

Review Article

- 6359** *Stefan Krause, Jörg Lewandowski, Nancy B. Grimm, David M. Hannah, Gilles Pinay, Karlie McDonald, Eugènia Martí, Alba Argerich, Laurent Pfister, Julian Klaus, Tom Battin, Scott T. Larned, Jacob Schelker, Jan Fleckenstein, Christian Schmidt, Michael O. Rivett, Glenn Watts, Francesc Sabater, Albert Sorolla, and Valentina Turk*
Ecohydrological interfaces as hot spots of ecosystem processes (doi 10.1002/2016WR019516)

Research Articles

- 6377** *Ran Hu, Jiamin Wan, Yongman Kim, and Tetsu K. Tokunaga*
Wettability impact on supercritical CO₂ capillary trapping: Pore-scale visualization and quantification (doi 10.1002/2017WR020721)
- 6395** *Georgia Destouni, Ida Fischer, and Carmen Prieto*
Water quality and ecosystem management: Data-driven reality check of effects in streams and lakes* (doi 10.1002/2016WR019954)

*This article is part of a Special Section—Emergent Aquatic Carbon-nutrient Dynamics as Products of Hydrological, Biogeochemical, and Ecological Interactions
- 6407** *Ashley J. Wright, Jeffrey P. Walker, and Valentijn R. N. Pauwels*
Estimating rainfall time series and model parameter distributions using model data reduction and inversion techniques (doi 10.1002/2017WR020442)
- 6425** *Simon Dadson, Jim W. Hall, Dustin Garrick, Claudia Sadoff, David Grey, and Dale Whittington*
Water security, risk, and economic growth: Insights from a dynamical systems model* (doi 10.1002/2017WR020640)

*This article is part of a Special Section—Socio-hydrology: Spatial and Temporal Dynamics of Coupled Human-Water Systems
- 6439** *Xi Chen, Karina V. R. Schäfer, and Lee Slater*
Methane emission through ebullition from an estuarine mudflat: 2. Field observations and modeling of occurrence probability (doi 10.1002/2016WR019720)

*This article is a companion to *Chen and Slater [2016]*, doi:10.1002/2015WR018058.
- 6454** *Tingting Liu, James J. Opaluch, and Emi Uchida*
The impact of water quality in Narragansett Bay on housing prices (doi 10.1002/2016WR019606)
- 6472** *Anna K. Liljedahl, Larry D. Hinzman, Douglas L. Kane, Walter C. Oechel, Craig E. Tweedie, and Donatella Zona*
Tundra water budget and implications of precipitation underestimation (doi 10.1002/2016WR020001)
- 6487** *S. Huizer, M. C. Karaoulis, G. H. P. Oude Essink, and M. F. P. Bierkens*
Monitoring and simulation of salinity changes in response to tide and storm surges in a sandy coastal aquifer system (doi 10.1002/2016WR020339)
- 6510** *Dylan M. Young, Andy J. Baird, Paul J. Morris, and Joseph Holden*
Simulating the long-term impacts of drainage and restoration on the ecohydrology of peatlands (doi 10.1002/2016WR019898)
- 6523** *Abigail Tomasek, Jessica L. Kozarek, Miki Hondzo, Nicole Lurndahl, Michael J. Sadowsky, Ping Wang, and Christopher Staley*
Environmental drivers of denitrification rates and denitrifying gene abundances in channels and riparian areas (doi 10.1002/2016WR019566)
- 6539** *William I. Ford, James F. Fox, and Erik Pollock*
Reducing equifinality using isotopes in a process-based stream nitrogen model highlights the flux of algal nitrogen from agricultural streams (doi 10.1002/2017WR020607)
- 6562** *Shuang Yi, Chunqiao Song, Qiuyu Wang, Linsong Wang, Kosuke Heki, and Wenke Sun*
The potential of GRACE gravimetry to detect the heavy rainfall-induced impoundment of a small reservoir in the upper Yellow River (doi 10.1002/2017WR020793)
- 6579** *Charles I. Scaife and Lawrence E. Band*
Nonstationarity in threshold response of stormflow in southern Appalachian headwater catchments (doi 10.1002/2017WR020376)

