

Regular Articles

- W10501** *Wei-Chen Cheng, Nien-Sheng Hsu, Wen-Ming Cheng, and William W.-G. Yeh*
Optimization of European call options considering physical delivery network and reservoir operation rules
(doi 10.1029/2011WR010423)
- W10502** *Julie Carreau and Mathieu Vrac*
Stochastic downscaling of precipitation with neural network conditional mixture models
(doi 10.1029/2010WR010128)
- W10503** *Scott A. Bradford, Saeed Torkzaban, and Jiri Simunek*
Modeling colloid transport and retention in saturated porous media under unfavorable attachment conditions
(doi 10.1029/2011WR010812)
- W10504** *Abdullah Cihan, Quanlin Zhou, and Jens T. Birkholzer*
Analytical solutions for pressure perturbation and fluid leakage through aquitards and wells in multilayered-aquifer systems (doi 10.1029/2011WR010721)
- W10505** *S. Bottero, S. M. Hassanizadeh, P. J. Kleingeld, and T. J. Heimovaara*
Nonequilibrium capillarity effects in two-phase flow through porous media at different scales
(doi 10.1029/2011WR010887)
- W10506** *Maurizio Savina, Peter Molnar, and Paolo Burlando*
Seasonal long-term persistence in radar precipitation in complex terrain (doi 10.1029/2010WR010170)
- W10507** *Steven J. Berg and Walter A. Illman*
Three-dimensional transient hydraulic tomography in a highly heterogeneous glaciofluvial aquifer-aquitard system
(doi 10.1029/2011WR010616)
- W10508** *M. C. Westhoff, M. N. Gooseff, T. A. Bogaard, and H. H. G. Savenije*
Quantifying hyporheic exchange at high spatial resolution using natural temperature variations along a first-order stream (doi 10.1029/2010WR009767)
- W10509** *Yoon Lee, Taeyeon Yoon, and Farhed A. Shah*
Economics of integrated watershed management in the presence of a dam (doi 10.1029/2010WR009172)
- W10510** *Olli-Pekka Tossavainen, Julie Percelay, Mark Stacey, Jari P. Kaipio, and Alexandre Bayen*
State estimation and modeling error approach for 2-D shallow water equations and Lagrangian measurements
(doi 10.1029/2010WR009401)
- W10511** *Su Jin Kim and Thorsten Stoesser*
Closure modeling and direct simulation of vegetation drag in flow through emergent vegetation
(doi 10.1029/2011WR010561)
- W10512** *Marie Scholer, James Irving, Andrew Binley, and Klaus Holliger*
Estimating vadose zone hydraulic properties using ground penetrating radar: The impact of prior information
(doi 10.1029/2011WR010409)
- W10513** *Yanai Amiaz, Shaul Sorek, Yehouda Enzel, and Ofer Dahan*
Solute transport in the vadose zone and groundwater during flash floods (doi 10.1029/2011WR010747)
- W10514** *M. D. Covington, A. J. Luhmann, F. Gabrovšek, M. O. Saar, and C. M. Wicks*
Mechanisms of heat exchange between water and rock in karst conduits (doi 10.1029/2011WR010683)

