David G Tarboton

List of Publications by Year
in descending order

110 papers	9,687 citations	57758 44 h-index	37204 96 g-index
133 all docs	133 docs citations	133 times ranked	9014 citing authors

#	Article	IF	Citations
1	A new method for the determination of flow directions and upslope areas in grid digital elevation models. Water Resources Research, 1997, 33, 309-319.	4.2	1,813
2	On the extraction of channel networks from digital elevation data. Hydrological Processes, 1991, 5, 81-100.	2.6	898
3	Twenty-three unsolved problems in hydrology (UPH) â€“ a community perspective. Hydrological Sciences Journal, 2019, 64, 1141-1158.	2.6	474
4	River restoration. Water Resources Research, 2005, 41, .	4.2	452
5	The fractal nature of river networks. Water Resources Research, 1988, 24, 1317-1322.	4.2	422
6	An overview of current applications, challenges, and future trends in distributed process-based models in hydrology. Journal of Hydrology, 2016, 537, 45-60.	5.4	349
7	Analyzing high resolution topography for advancing the understanding of mass and energy transfer through landscapes: A review. Earth-Science Reviews, 2015, 148, 174-193.	9.1	251
8	Power law distributions of discharge mass and energy in river basins. Water Resources Research, 1992, 28, 1089-1093.	4.2	226
9	A physical basis for drainage density. Geomorphology, 1992, 5, 59-76.	2.6	218
10	Scaling and elevation in river networks. Water Resources Research, 1989, 25, 2037-2051.	4.2	202
11	On Hack's Law. Water Resources Research, 1996, 32, 3367-3374.	4.2	202
12	Streamflow simulation: A nonparametric approach. Water Resources Research, 1997, 33, 291-308.	4.2	196
13	The influence of the spatial distribution of snow on basin-averaged snowmelt. Hydrological Processes, 1998, 12, 1671-1683.	2.6	187
14	A unified approach for processâ€based hydrologic modeling: 2. Model implementation and case studies. Water Resources Research, 2015, 51, 2515-2542.	4.2	173
15	Modeling soil depth from topographic and land cover attributes. Water Resources Research, 2009, 45, .	4.2	133
16	Sub-grid parameterization of snow distribution for an energy and mass balance snow cover model. Hydrological Processes, 1999, 13, 1921-1933.	2.6	131
17	Disaggregation procedures for stochastic hydrology based on nonparametric density estimation. Water Resources Research, 1998, 34, 107-119.	4.2	129
18	An integrated system for publishing environmental observations data. Environmental Modelling and Software, 2009, 24, 879-888.	4.5	124

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19	A Nonparametric Wet/Dry Spell Model for Resampling Daily Precipitation. Water Resources Research, 1996, 32, 2803-2823.	4.2	123
20	A relational model for environmental and water resources data. Water Resources Research, 2008, 44, .	4.2	118
21	Extraction of hydrological proximity measures from DEMs using parallel processing. Environmental Modelling and Software, 2011, 26, 1696-1709.	4.5	115
22	A new method for determination of most likely landslide initiation points and the evaluation of digital terrain model scale in terrain stability mapping. Hydrology and Earth System Sciences, 2006, 10, 663-677.	4.9	110
23	Application of TOPNET in the distributed model intercomparison project. Journal of Hydrology, 2004, 298, 178-201.	5.4	104
24	Fractal river networks, Horton's laws and Tokunaga cyclicity. Journal of Hydrology, 1996, 187, 105-117.	5.4	102
25	A probabilistic approach for channel initiation. Water Resources Research, 2002, 38, 61-1-61-14.	4.2	92
26	A sensor network for high frequency estimation of water quality constituent fluxes using surrogates. Environmental Modelling and Software, 2010, 25, 1031-1044.	4.5	88
27	Forests and Water Yield: A Synthesis of Disturbance Effects on Streamflow and Snowpack in Western Coniferous Forests. Journal of Forestry, 2020, 118, 172-192.	1.0	88
28	Testing aboveâ€•and belowâ€canopy representations of turbulent fluxes in an energy balance snowmelt model. Water Resources Research, 2013, 49, 1107-1122.	4.2	82
29	The application of depletion curves for parameterization of subgrid variability of snow. Hydrological Processes, 2004, 18, 1409-1422.	2.6	81
30	Advances in the Mapping of Flow Networks from Digital Elevation Data. , 2001, , 1.		76
31	River Channel Geometry and Rating Curve Estimation Using Height above the Nearest Drainage. Journal of the American Water Resources Association, 2018, 54, 785-806.	2.4	74
32	Comment on "On the fractal dimension of stream networks". Water Resources Research, 1990, 26, 2243-2244.	4.2	74
33	HydroShare: Sharing Diverse Environmental Data Types and Models as Social Objects with Application to the Hydrology Domain. Journal of the American Water Resources Association, 2016, 52, 873-889.	2.4	73
34	Modeling of the interactions between forest vegetation, disturbances, and sediment yields. Journal of Geophysical Research, 2004, 109, .	3.3	70
35	Natural flow regime, temperature and the composition and richness of invertebrate assemblages in streams of the western United States. Freshwater Biology, 2011, 56, 1248-1265.	2.4	65
36	An integrated modeling system for estimating glacier and snow melt driven streamflow from remote sensing and earth system data products in the Himalayas. Journal of Hydrology, 2014, 519, 1859-1869.	5.4	63