- 6597** *D. Damigos, G. Tentes, M. Balzarini, F. Furlanis, and A. Vianello*
Revealing the economic value of managed aquifer recharge: Evidence from a contingent valuation study in Italy (doi 10.1002/2016WR020281)
- 6612** *Elena Leonarduzzi, Peter Molnar, and Brian W. McArde*
Predictive performance of rainfall thresholds for shallow landslides in Switzerland from gridded daily data (doi 10.1002/2017WR021044)
- 6626** *Z. Zhang, S. Glaser, R. Bales, M. Conklin, R. Rice, and D. Marks*
Insights into mountain precipitation and snowpack from a basin-scale wireless-sensor network (doi 10.1002/2016WR018825)
- This article is a companion to *Zhang et al.* [2017], doi:10.1002/2016WR019619.
- 6642** *Matthew H. Kaufman, M. Bayani Cardenas, Jim Buttles, Adam J. Kessler, and Perran L. M. Cook*
Hyporheic hot moments: Dissolved oxygen dynamics in the hyporheic zone in response to surface flow perturbations (doi 10.1002/2016WR020296)
- 6663** *G. Stecca, R. Measures, and D. M. Hicks*
A framework for the analysis of noncohesive bank erosion algorithms in morphodynamic modeling (doi 10.1002/2017WR020756)
- 6687** *Gerardo Severino, Maddalena Scarfato, and Alessandro Comegna*
Stochastic analysis of unsaturated steady flows above the water table (doi 10.1002/2017WR020554)
- 6709** *A. M. González-Ferreras and J. Barquín*
Mapping the temporary and perennial character of whole river networks (doi 10.1002/2017WR020390)
- 6725** *Matthew R. Sanderson, Jason S. Bergtold, Jessica L. Heier Stamm, Marcellus M. Caldas, and Steven M. Ramsey*
Bringing the "social" into sociohydrology: Conservation policy support in the Central Great Plains of Kansas, USA* (doi 10.1002/2017WR020659)
- *This article is part of a Special Section—Socio-hydrology: Spatial and Temporal Dynamics of Coupled Human-Water Systems
- 6744** *Joseph H. A. Guillaume, Casey Helgeson, Sondoss Elsayah, Anthony J. Jakeman, and Matti Kummu*
Toward best practice framing of uncertainty in scientific publications: A review of Water Resources Research abstracts* (doi 10.1002/2017WR020609)
- *This article is part of a Special Section—Engagement, Communication, and Decision-Making Under Uncertainty
- 6763** *Ivan Arismendi, Jeremiah D. Groom, Maryanne Reiter, Sherri L. Johnson, Liz Dent, Mark Meleson, Alba Argerich, and Arne E. Skaugset*
Suspended sediment and turbidity after road construction/improvement and forest harvest in streams of the Trask River Watershed Study, Oregon (doi 10.1002/2016WR020198)
- 6784** *Youzuo Lin, Ellen B. Le, Daniel O'Malley, Velimir V. Vesselinov, and Tan Bui-Thanh*
Large-scale inverse model analyses employing fast randomized data reduction (doi 10.1002/2016WR020299)
- 6802** *Nicoleta C. Cristea, Ian Breckheimer, Mark S. Raleigh, Janneke HilleRisLambers, and Jessica D. Lundquist*
An evaluation of terrain-based downscaling of fractional snow covered area data sets based on LiDAR-derived snow data and orthoimagery (doi 10.1002/2017WR020799)
- 6821** *J. Sreekanth, Henry Lau, and D. E. Pagendam*
Design of optimal groundwater monitoring well network using stochastic modeling and reduced-rank spatial prediction (doi 10.1002/2017WR020385)
- 6841** *Stephane Bertin, Jane Groom, and Heide Friedrich*
Isolating roughness scales of gravel-bed patches (doi 10.1002/2016WR020205)
- 6857** *Bettina Schaeffli and Dmitri Kavetski*
Bayesian spectral likelihood for hydrological parameter inference (doi 10.1002/2016WR019465)
- 6885** *Maoyuan Feng, Pan Liu, Shenglian Guo, Liangsheng Shi, Chao Deng, and Bo Ming*
Deriving adaptive operating rules of hydropower reservoirs using time-varying parameters generated by the EnKF (doi 10.1002/2016WR020180)
- 6908** *Christopher J. Tennant, Adrian A. Harpold, Kathleen Ann Lohse, Sarah E. Godsey, Benjamin T. Crosby, Laurel G. Larsen, Paul D. Brooks, Robert W. Van Kirk, and Nancy F. Glenn*
Regional sensitivities of seasonal snowpack to elevation, aspect, and vegetation cover in western North America (doi 10.1002/2016WR019374)
- 6927** *Angang Li, Antoine F. Aubeneau, Diogo Bolster, Jennifer L. Tank, and Aaron I. Packman*
Covariation in patterns of turbulence-driven hyporheic flow and denitrification enhances reach-scale nitrogen removal* (doi 10.1002/2016WR019949)

