

**Research Articles**

- 6710** *Boris F. Ochoa-Tocachi, Wouter Buytaert, and Bert De Bièvre*  
Regionalization of land-use impacts on streamflow using a network of paired catchments  
(doi 10.1002/2016WR018596)
- 6730** *José Luis Salinas, Andrea Kiss, Alberto Viglione, Reinhard Viertl, and Günter Blöschl*  
A fuzzy Bayesian approach to flood frequency estimation with imprecise historical information  
(doi 10.1002/2016WR019177)
- 6751** *S. Culley, S. Noble, A. Yates, M. Timbs, S. Westra, H. R. Maier, M. Giuliani, and A. Castelletti*  
A bottom-up approach to identifying the maximum operational adaptive capacity of water resource systems to a changing climate (doi 10.1002/2015WR018253)
- 6769** *A. Soueid Ahmed, A. Jardani, A. Revil, and J. P. Dupont*  
Joint inversion of hydraulic head and self-potential data associated with harmonic pumping tests  
(doi 10.1002/2016WR019058)
- 6792** *Don B. Fox, Donald L. Koch, and Jefferson W. Tester*  
An analytical thermohydraulic model for discretely fractured geothermal reservoirs (doi 10.1002/2016WR018666)
- 6818** *Mariaines Di Dato, Felipe P. J. de Barros, Aldo Fiori, and Alberto Bellin*  
Effects of the hydraulic conductivity microstructure on macrodispersivity (doi 10.1002/2016WR019086)
- 6833** *Tom Bultreys, Luc Van Hoorebeke, and Veerle Cnudde*  
Simulating secondary waterflooding in heterogeneous rocks with variable wettability using an image-based, multiscale pore network model (doi 10.1002/2016WR018950)
- 6851** *Jonathan Reeves and Christine E. Hatch*  
Impacts of three-dimensional nonuniform flow on quantification of groundwater-surface water interactions using heat as a tracer (doi 10.1002/2016WR018841)
- 6867** *Alina R. Tyukhova and Matthias Willmann*  
Conservative transport upscaling based on information of connectivity (doi 10.1002/2015WR018331)
- 6881** *Scott C. Kronholm and Paul D. Capel*  
Estimation of time-variable fast flow path chemical concentrations for application in tracer-based hydrograph separation analyses (doi 10.1002/2016WR018797)
- 6897** *G. H. Steinbakk, T. L. Thorarinsdottir, T. Reitan, L. Schlichting, S. Hølleland, and K. Engeland*  
Propagation of rating curve uncertainty in design flood estimation (doi 10.1002/2015WR018516)
- 6916** *Xu Zhao, Junguo Liu, Hong Yang, Rosa Duarte, Martin R Tillotson, and Klaus Hubacek*  
Burden shifting of water quantity and quality stress from megacity Shanghai (doi 10.1002/2016WR018595)
- 6928** *M. Giuliani, Y. Li, A. Castelletti, and C. Gandolfi*  
A coupled human-natural systems analysis of irrigated agriculture under changing climate  
(doi 10.1002/2016WR019363)
- 6948** *Youzuo Lin, Daniel O'Malley, and Velimir V. Vesselinov*  
A computationally efficient parallel Levenberg-Marquardt algorithm for highly parameterized inverse model analyses (doi 10.1002/2016WR019028)
- 6978** *O. D. L. Strack, L. Stoeckl, K. Damm, G. Houben, B. K. Ausk, and W. J. de Lange*  
Reduction of saltwater intrusion by modifying hydraulic conductivity (doi 10.1002/2016WR019037)
- 6989** *Chunhui Lu, Pei Xin, Jun Kong, Ling Li, and Jian Luo*  
Analytical solutions of seawater intrusion in sloping confined and unconfined coastal aquifers  
(doi 10.1002/2016WR019101)
- 7005** *Clara Orrú, Astrid Blom, Victor Chavarrías, Velia Ferrara, and Guglielmo Stecca*  
A new technique for measuring the bed surface texture during flow and application to a degradational sand-gravel laboratory experiment (doi 10.1002/2016WR018938)
- 7023** *Mouadh Addassi, Lynn Schreyer, Björn Johannesson, and Hai Lin*  
Pore-scale modeling of vapor transport in partially saturated capillary tube with variable area using chemical potential (doi 10.1002/2016WR019165)
- 7036** *M. S. Bartlett, A. J. Parolari, J. J. McDonnell, and A. Porporato*  
Framework for event-based semidistributed modeling that unifies the SCS-CN method, VIC, PDM, and TOPMODEL (doi 10.1002/2016WR019084)
- 7053** *Amin Elshorbagy, Thorsten Wagener, Saman Razavi, and David Sauchyn*  
Correlation and causation in tree-ring-based reconstruction of paleohydrology in cold semiarid regions  
(doi 10.1002/2016WR018985)

