Dmitri Kavetski

List of Publications by Year
in descending order

78 papers	6,970 citations	71102 41 h-index	71685 76 g-index
93 all docs	93 docs citations	93 times ranked	5070 citing authors

#	Article	IF	Citations
1	Understanding predictive uncertainty in hydrologic modeling: The challenge of identifying input and structural errors. Water Resources Research, 2010, 46, .	4.2	589
2	Pursuing the method of multiple working hypotheses for hydrological modeling. Water Resources Research, 2011, 47, .	4.2	414
3	A unified approach for process‐based hydrologic modeling: 1. Modeling concept. Water Resources Research, 2015, 51, 2498-2514.	4.2	354
4	Bayesian analysis of input uncertainty in hydrological modeling: 1. Theory. Water Resources Research, 2006, 42, .	4.2	318
5	Critical evaluation of parameter consistency and predictive uncertainty in hydrological modeling: A case study using Bayesian total error analysis. Water Resources Research, 2009, 45, .	4.2	293
6	Towards a Bayesian total error analysis of conceptual rainfall-runoff models: Characterising model error using storm-dependent parameters. Journal of Hydrology, 2006, 331, 161-177.	5.4	283
7	Representing spatial variability of snow water equivalent in hydrologic and land‐surface models: A review. Water Resources Research, 2011, 47, .	4.2	275
8	Elements of a flexible approach for conceptual hydrological modeling: 1. Motivation and theoretical development. Water Resources Research, 2011, 47, .	4.2	269
9	Rainfall uncertainty in hydrological modelling: An evaluation of multiplicative error models. Journal of Hydrology, 2011, 400, 83-94.	5.4	195
10	Bayesian analysis of input uncertainty in hydrological modeling: 2. Application. Water Resources Research, 2006, 42, .	4.2	193
11	Model for CO_2 Leakage Including Multiple Geological Layers and Multiple Leaky Wells. Environmental Science & Technology, 2009, 43, 743-749.	10.0	188
12	A unified approach for process‐based hydrologic modeling: 2. Model implementation and case studies. Water Resources Research, 2015, 51, 2515-2542.	4.2	173
13	Toward a reliable decomposition of predictive uncertainty in hydrological modeling: Characterizing rainfall errors using conditional simulation. Water Resources Research, 2011, 47, .	4.2	172
14	Development of a Hybrid Process and System Model for the Assessment of Wellbore Leakage at a Geologic CO_2 Sequestration Site. Environmental Science & Technology, 2008, 42, 7280-7286.	10.0	137
15	Catchment properties, function, and conceptual model representation: is there a correspondence?. Hydrological Processes, 2014, 28, 2451-2467.	2.6	135
16	A strategy for diagnosing and interpreting hydrological model nonstationarity. Water Resources Research, 2014, 50, 5090-5113.	4.2	134
17	Comparison of joint versus postprocessor approaches for hydrological uncertainty estimation accounting for error autocorrelation and heteroscedasticity. Water Resources Research, 2014, 50, 2350-2375.	4.2	130
18	Ancient numerical daemons of conceptual hydrological modeling: 2. Impact of time stepping schemes on model analysis and prediction. Water Resources Research, 2010, 46, .	4.2	128