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37	A sediment transport model for incision of gullies on steep topography. Water Resources Research, 2003, 39, .	4.2	61
38	Nonhomogeneous Markov Model for Daily Precipitation. Journal of Hydrologic Engineering - ASCE, 1996, 1, 33-40.	1.9	57
39	Testing a blowing snow model against distributed snow measurements at Upper Sheep Creek, Idaho, United States of America. Water Resources Research, 2001, 37, 1341-1356.	4.2	55
40	GeoFlood: Largeâ€Scale Flood Inundation Mapping Based on Highâ€Resolution Terrain Analysis. Water Resources Research, 2018, 54, 10,013.	4.2	55
41	A CyberGIS Integration and Computation Framework for Highâ€Resolution Continentalâ€Scale Flood Inundation Mapping. Journal of the American Water Resources Association, 2018, 54, 770-784.	2.4	54
42	Components of an environmental observatory information system. Computers and Geosciences, 2011, 37, 207-218.	4.2	50
43	An examination of the sensitivity of the Great Salt Lake to changes in inputs. Water Resources Research, 2012, 48, .	4.2	50
44	Representation of canopy snow interception, unloading and melt in a parsimonious snowmelt model. Hydrological Processes, 2014, 28, 6320-6336.	2.6	49
45	Canopy radiation transmission for an energy balance snowmelt model. Water Resources Research, 2012, 48, .	4.2	46
46	Multivariate nonparametric resampling scheme for generation of daily weather variables. Stochastic Hydrology & Hydraulics, 1997, 11, 65-93.	0.5	41
47	A tool for downscaling weather data from large-grid reanalysis products to finer spatial scales for distributed hydrological applications. Environmental Modelling and Software, 2016, 84, 50-69.	4.5	41
48	Terrain Analysis Enhancements to the Height Above Nearest Drainage Flood Inundation Mapping Method. Water Resources Research, 2019, 55, 7983-8009.	4.2	41
49	Evaluation of alternative formulae for calculation of surface temperature in snowmelt models using frequency analysis of temperature observations. Hydrology and Earth System Sciences, 2010, 14, 535-543.	4.9	40
50	Observations Data Model 2: A community information model for spatially discrete Earth observations. Environmental Modelling and Software, 2016, 79, 55-74.	4.5	40
51	Design of a metadata framework for environmental models with an example hydrologic application in HydroShare. Environmental Modelling and Software, 2017, 93, 13-28.	4.5	40
52	Evaluation of kernel density estimation methods for daily precipitation resampling. Stochastic Hydrology & Hydraulics, 1997, 11, 523-547.	0.5	39
53	HYDROLOGIC SCENARIOS FOR SEVERE SUSTAINED DROUGHT IN THE SOUTHWESTERN UNITED STATES. Journal of the American Water Resources Association, 1995, 31, 803-813.	2.4	36
54	Kernel bandwidth selection for a first order nonparametric streamflow simulation model. Stochastic Hydrology & Hydraulics, 1998, 12, 33-52.	0.5	36

