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