

**Research Articles**

- 3769** *Priyam Das, Jason Patskoski, and A. Sankarasubramanian*  
Modeling the Irrigation Withdrawals Over the Coterminous US Using a Hierarchical Modeling Approach (<https://doi.org/10.1029/2017WR021723>)
- 3788** *Drew Thayer, Andrew D. Parsekian, Kevin Hyde, Heather Speckman, Dan Beverly, Brent Ewers, Matt Covalt, Nadia Fantello, Thijs Kelleners, Noriaki Ohara, Trent Rogers, and W. Steven Holbrook*  
Geophysical Measurements to Determine the Hydrologic Partitioning of Snowmelt on a Snow-Dominated Subalpine Hillslope (<https://doi.org/10.1029/2017WR021324>)
- 3809** *David J. Farnham, James Doss-Gollin, and Upmanu Lall*  
Regional Extreme Precipitation Events: Robust Inference From Credibly Simulated GCM Variables (<https://doi.org/10.1002/2017WR021318>)
- 3825** *Serghei A. Bocaniov and Donald Scavia*  
Nutrient Loss Rates in Relation to Transport Time Scales in a Large Shallow Lake (Lake St. Clair, USA—Canada): Insights From a Three-Dimensional Model (<https://doi.org/10.1029/2017WR021876>)
- 3841** *Vasileios E. Katzourakis and Constantinos V. Chrysikopoulos*  
Impact of Spatially Variable Collision Efficiency on the Transport of Biocolloids in Geochemically Heterogeneous Porous Media (<https://doi.org/10.1029/2017WR021996>)
- 3863** *M. D. Pollock, G. O'Donnell, P. Quinn, M. Dutton, A. Black, M. E. Wilkinson, M. Colli, M. Stagnaro, L. G. Lanza, E. Lewis, C. G. Kilsby, and P. E. O'Connell*  
Quantifying and Mitigating Wind-Induced Undercatch in Rainfall Measurements (<https://doi.org/10.1029/2017WR022421>)
- 3876** *Mina Bergstad, Dani Or, Philip J. Withers, and Nima Shokri*  
Evaporation Dynamics and NaCl Precipitation on Capillarity-Coupled Heterogeneous Porous Surfaces (<https://doi.org/10.1029/2018WR022614>)
- 3886** *Xing Yuan, Yang Jiao, Dawen Yang, and Huimin Lei*  
Reconciling the Attribution of Changes in Streamflow Extremes From a Hydroclimate Perspective (<https://doi.org/10.1029/2018WR022714>)
- 3896** *J. L. J. Ledesma, D. N. Kothawala, P. Bastviken, S. Maehder, T. Grabs, and M. N. Futter*  
Stream Dissolved Organic Matter Composition Reflects the Riparian Zone, Not Upslope Soils in Boreal Forest Headwaters (<https://doi.org/10.1029/2017WR021793>)
- 3913** *Sudershan Gangrade, Shih-Chieh Kao, Bibi S. Naz, Deeksha Rastogi, Moetasim Ashfaq, Nagendra Singh, and Benjamin L. Preston*  
Sensitivity of Probable Maximum Flood in a Changing Environment (<https://doi.org/10.1029/2017WR021987>)
- 3937** *C. P. Gabrielli, U. Morgenstern, M. K. Stewart, and J. J. McDonnell*  
Contrasting Groundwater and Streamflow Ages at the Maimai Watershed (<https://doi.org/10.1029/2017WR021825>)
- 3958** *Fabrizio Fenicia, Dmitri Kavetski, Peter Reichert, and Carlo Albert*  
Signature-Domain Calibration of Hydrological Models Using Approximate Bayesian Computation: Empirical Analysis of Fundamental Properties (<https://doi.org/10.1002/2017WR021616>)
- 3988** *Nicolas B. Rodriguez, Kevin J. McGuire, and Julian Klaus*  
Time-Varying Storage–Water Age Relationships in a Catchment With a Mediterranean Climate (<https://doi.org/10.1029/2017WR021964>)
- 4009** *Esther Lee, Praveen Kumar, Greg A. Barron-Gafford, Sean M. Hendryx, Enrique P. Sanchez-Cañete, Rebecca L. Minor, Tony Colella, and Russell L. Scott*  
Impact of Hydraulic Redistribution on Multispecies Vegetation Water Use in a Semiarid Savanna Ecosystem: An Experimental and Modeling Synthesis (<https://doi.org/10.1029/2017WR021006>)
- 4028** *Vitaly Zlotnik and Daniel M. Tartakovsky*  
Interpretation of Heat-Pulse Tracer Tests for Characterization of Three-Dimensional Velocity Fields in Hyporheic Zone (<https://doi.org/10.1029/2017WR022476>)

- 4040** *Scott D. Hamshaw, Mandar M. Dewoolkar, Andrew W. Schroth, Beverley C. Wemple, and Donna M. Rizzo*  
A New Machine-Learning Approach for Classifying Hysteresis in Suspended-Sediment Discharge Relationships Using High-Frequency Monitoring Data (<https://doi.org/10.1029/2017WR022238>)
- 4059** *Dmitri Kavetski, Fabrizio Fenicia, Peter Reichert, and Carlo Albert*  
Signature-Domain Calibration of Hydrological Models Using Approximate Bayesian Computation: Theory and Comparison to Existing Applications (<https://doi.org/10.1002/2017WR020528>)
- 4084** *Kara R. Scheu, Derek Fong, Stephen G. Monismith, and Oliver B. Fringer*  
Modeling Sedimentation Dynamics of Sediment-Laden River Intrusions in a Rotationally-Influenced, Stratified Lake (<https://doi.org/10.1029/2017WR021533>)
- 4108** *Lionel Benoit, Denis Allard, and Gregoire Mariethoz*  
Stochastic Rainfall Modeling at Sub-kilometer Scale (<https://doi.org/10.1029/2018WR022817>)
- 4131** *Xiaobing Chen, M. Bayani Cardenas, and Li Chen*  
Hyporheic Exchange Driven by Three-Dimensional Sandy Bed Forms: Sensitivity to and Prediction from Bed Form Geometry (<https://doi.org/10.1029/2018WR022663>)
- 4150** *Fei Jiang, Takeshi Tsuji, and Tomoyuki Shirai*  
Pore Geometry Characterization by Persistent Homology Theory (<https://doi.org/10.1029/2017WR021864>)
- 4164** *Guillaume Piton, Alain Recking, Jérôme Le Coz, Hervé Bellot, Alexandre Hauet, and Magali Jodeau*  
Reconstructing Depth-Averaged Open-Channel Flows Using Image Velocimetry and Photogrammetry (<https://doi.org/10.1029/2017WR021314>)
- 4180** *Zhaoyong Hu, Genxu Wang, Xiangyang Sun, Meizhuang Zhu, Chunlin Song, Kewei Huang, and Xiaopeng Chen*  
Spatial-Temporal Patterns of Evapotranspiration Along an Elevation Gradient on Mount Gongga, Southwest China (<https://doi.org/10.1029/2018WR022645>)
- 4193** *Thomas Sweijen, S. Majid Hassanizadeh, Bruno Chareyre, and Luwen Zhuang*  
Dynamic Pore-Scale Model of Drainage in Granular Porous Media: The Pore-Unit Assembly Method (<https://doi.org/10.1029/2017WR021769>)