#	Article	IF	Citations
19	Challenges of Operational River Forecasting. Journal of Hydrometeorology, 2014, 15, 1692-1707.	1.9	127
20	Confronting input uncertainty in environmental modelling. Water Science and Application, 2003, , 49-68.	0.3	126
21	Ancient numerical daemons of conceptual hydrological modeling: 1. Fidelity and efficiency of time stepping schemes. Water Resources Research, 2010, 46, .	4.2	121
22	Probabilistic Flood Mapping Using Synthetic Aperture Radar Data. IEEE Transactions on Geoscience and Remote Sensing, 2016, 54, 6958-6969.	6.3	104
23	Hydrological field data from a modeller's perspective: Part 2: process€based evaluation of model hypotheses. Hydrological Processes, 2011, 25, 523-543.	2.6	103
24	Calibration of conceptual hydrological models revisited: 1. Overcoming numerical artefacts. Journal of Hydrology, 2006, 320, 173-186.	5.4	101
25	Improving probabilistic prediction of daily streamflow by identifying <scp>P</scp>areto optimal approaches for modeling heteroscedastic residual errors. Water Resources Research, 2017, 53, 2199-2239.	4.2	101
26	Elements of a flexible approach for conceptual hydrological modeling: 2. Application and experimental insights. Water Resources Research, 2011, 47, .	4.2	97
27	Pitfalls and improvements in the joint inference of heteroscedasticity and autocorrelation in hydrological model calibration. Water Resources Research, 2013, 49, 4518-4524.	4.2	96
28	Model smoothing strategies to remove microscale discontinuities and spurious secondary optima in objective functions in hydrological calibration. Water Resources Research, 2007, 43, .	4.2	86
29	Impact of temporal data resolution on parameter inference and model identification in conceptual hydrological modeling: Insights from an experimental catchment. Water Resources Research, 2011, 47, .	4.2	84
30	Near€Real€Time Assimilation of SAR€Derived Flood Maps for Improving Flood Forecasts. Water Resources Research, 2018, 54, 5516-5535.	4.2	84
31	Assessing the impact of mixing assumptions on the estimation of streamwater mean residence time. Hydrological Processes, 2010, 24, 1730-1741.	2.6	83
32	Adaptive backward Euler time stepping with truncation error control for numerical modelling of unsaturated fluid flow. International Journal for Numerical Methods in Engineering, 2002, 53, 1301-1322.	2.8	79
33	From spatially variable streamflow to distributed hydrological models: Analysis of key modeling decisions. Water Resources Research, 2016, 52, 954-989.	4.2	78
34	Towards more systematic perceptual model development: a case study using 3 Luxembourgish catchments. Hydrological Processes, 2015, 29, 2731-2750.	2.6	75
35	There are no hydrological monsters, just models and observations with large uncertainties!. Hydrological Sciences Journal, 2010, 55, 980-991.	2.6	68
36	Numerical troubles in conceptual hydrology: Approximations, absurdities and impact on hypothesis testing. Hydrological Processes, 2011, 25, 661-670.	2.6	59

#	Article	IF	Citations
37	Flow Prediction in Ungauged Catchments Using Probabilistic Random Forests Regionalization and New Statistical Adequacy Tests. Water Resources Research, 2019, 55, 4364-4392.	4.2	57
38	Calibration of conceptual hydrological models revisited: 2. Improving optimisation and analysis. Journal of Hydrology, 2006, 320, 187-201.	5.4	55
39	Noniterative time stepping schemes with adaptive truncation error control for the solution of Richards equation. Water Resources Research, 2002, 38, 29-1-29-10.	4.2	54
40	Semidistributed hydrological modeling: A â€œsaturation pathâ€•perspective on TOPMODEL and VIC. Water Resources Research, 2003, 39, .	4.2	53
41	Practical Use of Computationally Frugal Model Analysis Methods. Ground Water, 2016, 54, 159-170.	1.3	47
42	Estimating mountain basinâ€mean precipitation from streamflow using <scp>B</scp>ayesian inference. Water Resources Research, 2015, 51, 8012-8033.	4.2	44
43	Spatiotemporal patterns of precipitation inferred from streamflow observations across the Sierra Nevada mountain range. Journal of Hydrology, 2018, 556, 993-1012.	5.4	34
44	Evaluating post-processing approaches for monthly and seasonal streamflow forecasts. Hydrology and Earth System Sciences, 2018, 22, 6257-6278.	4.9	34
45	A limitedâ€memory acceleration strategy for MCMC sampling in hierarchical Bayesian calibration of hydrological models. Water Resources Research, 2010, 46, .	4.2	32
46	Signatureâ€Domain Calibration of Hydrological Models Using Approximate Bayesian Computation: Theory and Comparison to Existing Applications. Water Resources Research, 2018, 54, 4059-4083.	4.2	32
47	Signatureâ€Domain Calibration of Hydrological Models Using Approximate Bayesian Computation: Empirical Analysis of Fundamental Properties. Water Resources Research, 2018, 54, 3958-3987.	4.2	32
48	State updating and calibration period selection to improve dynamic monthly streamflow forecasts for an environmental flow management application. Hydrology and Earth System Sciences, 2018, 22, 871-887.	4.9	30
49	On the recent warming in the Murrayâ€Darling Basin: Land surface interactions misunderstood. Geophysical Research Letters, 2009, 36, .	4.0	29
50	Reply to comment by K. Beven et al. on â€œPursuing the method of multiple working hypotheses for hydrological modelingâ€• Water Resources Research, 2012, 48, .	4.2	29
51	Combining snow, streamflow, and precipitation gauge observations to infer basinâ€mean precipitation. Water Resources Research, 2016, 52, 8700-8723.	4.2	26
52	A Robust Gaussâ€Newton Algorithm for the Optimization of Hydrological Models: Benchmarking Against Industryâ€Standard Algorithms. Water Resources Research, 2018, 54, 9637-9654.	4.2	26
53	A simplified approach to produce probabilistic hydrological model predictions. Environmental Modelling and Software, 2018, 109, 306-314.	4.5	25
54	A Robust Gaussâ€Newton Algorithm for the Optimization of Hydrological Models: From Standard Gaussâ€Newton to Robust Gaussâ€Newton. Water Resources Research, 2018, 54, 9655-9683.	4.2	24

