Chaopeng Shen

List of Publications by Year
in descending order

55 papers	4,335 citations	147566 31 h-index	174990 52 g-index
65 all docs	65 docs citations	65 times ranked	4318 citing authors

#	Article	IF	Citations
1	A Transdisciplinary Review of Deep Learning Research and Its Relevance for Water Resources Scientists. Water Resources Research, 2018, 54, 8558-8593.	1.7	560
2	Improving the representation of hydrologic processes in Earth System Models. Water Resources Research, 2015, 51, 5929-5956.	1.7	366
3	An overview of current applications, challenges, and future trends in distributed process-based models in hydrology. Journal of Hydrology, 2016, 537, 45-60.	2.3	349
4	Hillslope Hydrology in Global Change Research and Earth System Modeling. Water Resources Research, 2019, 55, 1737-1772.	1.7	281
5	An investigation of the effect of pore scale flow on average geochemical reaction rates using direct numerical simulation. Water Resources Research, 2012, 48, .	1.7	238
6	Surfaceâ€subsurface model intercomparison: A first set of benchmark results to diagnose integrated hydrology and feedbacks. Water Resources Research, 2014, 50, 1531-1549.	1.7	222
7	Prolongation of SMAP to Spatiotemporally Seamless Coverage of Continental U.S. Using a Deep Learning Neural Network. Geophysical Research Letters, 2017, 44, 11,030.	1.5	173
8	Enhancing Streamflow Forecast and Extracting Insights Using Longâ€Short Term Memory Networks With Data Integration at Continental Scales. Water Resources Research, 2020, 56, e2019WR026793.	1.7	172
9	HESS Opinions: Incubating deep-learning-powered hydrologic science advances as a community. Hydrology and Earth System Sciences, 2018, 22, 5639-5656.	1.9	169
10	A process-based, distributed hydrologic model based on a large-scale method for surfaceâ€“subsurface coupling. Advances in Water Resources, 2010, 33, 1524-1541.	1.7	156
11	Pore-Scale Controls on Calcite Dissolution Rates from Flow-through Laboratory and Numerical Experiments. Environmental Science & Technology, 2014, 48, 7453-7460.	4.6	154
12	From Hydrometeorology to River Water Quality: Can a Deep Learning Model Predict Dissolved Oxygen at the Continental Scale?. Environmental Science & Technology, 2021, 55, 2357-2368.	4.6	116
13	Evaluating controls on coupled hydrologic and vegetation dynamics in a humid continental climate watershed using a subsurfaceâ€land surface processes model. Water Resources Research, 2013, 49, 2552-2572.	1.7	97
14	The Value of SMAP for Long-Term Soil Moisture Estimation With the Help of Deep Learning. IEEE Transactions on Geoscience and Remote Sensing, 2019, 57, 2221-2233.	2.7	79
15	Near-Real-Time Forecast of Satellite-Based Soil Moisture Using Long Short-Term Memory with an Adaptive Data Integration Kernel. Journal of Hydrometeorology, 2020, 21, 399-413.	0.7	70
16	From calibration to parameter learning: Harnessing the scaling effects of big data in geoscientific modeling. Nature Communications, 2021, 12, 5988.	5.8	68
17	Transferring Hydrologic Data Across Continents â€“ Leveraging Dataâ€Rich Regions to Improve Hydrologic Prediction in Dataâ€Sparse Regions. Water Resources Research, 2021, 57, e2020WR028600.	1.7	56
18	Estimating longitudinal dispersion in rivers using Acoustic Doppler Current Profilers. Advances in Water Resources, 2010, 33, 615-623.	1.7	54

