

List of publications

2017

- 1) Altdorf, D., C. v. Hebel, N. Borchard, J v. d. Kruk, H.R. Bogen, H. Vereecken and J.A. Huisman (2017): Potential of catchment-wide soil water content mapping using electromagnetic induction in a forest ecosystem. *Environmental Earth Science* 76, 111, doi:10.1007/s12665-016-6361-3.
- 2) Andreasen, M., K.H. Jensen, D. Desilets, M. Zreda, H. Bogen and M.C. Looms (2017): Cosmic-ray neutron transport at a forest field site: Identifying the signature of biomass and canopy interception. *Hydrol. Earth Syst. Sci.* 21, 1875–1894, doi:10.5194/hess-21-1875-2017.
- 3) Baatz, R., H.-J. Hendricks Franssen, X. Han, T. Hoar, H. Bogen and H. Vereecken (2017): Evaluating the value of a network of cosmic-ray probes for improving land surface modeling. *Hydrol. Earth Syst. Sci.*, 21, 2509–2530, doi:10.5194/hess-21-2509-2017.
- 4) Bogen, H., J.A. Huisman, B. Schilling, A. Weuthen and H. Vereecken (2017): Effective calibration of low-cost soil water content sensors. *Sensors* 17(1), 208, doi:10.3390/s17010208.
- 5) Bogen, H.R., C. Montzka, Harrie-Jan Hendricks-Franssen and H. Vereecken (2017): A blueprint for a distributed terrestrial ecosystem research infrastructure. In: A. Chabbi and Loescher H. (eds.): *Terrestrial Ecosystem Research Infrastructures: Challenges, New developments and Perspectives*, CRS Press, Taylor & Francis Group, pp. 279 -302.
- 6) Bogen, H.R., I. Wiekenkamp, J.A. Huisman, T. Pütz, A. Graf, C. Drüe and H. Vereecken (2017): Integrierte Untersuchung der Effekte eines Kahlschlags auf das hydrologische Systemverhalten eines Kleinzugsgebiets. In: M. Casper, O. Grönz, R. Ley and T. Schütz (eds.): *Den Wandel messen - Wie gehen wir mit Nichtstationarität in der Hydrologie um? - Beiträge zum Tag der Hydrologie 23./24. März 2017*. Forum für Hydrologie und Wasserbewirtschaftung 38.17, pp. 39-50.
- 7) Gottselig N. and I. Wiekenkamp,, L. Weihermüller, N. Brüggemann, A.E. Berns, H.R. Bogen, N. Borchard, E. Klumpp, A. Lücke, A. Missong, T. Pütz, H. Vereecken, J.A. Huisman and R. Bol (2017): Soil biogeochemistry in a forested headwater catchment – A three dimensional view. *J. Environ. Qual.* 45(6): 210–218, doi:10.2134/jeq2016.07.0276.
- 8) Montzka, C., H.R. Bogen, M. Zreda, A. Monerris, R. Morrison, S. Muddu and H. Vereecken (2017): Validation of Spaceborne and Modelled Surface Soil Moisture Products with Cosmic-Ray Neutron Probes. *Remote Sensing* 9(2), 103; doi:10.3390/rs9020103.
- 9) Weigand, S., R. Bol, B. Reichert, A. Graf, I. Wiekenkamp, M. Stockinger, A. Lücke, W. Tappe, H. Bogen, T. Pütz, W. Amelung, H. Vereecken (2017): Spatiotemporal dependency of dissolved organic carbon to nitrate in stream- and groundwater of a humid forested catchment – a wavelet transform coherence analysis. *Vadose Zone J.*, in press.

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- 10) Andreasen, M., K.H. Jensen, M. Zreda, D. Desilets, H. Bogen and M.C. Looms (2016): Modeling cosmic-ray neutron field measurements. *Water Resour. Res.* 52: 6451–6471, doi:10.1002/2015WR018236.
- 11) Andreasen, M., K.H. Jensen, D. Desilets, M. Zreda, H. Bogen and M.C. Looms (2016): Can canopy interception and biomass be inferred from cosmic-ray neutron intensity? Results from neutron transport modeling. *Hydrol. Earth Syst. Sci. Discuss.*, doi:10.5194/hess-2016-226.
- 12) Baatz, R., Hendricks Franssen, H.-J., Han, X., Hoar, T., Bogen, H. and Vereecken, H. (2016): Evaluating the value of a network of cosmic-ray probes for improving land surface modeling. *Hydrol. Earth Syst. Sci. Discuss.*, doi:10.5194/hess-2016-432.
- 13) Bogen, H., E. Borg, A. Brauer, P. Dietrich, I. Hajsek, I. Heinrich, R. Kiese, R. Kunkel, H. Kunstmann, B. Merz, E. Priesack, T. Pütz, H.P. Schmid, U. Wollschläger, H. Vereecken and S.

Zacharias (2016): TERENO: German network of terrestrial environmental observatories. *Journal of large-scale research facilities* 2, A52, <http://dx.doi.org/10.17815/jlsrf-2-98>.

