

Research Articles

- 5708** *A. Menafoglio, A. Guadagnini, and P. Secchi*
Stochastic simulation of soil particle-size curves in heterogeneous aquifer systems through a Bayes space approach (doi 10.1002/2015WR018369)
- 5727** *Matthias Sprenger, Stefan Seeger, Theresa Blume, and Markus Weiler*
Travel times in the vadose zone: Variability in space and time (doi 10.1002/2015WR018077)
- 5755** *Eva Kroener, Mohsen Zarebanadkouki, Marco Bittelli, and Andrea Carminati*
Simulation of root water uptake under consideration of nonequilibrium dynamics in the rhizosphere (doi 10.1002/2015WR018579)
- 5771** *D. Des. R. Owen, V. Pawlowsky-Glahn, J. J. Egocue, A. Buccianti, and J. M. Bradd*
Compositional data analysis as a robust tool to delineate hydrochemical facies within and between gas-bearing aquifers (doi 10.1002/2015WR018386)
- 5794** *Xuan Yu, Jie Yang, Thomas Graf, Mohammad Koneshloo, Michael A. O'Neal, and Holly A. Michael*
Impact of topography on groundwater salinization due to ocean surge inundation (doi 10.1002/2016WR018814)
- 5813** *Elazar Volk, Sascha C. Iden, Alex Furman, Wolfgang Durner, and Ravid Rosenzweig*
Biofilm effect on soil hydraulic properties: Experimental investigation using soil-grown real biofilm (doi 10.1002/2016WR018866)
- 5829** *Nicholas Zmijewski and Anders Wörman*
Hydrograph variances over different timescales in hydropower production networks (doi 10.1002/2015WR017775)
- 5847** *Anna Åkesson, Anders Wörman, Joakim Riml, and Jan Seibert*
Change in streamflow response in unregulated catchments in Sweden over the last century (doi 10.1002/2015WR018116)
- 5868** *Bramha Dutt Vishwakarma, Balaji Devaraju, and Nico Sneeuew*
Minimizing the effects of filtering on catchment scale GRACE solutions (doi 10.1002/2016WR018960)
- 5891** *Yusuf Jameel, Simon Brewer, Stephen P. Good, Brett J. Tipple, James R. Ehleringer, and Gabriel J. Bowen*
Tap water isotope ratios reflect urban water system structure and dynamics across a semiarid metropolitan area (doi 10.1002/2016WR019104)
- 5911** *F. P. J. de Barros, A. Bellin, V. Cvetkovic, G. Dagan, and A. Fiori*
Aquifer heterogeneity controls on adverse human health effects and the concept of the hazard attenuation factor* (doi 10.1002/2016WR018933)
- *This article is part of a Special Section—Modeling highly heterogeneous aquifers: Lessons learned in the last 30 years from the MADE experiments and others
- 5923** *Chi-Yuen Wang, Xin Liao, Lee-Ping Wang, Chung-Ho Wang, and Michael Manga*
Large earthquakes create vertical permeability by breaching aquitards (doi 10.1002/2016WR018893)
- 5938** *Desirée Tullos, Cara Walter, and Jason Dunham*
Does resolution of flow field observation influence apparent habitat use and energy expenditure in juvenile coho salmon? (doi 10.1002/2015WR018501)
- 5951** *M. Redolfi, M. Tubino, W. Bertoldi, and J. Brasington*
Analysis of reach-scale elevation distribution in braided rivers: Definition of a new morphologic indicator and estimation of mean quantities (doi 10.1002/2015WR017918)
- 5971** *Jiangjiang Zhang, Weixuan Li, Lingzao Zeng, and Laosheng Wu*
An adaptive Gaussian process-based method for efficient Bayesian experimental design in groundwater contaminant source identification problems (doi 10.1002/2016WR018598)
- 5985** *Pascal Castellazzi, Richard Martel, Alfonso Rivera, Jianliang Huang, Goran Pavlic, Angus I. Calderhead, Estelle Chaussard, Jaime Garfias, and Javier Salas*
Groundwater depletion in Central Mexico: Use of GRACE and InSAR to support water resources management (doi 10.1002/2015WR018211)
- 6004** *Flavia Brunale Vilela de Moura Leite, Lídia Sanches Bertolo, and Rozely Ferreira Santos*
Practices and perceptions on water resource sustainability in ecovillages (doi 10.1002/2015WR018117)
- 6018** *Naomi E. Detenbeck, Alisa C. Morrison, Ralph W. Abele, and Darin A. Kopp*
Spatial statistical network models for stream and river temperature in New England, USA (doi 10.1002/2015WR018349)
- 6041** *F. K. Rengers, L. A. McGuire, J. W. Kean, D. M. Staley, and D. E. J. Hobley*
Model simulations of flood and debris flow timing in steep catchments after wildfire (doi 10.1002/2015WR018176)