#	Article	IF	Citations
55	The Importance of Spatiotemporal Variability in Irrigation Inputs for Hydrological Modeling of Irrigated Catchments. Water Resources Research, 2018, 54, 6792-6821.	4.2	21
56	Multi€temporal Hydrological Residual Error Modeling for Seamless Subseasonal Streamflow Forecasting. Water Resources Research, 2020, 56, e2019WR026979.	4.2	21
57	Comment on â€œAn integrated hydrologic Bayesian multimodel combination framework: Confronting input, parameter, and model structural uncertainty in hydrologic predictionâ€•by Newsha K. Ajami et al.. Water Resources Research, 2009, 45, .	4.2	17
58	A Bayesian analysis of sensible heat flux estimation: Quantifying uncertainty in meteorological forcing to improve model prediction. Water Resources Research, 2013, 49, 2343-2358.	4.2	16
59	The Fast and the Robust: Trade€Offs Between Optimization Robustness and Cost in the Calibration of Environmental Models. Water Resources Research, 2018, 54, 9432-9455.	4.2	15
60	Truncation error and stability analysis of iterative and non-iterative Thomasâ€"Gladwell methods for first-order non-linear differential equations. International Journal for Numerical Methods in Engineering, 2004, 60, 2031-2043.	2.8	14
61	The open source RFortran library for accessing R from Fortran, with applications in environmental modelling. Environmental Modelling and Software, 2011, 26, 219-234.	4.5	14
62	Benefits of Explicit Treatment of Zero Flows in Probabilistic Hydrological Modeling of Ephemeral Catchments. Water Resources Research, 2019, 55, 11035-11060.	4.2	13
63	A robust approach for calibrating a daily rainfall-runoff model to monthly streamflow data. Journal of Hydrology, 2020, 591, 125129.	5.4	12
64	A new stochastic model for simulating daily solar radiation from sunshine hours. International Journal of Climatology, 2015, 35, 1090-1106.	3.5	11
65	Knowledge, transparency, and refutability in groundwater models, an example from the Death Valley regional groundwater flow system. Physics and Chemistry of the Earth, 2013, 64, 105-116.	2.9	10
66	On the role of soil moisture in daytime evolution of temperatures. Hydrological Processes, 2013, 27, 3896-3904.	2.6	10
67	Achieving high-quality probabilistic predictions from hydrological models calibrated with a wide range of objective functions. Journal of Hydrology, 2021, 603, 126578.	5.4	9
68	Parameter Estimation and Predictive Uncertainty Quantification in Hydrological Modelling. , 2018, , 1-42.		9
69	Bayesian spectral likelihood for hydrological parameter inference. Water Resources Research, 2017, 53, 6857-6884.	4.2	8
70	Comparison of Newton-type and SCE optimisation algorithms for the calibration of conceptual hydrological models. Australian Journal of Water Resources, 2016, 20, 169-176.	2.7	7
71	Identification of Dominant Hydrological Mechanisms Using Bayesian Inference, Multiple Statistical Hypothesis Testing, and Flexible Models. Water Resources Research, 2021, 57, e2020WR028338.	4.2	7
72	Improving the Reliability of Sub€Seasonal Forecasts of High and Low Flows by Using a Flow€Dependent Nonparametric Model. Water Resources Research, 2021, 57, e2020WR029317.	4.2	7

#	Article	IF	Citations
73	Behind every robust result is a robust method: Perspectives from a case study and publication process in hydrological modelling. Hydrological Processes, 2021, 35, e14266.	2.6	6
74	SuperflexPy 1.3.0: an open-source Python framework for building, testing, and improving conceptual hydrological models. Geoscientific Model Development, 2021, 14, 7047-7072.	3.6	6
75	An Exploration of Bayesian Identification of Dominant Hydrological Mechanisms in Ungauged Catchments. Water Resources Research, 2022, 58, .	4.2	5
76	Predicting wildfire induced changes to runoff: A review and synthesis of modeling approaches. Wiley Interdisciplinary Reviews: Water, 2022, 9, .	6.5	5
77	Parameter Estimation and Predictive Uncertainty Quantification in Hydrological Modelling. , 2019, , 481-522.		4
78	Reply to the comment of Cai et al. on the paper â€œOn the recent warming in the Murrayâ€Darling Basin: Land surface interactions misunderstoodâ€•by Lockart et al.. Geophysical Research Letters, 2010, 37, .	4.0	2