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19	High-Resolution Simulation of Pore-Scale Reactive Transport Processes Associated with Carbon Sequestration. Computing in Science and Engineering, 2014, 16, 22-31.	1.2	51
20	Quantifying storage changes in regional Great Lakes watersheds using a coupled subsurfaceâ€land surface process model and <scp>GRACE</scp>, <scp>MODIS</scp> products. Water Resources Research, 2014, 50, 7359-7377.	1.7	51
21	Evaluating the Potential and Challenges of an Uncertainty Quantification Method for Long Shortâ€Term Memory Models for Soil Moisture Predictions. Water Resources Research, 2020, 56, e2020WR028095.	1.7	49
22	Physics-guided deep learning for rainfall-runoff modeling by considering extreme events and monotonic relationships. Journal of Hydrology, 2021, 603, 127043.	2.3	49
23	Adaptive mesh refinement based on high order finite difference WENO scheme for multi-scale simulations. Journal of Computational Physics, 2011, 230, 3780-3802.	1.9	48
24	Editorial: Broadening the Use of Machine Learning in Hydrology. Frontiers in Water, 2021, 3, .	1.0	44
25	Characterizing coarse-resolution watershed soil moisture heterogeneity using fine-scale simulations. Hydrology and Earth System Sciences, 2014, 18, 2463-2483.	1.9	40
26	Geomorphological significance of atâ€manyâ€stations hydraulic geometry. Geophysical Research Letters, 2016, 43, 3762-3770.	1.5	37
27	Fullâ€flowâ€regime storageâ€streamflow correlation patterns provide insights into hydrologic functioning over the continental <scp>U</scp>S. Water Resources Research, 2017, 53, 8064-8083.	1.7	37
28	Exploring the exceptional performance of a deep learning stream temperature model and the value of streamflow data. Environmental Research Letters, 0, , .	2.2	36
29	Evaluating Bacteriophage P22 as a Tracer in a Complex Surface Water System: The Grand River, Michigan. Environmental Science & Technology, 2008, 42, 2426-2431.	4.6	35
30	An efficient space-fractional dispersion approximation for stream solute transport modeling. Advances in Water Resources, 2009, 32, 1482-1494.	1.7	34
31	The fan of influence of streams and channel feedbacks to simulated land surface water and carbon dynamics. Water Resources Research, 2016, 52, 880-902.	1.7	34
32	Mitigating Prediction Error of Deep Learning Streamflow Models in Large Dataâ€Sparse Regions With Ensemble Modeling and Soft Data. Geophysical Research Letters, 2021, 48, e2021GL092999.	1.5	32
33	Separating surface storage from hyporheic retention in natural streams using wavelet decomposition of acoustic Doppler current profiles. Water Resources Research, 2007, 43, .	1.7	31
34	Quantifying the effects of data integration algorithms on the outcomes of a subsurfaceâ€“land surface processes model. Environmental Modelling and Software, 2014, 59, 146-161.	1.9	30
35	Seasonal and Interannual Patterns and Controls of Hydrological Fluxes in an Amazon Floodplain Lake With a Surfaceâ€Subsurface Process Model. Water Resources Research, 2019, 55, 3056-3075.	1.7	30
36	Continental-scale streamflow modeling of basins with reservoirs: Towards a coherent deep-learning-based strategy. Journal of Hydrology, 2021, 599, 126455.	2.3	29

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37	The Data Synergy Effects of Timeâ€Series Deep Learning Models in Hydrology. Water Resources Research, 2022, 58, .	1.7	28
38	Improving Budyko curveâ€based estimates of longâ€term water partitioning using hydrologic signatures from GRACE. Water Resources Research, 2016, 52, 5537-5554.	1.7	27
39	Deep learning approaches for improving prediction of daily stream temperature in dataâ€scarce, unmonitored, and dammed basins. Hydrological Processes, 2021, 35, e14400.	1.1	27
40	Temporal evolution of soil moisture statistical fractal and controls by soil texture and regional groundwater flow. Advances in Water Resources, 2015, 86, 155-169.	1.7	22
41	Accurate and efficient prediction of fineâ€resolution hydrologic and carbon dynamic simulations from coarseâ€resolution models. Water Resources Research, 2016, 52, 791-812.	1.7	21
42	A Multiscale Deep Learning Model for Soil Moisture Integrating Satellite and In Situ Data. Geophysical Research Letters, 2022, 49, .	1.5	20
43	Interannual Variation in Hydrologic Budgets in an Amazonian Watershed with a Coupled Subsurfaceâ€"Land Surface Process Model. Journal of Hydrometeorology, 2017, 18, 2597-2617.	0.7	17
44	Coupled Two-Dimensional Surface Flow and Three-Dimensional Subsurface Flow Modeling for Drainage of Permeable Road Pavement. Journal of Hydrologic Engineering - ASCE, 2016, 21, .	0.8	11
45	Physics-Guided Long Short-Term Memory Network for Streamflow and Flood Simulations in the Lancangâ€"Mekong River Basin. Water (Switzerland), 2022, 14, 1429.	1.2	10
46	Combining a land surface model with groundwater model calibration to assess the impacts of groundwater pumping in a mountainous desert basin. Advances in Water Resources, 2019, 130, 12-28.	1.7	9
47	Critical Risk Indicators (CRIs) for the electric power grid: a survey and discussion of interconnected effects. Environment Systems and Decisions, 2021, 41, 594-615.	1.9	9
48	Revealing Causal Controls of Storage-Streamflow Relationships With a Data-Centric Bayesian Framework Combining Machine Learning and Process-Based Modeling. Frontiers in Water, 2020, 2, .	1.0	6
49	The introspective may achieve more: Enhancing existing Geoscientific models with native-language emulated structural reflection. Computers and Geosciences, 2018, 110, 32-40.	2.0	5
50	Constructing a Large-Scale Landslide Database Across Heterogeneous Environments Using Task-Specific Model Updates. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2022, 15, 4349-4370.	2.3	5
51	Cross-Basin Decadal Climate Regime Connecting the Colorado River with the Great Salt Lake. Journal of Hydrometeorology, 2018, 19, 659-665.	0.7	4
52	Integration of Multisource Data to Estimate Downward Longwave Radiation Based on Deep Neural Networks. IEEE Transactions on Geoscience and Remote Sensing, 2022, 60, 1-15.	2.7	4
53	A robust statistical analysis of the role of hydropower on the system electricity price and price volatility. Environmental Research Communications, 2022, 4, 075003.	0.9	1
54	Evaluating the Impacts of Land Use Changes on Hydrologic Responses in the Agricultural Regions of Michigan and Wisconsin. , 2010, , .		0

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55	Toward a Priori Evaluation of Relative Worth of Head and Conductivity Data as Functions of Data Densities in Inverse Groundwater Modeling. Water (Switzerland), 2019, 11, 1202.	1.2	0