- 6062** *Scott L. Painter, Ethan T. Coon, Adam L. Atchley, Markus Berndt, Rao Garimella, J. David Moulton, Daniil Svyatskiy, and Cathy J. Wilson*
Integrated surface/subsurface permafrost thermal hydrology: Model formulation and proof-of-concept simulations (doi 10.1002/2015WR018427)
- 6078** *Maura C. Allaire*
Using practical and social information to influence flood adaptation behavior (doi 10.1002/2015WR018258)
- 6094** *Thomas Ritschel and Kai Uwe Totsche*
Closed-flow column experiments: A numerical sensitivity analysis of reactive transport and parameter uncertainty (doi 10.1002/2015WR018388)
- 6111** *Teng Xu and J. Jaime Gómez-Hernández*
Characterization of non-Gaussian conductivities and porosities with hydraulic heads, solute concentrations, and water temperatures* (doi 10.1002/2016WR019011)
- *This article is part of a Special Section—Modeling highly heterogeneous aquifers: Lessons learned in the last 30 years from the MADE experiments and others
- 6137** *Rashi Bhushan and Tze Ling Ng*
Integrating desalination to reservoir operation to increase redundancy for more secure water supply (doi 10.1002/2015WR018373)
- 6156** *Alraune Zech, Sebastian Müller, Juliane Mai, Falk Heße, and Sabine Attinger*
Extending Theis' solution: Using transient pumping tests to estimate parameters of aquifer heterogeneity* (doi 10.1002/2015WR018509)
- *This article is part of a Special Section—Modeling highly heterogeneous aquifers: Lessons learned in the last 30 years from the MADE experiments and others
- 6171** *A. Simone, O. Giustolisi, and D. B. Laucelli*
A proposal of optimal sampling design using a modularity strategy (doi 10.1002/2016WR018944)
- 6186** *C. Rhett Jackson, Enhao Du, Julian Klaus, Natalie A. Griffiths, Menberu Bitew, and Jeffrey J. McDonnell*
Interactions among hydraulic conductivity distributions, subsurface topography, and transport thresholds revealed by a multitracer hillslope irrigation experiment (doi 10.1002/2015WR018364)
- 6207** *B. Dessirier, A. Frampton, Å. Fransson, and J. Jarsjö*
Modeling early in situ wetting of a compacted bentonite buffer installed in low permeable crystalline bedrock (doi 10.1002/2016WR018678)
- 6222** *Linda Kuil, Gemma Carr, Alberto Viglione, Alexia Prskawetz, and Günter Blöschl*
Conceptualizing socio-hydrological drought processes: The case of the Maya collapse (doi 10.1002/2015WR018298)
- 6243** *Zhiyong Liu, Tobias Törnros, and Lucas Menzel*
A probabilistic prediction network for hydrological drought identification and environmental flow assessment (doi 10.1002/2016WR019106)
- 6263** *Rafael March, Florian Doster, and Sebastian Geiger*
Accurate early-time and late-time modeling of countercurrent spontaneous imbibition (doi 10.1002/2015WR018456)
- 6277** *Katrien Van Eerdenbrugh, Stijn Van Hoey, and Niko E. C. Verhoest*
Identification of temporal consistency in rating curve data: Bidirectional Reach (BReach) (doi 10.1002/2016WR018692)
- 6297** *Xue Li, Gregoire Mariethoz, DeTang Lu, and Niklas Linde*
Patch-based iterative conditional geostatistical simulation using graph cuts (doi 10.1002/2015WR018378)
- 6321** *Mason O. Stahl, Charles F. Harvey, Alexander van Geen, Jing Sun, Pham Thi Kim Trang, Vi Mai Lan, Thao Mai Phuong, Pham Hung Viet, and Benjamin C. Bostick*
River bank geomorphology controls groundwater arsenic concentrations in aquifers adjacent to the Red River, Hanoi Vietnam (doi 10.1002/2016WR018891)
- 6335** *Brian F. Thomas, Felix W. Landerer, David N. Wiese, and James S. Famiglietti*
A comparison of watershed storage trends over the eastern and upper Midwestern regions of the United States, 2003–2015 (doi 10.1002/2016WR018617)
- 6348** *M. Guan, N. G. Wright, P. A. Sleigh, S. Ahilan, and R. Lamb*
Physical complexity to model morphological changes at a natural channel bend (doi 10.1002/2015WR017917)
- 6365** *Nandita Gaur and Binayak P. Mohanty*
Land-surface controls on near-surface soil moisture dynamics: Traversing remote sensing footprints (doi 10.1002/2015WR018095)
- 6386** *Bartolomé Deyà-Tortella, Celso Garcia, William Nilsson, and Dolores Tirado*
The effect of the water tariff structures on the water consumption in Mallorcan hotels (doi 10.1002/2016WR018621)
- 6404** *Albert I. J. M. Van Dijk, G. Robert Brakenridge, Albert J. Kettner, Hylke E. Beck, Tom De Groot, and Jaap Schellekens*
River gauging at global scale using optical and passive microwave remote sensing (doi 10.1002/2015WR018545)