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55	The ABC's of snowmelt: a topographically factorized energy component snowmelt model. Hydrological Processes, 1999, 13, 1905-1920.	2.6	34
56	Potential Effects of Climate Change on Ecologically Relevant Streamflow Regimes. River Research and Applications, 2016, 32, 1827-1840.	1.7	32
57	Hydrologic controls on equilibrium soil depths. Water Resources Research, 2011, 47, .	4.2	28
58	Integrating hydrologic modeling web services with online data sharing to prepare, store, and execute hydrologic models. Environmental Modelling and Software, 2020, 130, 104731.	4.5	27
59	Is There Synchronicity in Nitrogen Input and Output Fluxes at the Noland Divide Watershed, a Small N-Saturated Forested Catchment in the Great Smoky Mountains National Park?. Scientific World Journal, The, 2001, 1, 480-492.	2.1	25
60	A virtual tile approach to raster-based calculations of large digital elevation models in a shared-memory system. Computers and Geosciences, 2015, 82, 78-88.	4.2	24
61	Toward open and reproducible environmental modeling by integrating online data repositories, computational environments, and model Application Programming Interfaces. Environmental Modelling and Software, 2021, 135, 104888.	4.5	24
62	On the interaction between bathymetry and climate in the system dynamics and preferred levels of the Great Salt Lake. Water Resources Research, 2011, 47, .	4.2	23
63	How Do Changes to the Railroad Causeway in Utahâ€™s Great Salt Lake Affect Water and Salt Flow?. PLoS ONE, 2015, 10, e0144111.	2.5	21
64	Estimating actual evapotranspiration from stony-soils in montane ecosystems. Agricultural and Forest Meteorology, 2019, 265, 183-194.	4.8	21
65	Characteristic length scale of input data in distributed models: implications for modeling grid size. Journal of Hydrology, 2000, 227, 128-139.	5.4	20
66	The source hydrology of severe sustained drought in the southwestern United States. Journal of Hydrology, 1994, 161, 31-69.	5.4	19
67	Enabling Collaborative Numerical Modeling in Earth Sciences using Knowledge Infrastructure. Environmental Modelling and Software, 2019, 120, 104424.	4.5	19
68	A taxonomy for reproducible and replicable research in environmental modelling. Environmental Modelling and Software, 2020, 134, 104753.	4.5	19
69	The Next Frontier: Making Research More Reproducible. Journal of Water Resources Planning and Management - ASCE, 2020, 146, .	2.6	19
70	HydroDS: Data services in support of physically based, distributed hydrological models. Environmental Modelling and Software, 2020, 125, 104623.	4.5	18
71	Ensemble Streamflow Forecasting Using an Energy Balance Snowmelt Model Coupled to a Distributed Hydrologic Model with Assimilation of Snow and Streamflow Observations. Water Resources Research, 2019, 55, 10813-10838.	4.2	17
72	Comment on â€œOn the fractal dimension of stream networksâ€•by Paolo La Barbera and Renzo Rosso. Water Resources Research, 1990, 26, 2243-2244.	4.2	15