- W10515** *Mashor Housh, Avi Ostfeld, and Uri Shamir*
Optimal multiyear management of a water supply system under uncertainty: Robust counterpart approach (doi 10.1029/2011WR010596)
- W10516** *J. D. Shucksmith, J. B. Boxall, and I. Guymer*
Determining longitudinal dispersion coefficients for submerged vegetated flow (doi 10.1029/2011WR010547)
- W10517** *N. Rivière, G. Travin, and R. J. Perkins*
Subcritical open channel flows in four branch intersections (doi 10.1029/2011WR010504)
- W10518** *K. Papapetridis and E. K. Paleologos*
Contaminant detection probability in heterogeneous aquifers and corrected risk analysis for remedial response delay (doi 10.1029/2011WR010652)
- W10519** *Elizabeth Major, David A. Benson, Jordan Revielle, Hamed Ibrahim, Arianne Dean, Reed M. Maxwell, Eileen Poeter, and Mine Dogan*
Comparison of Fickian and temporally nonlocal transport theories over many scales in an exhaustively sampled sandstone slab (doi 10.1029/2011WR010857)
- W10520** *G. Bürger, J. Schulla, and A. T. Werner*
Estimates of future flow, including extremes, of the Columbia River headwaters (doi 10.1029/2010WR009716)
- W10521** *T. Cui, C. Fox, and M. J. O'Sullivan*
Bayesian calibration of a large-scale geothermal reservoir model by a new adaptive delayed acceptance Metropolis Hastings algorithm (doi 10.1029/2010WR010352)
- W10522** *K. Mosthaf, K. Baber, B. Flemisch, R. Helmig, A. Leijnse, I. Rybak, and B. Wohlmuth*
A coupling concept for two-phase compositional porous-medium and single-phase compositional free flow (doi 10.1029/2011WR010685)
- W10523** *Arash Massoudieh and Timothy R. Ginn*
The theoretical relation between unstable solutes and groundwater age (doi 10.1029/2010WR010039)
- W10524** *S. Simoni, S. Padoan, D. F. Nadeau, M. Diebold, A. Porporato, G. Barrenetxea, F. Ingelrest, M. Vetterli, and M. B. Parlange*
Hydrologic response of an alpine watershed: Application of a meteorological wireless sensor network to understand streamflow generation (doi 10.1029/2011WR010730)
- W10525** *Vanessa Nenna, Adam Pidlisecky, and Rosemary Knight*
Application of an extended Kalman filter approach to inversion of time-lapse electrical resistivity imaging data for monitoring recharge (doi 10.1029/2010WR010120)
- W10526** *M. Bechtold, J. Vanderborght, O. Ippisch, and H. Vereecken*
Efficient random walk particle tracking algorithm for advective-dispersive transport in media with discontinuous dispersion coefficients and water contents (doi 10.1029/2010WR010267)
- W10527** *H. A. Basha*
Infiltration models for soil profiles bounded by a water table (doi 10.1029/2011WR010872)
- W10528** *V. I. Heiß, I. Neuweiler, S. Ochs, and A. Färber*
Experimental investigation on front morphology for two-phase flow in heterogeneous porous media (doi 10.1029/2011WR010612)
- W10529** *Yijian Zeng, Zhongbo Su, Li Wan, and Jun Wen*
A simulation analysis of the advective effect on evaporation using a two-phase heat and mass flow model (doi 10.1029/2011WR010701)

W10530 *Shao-Yang Huang, Jet-Chau Wen, Tian-Chyi J. Yeh, Wenxi Lu, Hsiang-Lan Juan, Chung-Min Tseng, Ju-Huang Lee, and Kuo-Chyang Chang*

Robustness of joint interpretation of sequential pumping tests: Numerical and field experiments
(doi 10.1029/2011WR010698)

W10531 *Michael B. Hay, Deborah L. Stoliker, James A. Davis, and John M. Zachara*

Characterization of the intragranular water regime within subsurface sediments: Pore volume, surface area, and mass transfer limitations (doi 10.1029/2010WR010303)

Technical Notes

W10601 *Hoshin Vijai Gupta and Harald Kling*

On typical range, sensitivity, and normalization of Mean Squared Error and Nash-Sutcliffe Efficiency type metrics
(doi 10.1029/2011WR010962)

Special Section: Approaches to Synthesis: Watersheds as Dynamic, Cascading, Hierarchical, Non-linear Space-Time Filters

Overview of Special Section

W00J01 *M. Sivapalan, S. E. Thompson, C. J. Harman, N. B. Basu, and P. Kumar*

Water cycle dynamics in a changing environment: Improving predictability through synthesis
(doi 10.1029/2011WR011377)

W00J03 *Sally E. Thompson, Ciaran J. Harman, Peter A. Troch, Paul D. Brooks, and Murugesu Sivapalan*

Spatial scale dependence of ecohydrologically mediated water balance partitioning: A synthesis framework for catchment ecohydrology (doi 10.1029/2010WR009998)

W00J15 *Nandita B. Basu, Sally E. Thompson, and P. Suresh C. Rao*

Hydrologic and biogeochemical functioning of intensively managed catchments: A synthesis of top-down analyses
(doi 10.1029/2011WR010800)

Water Balance at Catchment Scale and Role of Vegetation: Catchment Ecohydrology

W00J12 *Dingbao Wang and Mohamad Hejazi*

Quantifying the relative contribution of the climate and direct human impacts on mean annual streamflow in the contiguous United States (doi 10.1029/2010WR010283)