- 6419** *Xiang Huang, Charles B. Andrews, Jie Liu, Yingying Yao, Chuankun Liu, Scott W. Tyler, John S. Selker, and Chunmiao Zheng*
Assimilation of temperature and hydraulic gradients for quantifying the spatial variability of streambed hydraulics (doi 10.1002/2015WR018408)
- 6440** *M. Jim Hendry, S. Lee Barbour, Erin E. Schmeling, Scott O. C. Mundle, and M. Huang*
Fate and transport of dissolved methane and ethane in cretaceous shales of the Williston Basin, Canada (doi 10.1002/2016WR019047)
- 6451** *Mie Andreasen, Karsten H. Jensen, Marek Zreda, Darin Desilets, Heye Bogena, and Majken C. Looms*
Modeling cosmic ray neutron field measurements (doi 10.1002/2015WR018236)
- 6472** *J. D. Hyman, G. Aldrich, H. Viswanathan, N. Makedonska, and S. Karra*
Fracture size and transmissivity correlations: Implications for transport simulations in sparse three-dimensional discrete fracture networks following a truncated power law distribution of fracture size (doi 10.1002/2016WR018806)
- 6490** *Bo Guo, Karl W. Bandilla, Jan M. Nordbotten, Michael A. Celia, Eirik Keilegavlen, and Florian Doster*
A multiscale multilayer vertically integrated model with vertical dynamics for CO₂ sequestration in layered geological formations (doi 10.1002/2016WR018714)
- 6506** *Alessio Fumagalli, Luca Pasquale, Stefano Zonca, and Stefano Micheletti*
An upscaling procedure for fractured reservoirs with embedded grids (doi 10.1002/2015WR017729)
- 6526** *Chun-Hsu Su, Tim J. Peterson, Justin F. Costelloe, and Andrew W. Western*
A synthetic study to evaluate the utility of hydrological signatures for calibrating a base flow separation filter (doi 10.1002/2015WR018177)
- 6541** *R. H. Karlsen, T. Grabs, K. Bishop, I. Buffam, H. Laudon, and J. Seibert*
Landscape controls on spatiotemporal discharge variability in a boreal catchment (doi 10.1002/2016WR019186)
- 6557** *Iael Raji, Jiří Simůnek, Alon Ben-Gal, and Naftali Lazarovitch*
Water flow and multicomponent solute transport in drip-irrigated lysimeters (doi 10.1002/2016WR018930)
- 6575** *Matthew S. Lachniet, Daniel E. Lawson, Haroon Stephen, Alison R. Sloat, and William P. Patterson*
Isoscapes of δ¹⁸O and δ²H reveal climatic forcings on Alaska and Yukon precipitation (doi 10.1002/2016WR019436)
- 6587** *Teng Xu and J. Jaime Gómez-Hernández*
Joint identification of contaminant source location, initial release time, and initial solute concentration in an aquifer via ensemble Kalman filtering* (doi 10.1002/2016WR019111)
*This article is part of a Special Section—Modeling highly heterogeneous aquifers: Lessons learned in the last 30 years from the MADE experiments and others
- 6596** *U. Schneidewind, M. van Berkel, C. Anibas, G. Vandersteen, C. Schmidt, I. Joris, P. Seuntjens, O. Batelaan, and H. J. Zwart*
LPMLE3: A novel 1-D approach to study water flow in streambeds using heat as a tracer (doi 10.1002/2015WR017453)
- 6611** *Milad Hooshyar and Dingbao Wang*
An analytical solution of Richards' equation providing the physical basis of SCS curve number method and its proportionality relationship (doi 10.1002/2016WR018885)
- 6621** *R. D. Williams, R. Measures, D. M. Hicks, and J. Brasington*
Assessment of a numerical model to reproduce event-scale erosion and deposition distributions in a braided river (doi 10.1002/2015WR018491)
- 6643** *C. Bracken, B. Rajagopalan, L. Cheng, W. Kleiber, and S. Gangopadhyay*
Spatial Bayesian hierarchical modeling of precipitation extremes over a large domain (doi 10.1002/2016WR018768)
- 6656** *K. P. Hilgersom, N. C. van de Giesen, P. G. B. de Louw, and M. Zijlema*
Three-dimensional dense distributed temperature sensing for measuring layered thermohaline systems (doi 10.1002/2016WR019119)
- 6671** *Shibo Wang, Tetsu K. Tokunaga, Jiamin Wan, Wenming Dong, and Yongman Kim*
Capillary pressure-saturation relations in quartz and carbonate sands: Limitations for correlating capillary and wettability influences on air, oil, and supercritical CO₂ trapping (doi 10.1002/2016WR018816)

Comment and Reply

- 6691** *Shawn Schottler, Jason Ulrich, and Daniel Engstrom*
Comment on "Climate and agricultural land use change impacts on streamflow in the upper midwestern United States" by Satish C. Gupta et al. (doi 10.1002/2015WR018497)
- 6699** *Satish C. Gupta, Andrew C. Kessler, Melinda K. Brown, and William M. Schuh*
Reply to comment by Schottler et al. on "Climate and agricultural land use change impacts on streamflow in the upper midwestern United States" (doi 10.1002/2016WR018827)