

Timo Houben

Position: PhD Student
Project: B04
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Research Interests

- spectral analysis of baseflow and groundwater head fluctuations to derive effective regional aquifer parameters
- numerical groundwater modelling
- high performance computing
- goal oriented modelling and complexity assessment
- machine learning

Current Project

PhD thesis, working title: “Spectral Analysis of Hydrogeological Time Series” Groundwater is one of the most important fresh water resource world wide. Due to intensive abstraction and climate change we observe critical depletion of essential groundwater bodies in different areas throughout the world. Predicting the response of regional aquifer systems to strongly changing conditions is crucial to develop sustainable water management strategies. Large scale, regional groundwater models are a promising tool to accomplish this task but typically difficult to parameterize. Applying spectral analyses to long time series of groundwater head and baseflow fluctuations we are able to infer regional and effective aquifer parameters which can be taken to parameterize extensive groundwater models.

Curriculum Vitae

08/2017 – ongoing	PhD researcher at UFZ Leipzig
09/2014 – 03/2016	Student Assistant, ahu AG
04/2013 – 02/2016	Master of Science, Applied Geosciences, RWTH Aachen, Germany
10/2009 – 02/2013	Bachelor of Science, Applied Geosciences, RWTH Aachen, Germany

Publications

Klitzsch, N., **Houben, T.**, Brunner, M., Kleinow, R., 2014: Geophysical prospection of siderite concretions in sediments – a feasibility study. Applied Geophysics and Geothermal Energy, E.ON Energy Research Center, RWTH Aachen University

Talks

From dynamic groundwater head measurements to regional aquifer parameters., **Houben, T.**, Kalbacher, T., Pujades, E., Dietrich, P., Attinger, S.. December 2019. AGU Fall Meeting 2019. San Francisco. Presentation (9.8 MB)

When does model complexity pay off? A case study for groundwater modelling., **Houben, T.**, de Rooij, G., Attinger, S., Kalbacher, T., Dietrich, P., October 2018. TERENO International Conference 2018. Berlin.

Posters

Regional aquifer parameters by spectral analysis of groundwater head fluctuations – a synthetic study. Houben, T., Kalbacher, T., Dietrich and S. Attinger. EGU General Assembly 2019. Vienna. EGU_19 (5.4 MB)