- 7070** Omar Alminagorta, David E. Rosenberg, and Karin M. Kettenring  
Systems modeling to improve the hydro-ecological performance of diked wetlands (doi 10.1002/2015WR018105)
- 7086** M. Hofstätter, B. Chimani, A. Lexer, and G. Blöschl  
A new classification scheme of European cyclone tracks with relevance to precipitation (doi 10.1002/2016WR019146)
- 7105** Minseok Kim, Luke A. Pangle, Charlene Cardoso, Marco Lora, Till H. M. Volkmann, Yadi Wang, Ciaran J. Harman, and Peter A. Troch  
Transit time distributions and StorAge Selection functions in a sloping soil lysimeter with time-varying flow paths: Direct observation of internal and external transport variability (doi 10.1002/2016WR018620)
- 7130** C. J. Harman, A. S. Ward, and A. Ball  
How does reach-scale stream-hyporheic transport vary with discharge? Insights from rSAS analysis of sequential tracer injections in a headwater mountain stream (doi 10.1002/2016WR018832)
- 7151** Ido Sirota, Ali Arnon, and Nadav G. Lensky  
Seasonal variations of halite saturation in the Dead Sea (doi 10.1002/2016WR018974)
- 7163** Sha Zhou, Bofu Yu, Lu Zhang, Yuefei Huang, Ming Pan, and Guangqian Wang  
A new method to partition climate and catchment effect on the mean annual runoff based on the Budyko complementary relationship (doi 10.1002/2016WR019046)
- 7178** María Pool, Marco Dentz, and Vincent E. A. Post  
Transient forcing effects on mixing of two fluids for a stable stratification (doi 10.1002/2016WR019181)
- 7198** J. P. Pereira Nunes, B. Bijeljic, and M. J. Blunt  
Pore-space structure and average dissolution rates: A simulation study (doi 10.1002/2016WR019313)
- 7213** Randal D. Koster, Luca Brocca, Wade T. Crow, Mariko S. Burgin, and Gabrielle J. M. De Lannoy  
Precipitation estimation using L-band and C-band soil moisture retrievals (doi 10.1002/2016WR019024)
- 7226** Hitoshi Miyamoto and Ryo Kimura  
Tree population dynamics on a floodplain: A tradeoff between tree mortality and seedling recruitment induced by stochastic floods (doi 10.1002/2015WR018528)
- 7244** Jeffrey Kennedy, Ty P. A. Ferré, and Benjamin Creutzfeldt  
Time-lapse gravity data for monitoring and modeling artificial recharge through a thick unsaturated zone (doi 10.1002/2016WR018770)
- 7262** Thomas Hermans, Erasmus Oware, and Jef Caers  
Direct prediction of spatially and temporally varying physical properties from time-lapse electrical resistance data (doi 10.1002/2016WR019126)
- 7284** Hasan A. Nooruddin and Martin J. Blunt  
Analytical and numerical investigations of spontaneous imbibition in porous media (doi 10.1002/2015WR018451)
- 7311** Trent W. Biggs, Michael Marshall, and Alex Messina  
Mapping daily and seasonal evapotranspiration from irrigated crops using global climate grids and satellite imagery: Automation and methods comparison (doi 10.1002/2016WR019107)
- 7327** Harrison B. Zeff, Jonathan D. Herman, Patrick M. Reed, and Gregory W. Characklis  
Cooperative drought adaptation: Integrating infrastructure development, conservation, and water transfers into adaptive policy pathways (doi 10.1002/2016WR018771)
- 7347** Hassan Rouhani and Robert Leconte  
A novel method to estimate the maximization ratio of the Probable Maximum Precipitation (PMP) using regional climate model output (doi 10.1002/2016WR018603)
- 7366** Zhenyang Peng, Fuqiang Tian, Jingwei Wu, Jiesheng Huang, Hongchang Hu, and Christophe J. G. Darnault  
A numerical model for water and heat transport in freezing soils with nonequilibrium ice-water interfaces\* (doi 10.1002/2016WR019116)  
\*This article is part of a Special Section—The Arctic: An AGU Joint Special Collection
- 7382** Marwan Fahs, Behzad Ataie-Ashtiani, Anis Younes, Craig T. Simmons, and Philippe Ackerer  
The Henry problem: New semianalytical solution for velocity-dependent dispersion (doi 10.1002/2016WR019288)
- 7408** Maura C. Allaire  
Disaster loss and social media: Can online information increase flood resilience? (doi 10.1002/2016WR019243)
- 7424** V. Mansanarez, J. Le Coz, B. Renard, M. Lang, G. Pierrefeu, and P. Vauchel  
Bayesian analysis of stage-fall-discharge rating curves and their uncertainties (doi 10.1002/2016WR018916)
- 7444** Allen G. Hunt and Behzad Ghanbarian  
Percolation theory for solute transport in porous media: Geochemistry, geomorphology, and carbon cycling\* (doi 10.1002/2016WR019289)  
\*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