*This article is part of a Special Section—Emergent Aquatic Carbon-nutrient Dynamics as Products of Hydrological, Biogeochemical, and Ecological Interactions

- 6945** *M. van Oorschot, M. G. Kleinhans, G. W. Geerling, G. Egger, R. S. E. W. Leuven, and H. Middelkoop*
Modeling invasive alien plant species in river systems: Interaction with native ecosystem engineers and effects on hydro-morphodynamic processes (doi 10.1002/2017WR020854)
- 6970** *Richard G. Niswonger, Eric D. Morway, Enrique Triana, and Justin L. Huntington*
Managed aquifer recharge through off-season irrigation in agricultural regions (doi 10.1002/2017WR020458)
- 6993** *Rob de Rooij and Wendy Graham*
Generation of complex karstic conduit networks with a hydrochemical model (doi 10.1002/2017WR020768)
- 7012** *Tereza Šimková*
Homogeneity testing for spatially correlated data in multivariate regional frequency analysis (doi 10.1002/2016WR020295)
- 7029** *G. Mariotti and A. Canestrelli*
Long-term morphodynamics of muddy backbarrier basins: Fill in or empty out? (doi 10.1002/2017WR020461)
- 7055** *Margaret A. Zimmer and Brian L. McGlynn*
Ephemeral and intermittent runoff generation processes in a low relief, highly weathered catchment (doi 10.1002/2016WR019742)
- 7078** *Yogendra Gurung, Jane Zhao, Bal Kumar K. C., Xun Wu, Bhim Suwal, and Dale Whittington*
The costs of delay in infrastructure investments: A comparison of 2001 and 2014 household water supply coping costs in the Kathmandu Valley, Nepal (doi 10.1002/2016WR019529)
- 7103** *Natalie G. Nelson, Rafael Muñoz-Carpena, Patrick J. Neale, Maria Tzortziou, and J. Patrick Megonigal*
Temporal variability in the importance of hydrologic, biotic, and climatic descriptors of dissolved oxygen dynamics in a shallow tidal-marsh creek (doi 10.1002/2016WR020196)
- 7121** *A. Revil, A. Coperey, Z. Shao, N. Florsch, I. L. Fabricius, Y. Deng, J. R. Delsman, P. S. Pauw, M. Karaoulis, P. G. B. de Louw, E. S. van Baaren, W. Dabekaussen, A. Menkovic, and J. L. Gunnink*
Complex conductivity of soils (doi 10.1002/2017WR020655)
- 7148** *L. M. King, S. P. Simonovic, and D. N. D. Hartford*
Using system dynamics simulation for assessment of hydropower system safety (doi 10.1002/2017WR020834)
- 7175** *Ryuichiro Shinohara, Mikiya Hiroki, Ayato Kohzu, Akio Imai, Tetsunori Inoue, Eiichi Furusato, Kazuhiro Komatsu, Takayuki Satou, Noriko Tomioka, Koichi Shimotori, and Shingo Miura*
Role of organic phosphorus in sediment in a shallow eutrophic lake (doi 10.1002/2017WR020486)
- 7190** *Y. J. Li, Amalia Kokkinaki, Eric F. Darve, and Peter K. Kitanidis*
Smoothing-based compressed state Kalman filter for joint state-parameter estimation: Applications in reservoir characterization and CO₂ storage monitoring (doi 10.1002/2016WR020168)
- 7208** *J. D. Quinn, P. M. Reed, M. Giuliani, and A. Castelletti*
Rival framings: A framework for discovering how problem formulation uncertainties shape risk management trade-offs in water resources systems (doi 10.1002/2017WR020524)
- 7234** *Ulrike Obertegger, Biel Obrador, and Giovanna Flaim*
Dissolved oxygen dynamics under ice: Three winters of high-frequency data from Lake Tovel, Italy* (doi 10.1002/2017WR020599)
- *This article is part of a Special Section—Responses to Environmental Change in Aquatic Mountain Ecosystems
- 7247** *Carine Poncelet, Ralf Merz, Bruno Merz, Juraj Parajka, Ludovic Oudin, Vazken Andréassian, and Charles Perrin*
Process-based interpretation of conceptual hydrological model performance using a multinational catchment set (doi 10.1002/2016WR019991)
- 7269** *Pablo V. Mosquera, Henrietta Hampel, Raúl F. Vázquez, Miguel Alonso, and Jordi Catalan*
Abundance and morphometry changes across the high-mountain lake-size gradient in the tropical Andes of Southern Ecuador* (doi 10.1002/2017WR020902)
- *This article is part of a Special Section—Responses to Environmental Change in Aquatic Mountain Ecosystems
- 7281** *Alec Kucala, Mario J. Martinez, Yifeng Wang, and David R. Noble*
The influence of interfacial slip on two-phase flow in rough pores (doi 10.1002/2016WR020059)
- 7296** *A. Wörman, A. Bottacin-Busolin, N. Zmijewski, and J. Riml*
Spectral decomposition of regulatory thresholds for climate-driven fluctuations in hydro- and wind power availability (doi 10.1002/2017WR020460)
- 7316** *Anthony J. Tesoriero, Jo Ann Gronberg, Paul F. Juckem, Matthew P. Miller, and Brian P. Austin*
Predicting redox-sensitive contaminant concentrations in groundwater using random forest classification (doi 10.1002/2016WR020197)
- 7332** *Nicholas B. Engdahl*
Transient effects on confined groundwater age distributions: Considering the necessity of time-dependent simulations (doi 10.1002/2016WR019916)