- 14) Cornelissen, T., B. Diekkrüger and H.R. Bogaen (2016): Transferring small scale parameterization to improve mesoscale catchment modelling. *Water* 8(5), 202, doi:10.3390/w8050202.
- 15) Fang, Z., H.R. Bogaen, S. Kollet, J. Koch and H. Vereecken (2016): Scale dependent parameterization of soil hydraulic conductivity in the 3D simulation of hydrological processes in a forested headwater catchment. *J. Hydrol.* 536: 365–375, doi:10.1016/j.jhydrol.2016.03.020
- 16) Han, X., H.J. Hendricks-Franssen, M.Á. Jiménez Bello, R. Rosolem, H. Bogaen, F. Martínez Alzamora, A. Chanzy and H. Vereecken (2016): Simultaneous Soil Moisture and Properties Estimation for a Drip Irrigated Field by Assimilating Cosmic-ray Neutron Intensity. *J. Hydrol.* 539: 611–624.
- 17) Koch, J., S. Stisen, Z. Fang, H.R. Bogaen, T. Cornelissen, B. Diekkrüger and S. Kollet (2016): Inter-comparison of three distributed hydrological models with respect to the seasonal variability of soil moisture patterns at a small forested catchment. *J. Hydrol.* 533: 234-249, doi:10.1016/j.jhydrol.2015.12.002.
- 18) Montzka, C., T. Jagdhuber, R. Horn, H. Bogaen, I. Hajnsek, A. Reigber and H. Vereecken (2016): Evaluation of SMAP fusion algorithms with airborne active and passive L-band microwave remote sensing. *IEEE Transactions on Geoscience and Remote Sensing* 54 (7): 3878-3889, 10.1109/TGRS.2016.2529659.
- 19) Qu, W., H. R. Bogaen, J. A. Huisman, M. Schmidt, R. Kunkel, A. Weuthen, B. Schilling, J. Sorg and H. Vereecken (2016): The integrated water balance and soil data set of the Rollesbroich hydrological observatory. *Earth Syst. Sci. Data*, 8: 517–529, doi: 10.5194/essd-8-517-2016.
- 20) Stockinger, M.P., H.R. Bogaen, A. Lücke, B. Diekkrüger, T. Cornelissen and H. Vereecken (2016): Tracer sampling frequency influences estimates of young water fraction and streamwater transit time distribution. *J. Hydrol.* 541: 952-964, doi:10.1016/j.jhydrol.2016.08.007.
- 21) Wiekenkamp, I., J.A. Huisman, H. Bogaen, H. Lin and H. Vereecken (2016): Spatial and Temporal Occurrence of Preferential Flow in a Forested Headwater Catchment. *J. Hydrol.* 534: 139-149, doi:10.1016/j.jhydrol.2015.12.050.
- 22) Wiekenkamp, I., J.A. Huisman, H. Bogaen, A. Graf, H. Lin, C. Drüe and H. Vereecken (2016): Changes in Spatiotemporal Patterns of Hydrological Response after Partial Deforestation. *J. Hydrol.* 542: 648-661, doi:10.1016/j.jhydrol.2016.09.037.

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- 23) Baatz R., H. Bogaen, H.-J. Hendricks Franssen, J.A. Huisman, C. Montzka and H. Vereecken (2015): An empirical vegetation correction for soil water content quantification using cosmic ray probes. *Water Resour. Res.* 51(4): 2030–2046, doi: 10.1002/2014WR016443.
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- 25) Bogaen, H.R., J.A. Huisman, C. Hübner, J. Kusche, F. Jonard, S. Vey, A. Güntner and H. Vereecken (2015): Emerging methods for non-invasive sensing of soil moisture dynamics from field to catchment scale: A review. *WIREs Water* 2(6): 635–647, doi: 10.1002/wat2.1097.
- 26) Fang, Z., H.R. Bogaen, S. Kollet, J. Koch and H. Vereecken (2015): Spatio-temporal validation of long-term 3D hydrological simulations of a forested catchment using empirical orthogonal functions and wavelet coherence analysis. *J. Hydrol.* 529: 1754-1767, doi:10.1016/j.jhydrol.2015.08.011.

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- 29) Qu, W., H.R. Bogen, J.A. Huisman, J. Vanderborcht, M. Schuh, E. Priesack and H. Vereecken (2015): Predicting sub-grid variability of soil water content from basic soil information. *Geophys. Res. Lett.* 42: 789–796, doi:10.1002/2014GL062496.
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- 33) Baatz, R., H. Bogen, H.-J. Hendricks Franssen, J.A. Huisman, Q. Wei, C. Montzka and H. Vereecken (2014): Calibration of a catchment scale cosmic-ray soil moisture network: A comparison of three different methods. *J. Hydrol.* 516: 231-244, doi: 10.1016/j.jhydrol.2014.02.026.
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- 39) Qu, W., H.R. Bogen, J.A. Huisman, G. Martinez Garcia, Y. Pachepsky and H. Vereecken (2014): Effects of soil hydraulic properties on the spatial variability of soil water content: evidence from sensor network data and inverse modeling. *Vadose Zone J.*, 13(12), doi:10.2136/vzj2014.07.0099.
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