- 7460** *A. Fox, G. Laube, C. Schmidt, J. H. Fleckenstein, and S. Arnon*  
The effect of losing and gaining flow conditions on hyporheic exchange in heterogeneous streambeds (doi 10.1002/2016WR018677)

### **Technical Reports: Data**

- 7478** *Jessica D. Lundquist, James W. Roche, Harrison Forrester, Courtney Moore, Eric Keenan, Gwyneth Perry, Nicoleta Cristea, Brian Henn, Karl Lapo, Bruce McGurk, Daniel R. Cayan, and Michael D. Dettinger*  
Yosemite Hydroclimate Network: Distributed stream and atmospheric data for the Tuolumne River watershed and surroundings (doi 10.1002/2016WR019261)
- 7490** *David N. Wiese, Felix W. Landerer, and Michael M. Watkins*  
Quantifying and reducing leakage errors in the JPL RL05M GRACE mascon solution (doi 10.1002/2016WR019344)

### **Technical Reports: Methods**

- 7503** *Jianshi Zhao, Dingbao Wang, Hanbo Yang, and Murugesu Sivapalan*  
Unifying catchment water balance models for different time scales through the maximum entropy production principle (doi 10.1002/2016WR018977)
- 7513** *Noah P. Molotch, David M. Barnard, Sean P. Burns, and Thomas H. Painter*  
Measuring spatiotemporal variation in snow optical grain size under a subalpine forest canopy using contact spectroscopy (doi 10.1002/2016WR018954)

### **Comments and Replies**

- 7523** *Patrick Belmont, John R. Stevens, Jonathan A. Czuba, Karthik Kumarasamy, and Sara A. Kelly*  
Comment on "Climate and agricultural land use change impacts on streamflow in the upper midwestern United States" by Satish C. Gupta et al. (doi 10.1002/2015WR018476)
- 7529** *Satish C. Gupta, Andrew C. Kessler, Melinda K. Brown, and William M. Schuh*  
Reply to comment by Belmont et al. on "Climate and agricultural land use change impacts on streamflow in the upper midwestern United States" (doi 10.1002/2016WR018926)
- 7536** *Efi Foufoula-Georgiou, Patrick Belmont, Peter Wilcock, Karen Gran, Jacques C. Finlay, Praveen Kumar, Jonathan A. Czuba, Jon Schwenk, and Zeinab Takbiri*  
Comment on "Climate and agricultural land use change impacts on streamflow in the upper midwestern United States" by Satish C. Gupta et al. (doi 10.1002/2015WR018494)
- 7540** *Satish C. Gupta, Andrew C. Kessler, Melinda K. Brown, and William M. Schuh*  
Reply to comment by Foufoula-Georgiou et al. on "Climate and agricultural land use change impacts on streamflow in the upper midwestern United States" (doi 10.1002/2016WR019003)