W00J09 *Hal Voepel, Benjamin Ruddell, Rina Schumer, Peter A. Troch, Paul D. Brooks, Andrew Neal, Matej Durcik, and Murugesu Sivapalan*

Quantifying the role of climate and landscape characteristics on hydrologic partitioning and vegetation response
(doi 10.1029/2010WR009944)

W00J08 *Paul D. Brooks, Peter A. Troch, Matej Durcik, Erika Gallo, and Melissa Schlegel*

Quantifying regional scale ecosystem response to changes in precipitation: Not all rain is created equal
(doi 10.1029/2010WR009762)

W00J07 *S. E. Thompson, C. J. Harman, A. G. Konings, M. Sivapalan, A. Neal, and P. A. Troch*

Comparative hydrology across AmeriFlux sites: The variable roles of climate, vegetation, and groundwater
(doi 10.1029/2010WR009797)

W00J11 *Christopher S. Lowry, Steven P. Loheide II, Courtney E. Moore, and Jessica D. Lundquist*

Groundwater controls on vegetation composition and patterning in mountain meadows (doi 10.1029/2010WR010086)

Hydrologic and Biogeochemical Filtering of Reactive Solutes: Catchment Biogeochemistry

W00J06 *Nandita B. Basu, P. Suresh C. Rao, Sally E. Thompson, Natalia V. Loukinova, Simon D. Donner, Sheng Ye, and Murugesu Sivapalan*

Spatiotemporal averaging of in-stream solute removal dynamics (doi 10.1029/2010WR010196)

- W00J02** *K. Guan, S. E. Thompson, C. J. Harman, N. B. Basu, P. S. C. Rao, M. Sivapalan, A. I. Packman, and P. K. Kalita*
Spatiotemporal scaling of hydrological and agrochemical export dynamics in a tile-drained Midwestern watershed
(doi 10.1029/2010WR009997)
- W00J05** *S. E. Thompson, N. B. Basu, J. Lascurain Jr., A. Aubeneau, and P. S. C. Rao*
Relative dominance of hydrologic versus biogeochemical factors on solute export across impact gradients
(doi 10.1029/2010WR009605)
- W00J13** *C. J. Harman, P. S. C. Rao, N. B. Basu, G. S. McGrath, P. Kumar, and M. Sivapalan*
Climate, soil, and vegetation controls on the temporal variability of vadose zone transport
(doi 10.1029/2010WR010194)
- W00J10** *Robert J. Stewart, Wilfred M. Wollheim, Michael N. Gooseff, Martin A. Briggs, Jennifer M. Jacobs, Bruce J. Peterson, and Charles S. Hopkinson*
Separation of river network-scale nitrogen removal among the main channel and two transient storage compartments
(doi 10.1029/2010WR009896)
- W00J14** *James W. Jawitz and Jennifer Mitchell*
Temporal inequality in catchment discharge and solute export (doi 10.1029/2010WR010197)
- W00J04** *Diego A. Riveros-Iregui, Brian L. McGlynn, Lucy A. Marshall, Daniel L. Welsch, Ryan E. Emanuel, and Howard E. Epstein*
A watershed-scale assessment of a process soil CO₂ production and efflux model (doi 10.1029/2010WR009941)

The following articles, which printed February (Vol. 47, No. 2), and September (Vol. 47, No. 9) 2011, respectively, are part of this special section. The articles can be viewed online.

- W02522** *Murugesu Sivapalan, Mary A. Yaeger, Ciaran J. Harman, Xiangyu Xu, and Peter A. Troch*
Functional model of water balance variability at the catchment scale: 1. Evidence of hydrologic similarity and space-time symmetry (doi 10.1029/2010WR009568)
- W02523** *C. J. Harman, P. A. Troch, and M. Sivapalan*
Functional model of water balance variability at the catchment scale: 2. Elasticity of fast and slow runoff components to precipitation change in the continental United States (doi 10.1029/2010WR009656)
- W09509** *Lei Cheng, Zongxue Xu, Dingbao Wang, and Ximing Cai*
Assessing interannual variability of evapotranspiration at the catchment scale using satellite-based evapotranspiration data sets (doi 10.1029/2011WR010636)

Special Section in Progress

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