7349 *Jonathan M. Duncan, Claire Welty, John T. Kemper, Peter M. Groffman, and Lawrence E. Band*
Dynamics of nitrate concentration-discharge patterns in an urban watershed* (doi 10.1002/2017WR020500)

*This article is part of a Special Section—Continuous Nutrient Sensing in Research and Management: Applications and Lessons Learned Across Aquatic Environments and Watersheds

7366 *Zhiwei Tian and Junye Wang*
Lattice Boltzmann simulation of CO₂ reactive transport in network fractured media (doi 10.1002/2017WR021063)

7382 *Suparana Katyaini and Anamika Barua*
Assessment of interstate virtual water flows embedded in agriculture to mitigate water scarcity in India (1996–2014) (doi 10.1002/2016WR020247)

7401 *Zhengzheng Zhou, James A. Smith, Long Yang, Mary Lynn Baeck, Molly Chaney, Marie-Claire Ten Veldhuis, Huiping Deng, and Shuguang Liu*
The complexities of urban flood response: Flood frequency analyses for the Charlotte metropolitan region (doi 10.1002/2016WR019997)

7426 *Andrea Bottacin-Busolin*
Non-Fickian dispersion in open-channel flow over a porous bed (doi 10.1002/2016WR020348)

7457 *Qingyang Lin, Branko Bijeljic, Holger Rieke, and Martin J. Blunt*
Visualization and quantification of capillary drainage in the pore space of laminated sandstone by a porous plate method using differential imaging X-ray microtomography (doi 10.1002/2017WR021083)

Technical Reports: Data

7469 *S. Haber-Pohlmeier, J. Vanderborght, and A. Pohlmeier*
Quantitative mapping of solute accumulation in a soil-root system by magnetic resonance imaging (doi 10.1002/2017WR020832)

Technical Reports: Methods

7481 *John S. Selker and Shmuel Assouline*
An explicit, parsimonious, and accurate estimate for ponded infiltration into soils using the Green and Ampt approach (doi 10.1002/2017WR021020)

7488 *Gabriele Chiogna and Massimo Rolle*
Entropy-based critical reaction time for mixing-controlled reactive transport (doi 10.1002/2017WR020522)