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73	Managing a community shared vocabulary for hydrologic observations. Environmental Modelling and Software, 2014, 52, 62-73.	4.5	15
74	Hydrology's efforts toward the cyberfrontier. Eos, 2006, 87, 2.	0.1	14
75	Modeling the snow surface temperature with a one-layer energy balance snowmelt model. Hydrology and Earth System Sciences, 2014, 18, 5061-5076.	4.9	14
76	Combined hydrologic sampling criteria for rainfall and streamflow. Journal of Hydrology, 1987, 95, 323-339.	5.4	13
77	DigitalCrust â€“ a 4D data system of material properties for transforming research on crustal fluid flow. Geofluids, 2015, 15, 372-379.	0.7	13
78	A comparison of National Water Model retrospective analysis snow outputs at snow telemetry sites across the Western United States. Hydrological Processes, 2022, 36, e14469.	2.6	13
79	Hydrologic sampling â€" A characterization in terms of rainfall and basin properties. Journal of Hydrology, 1988, 102, 113-135.	5.4	12
80	Measuring success for a future vision: Defining impact in science gateways/virtual research environments. Concurrency Computation Practice and Experience, 2021, 33, e6099.	2.2	12
81	Integration of an energy balance snowmelt model into an open source modeling framework. Environmental Modelling and Software, 2015, 68, 205-218.	4.5	10
82	Simulated watershed responses to land cover changes using the Regional Hydro-Ecological Simulation System. Hydrological Processes, 2014, 28, 4511-4528.	2.6	9
83	Advancing distributed data management for the HydroShare hydrologic information system. Environmental Modelling and Software, 2018, 102, 233-240.	4.5	9
84	An open webâ€based module developed to advance dataâ€driven hydrologic process learning. Hydrological Processes, 2021, 35, e14273.	2.6	9
85	UNDERSTANDING COMPLEXITY IN THE STRUCTURE OF RAINFALL. Fractals, 1993, 01, 606-616.	3.7	8
86	Map based discovery of hydrologic data in the HydroShare collaboration environment. Environmental Modelling and Software, 2019, 111, 24-33.	4.5	8
87	Engineering Studentsâ€™ Perceptions of Mathematical Modeling in a Learning Module Centered on a Hydrologic Design Case Study. International Journal of Research in Undergraduate Mathematics Education, 2021, 7, 351-377.	1.8	8
88	Leveraging XSEDE HPC resources to address computational challenges with high-resolution topography data. , 2014, , .		6
89	Variable Streamflow Response to Forest Disturbance in the Western US: A Largeâ€Sample Hydrology Approach. Water Resources Research, 2022, 58, .	4.2	6
90	Accelerating TauDEM as a Scalable Hydrological Terrain Analysis Service on XSEDE. , 2014, , .		5

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91	A Scalable High-performance Topographic Flow Direction Algorithm for Hydrological Information Analysis. , 2016, , .		5
92	Reproducible Hydrological Modeling with CyberGIS-Jupyter. , 2019, , .		5
93	Collaborative sharing of multidimensional space-time data in a next generation hydrologic information system. Environmental Modelling and Software, 2020, 129, 104706.	4.5	5
94	Precipitation in topographically diverse regions. Eos, 1992, 73, 185-185.	0.1	4
95	UEB parallel: Distributed snow accumulation and melt modeling using parallel computing. Environmental Modelling and Software, 2020, 125, 104614.	4.5	4
96	Fast summarizing algorithm for polygonal statistics over a regular grid. Computers and Geosciences, 2020, 142, 104524.	4.2	4
97	Stone Content Influence on Land Surface Model Simulation of Soil Moisture and Evapotranspiration at Reynolds Creek Watershed. Journal of Hydrometeorology, 2020, 21, 1889-1904.	1.9	4
98	The influence of the spatial distribution of snow on basinâ€averaged snowmelt. Hydrological Processes, 1998, 12, 1671-1683.	2.6	3
99	Subâ€grid parameterization of snow distribution for an energy and mass balance snow cover model. Hydrological Processes, 1999, 13, 1921-1933.	2.6	3
100	Accelerating TauDEM for Extracting Hydrology Information from National-Scale High Resolution Topographic Dataset. , 2016, , .		2
101	Sharing Experiences in Designing Professional Learning to Support Hydrology and Water Resources Instructors to Create High-Quality Curricular Materials. Frontiers in Education, 0, 7, .	2.1	2
102	Physical hydrology. Eos, 1995, 76, 316-316.	0.1	1
103	Reply to comment by Jonathan J. Rhodes on â€œModeling of the interactions between forest vegetation, disturbances, and sediment yieldsâ€. Journal of Geophysical Research, 2005, 110, .	3.3	1
104	Building and Sustaining Community Cyber-Infrastructure for the Hydrologic Sciences. Eos, 2013, 94, 435-435.	0.1	1
105	Stimulating Active Learning in Hydrology Using Research-Driven, Web-based Learning Modules. , 2015, , 26.1400.1.		0
106	New Software Architecture for Integrated Water Modeling: CUAHSI/OpenMI Workshop for Integrating Water Models; Wallingford, United Kingdom, 7-10 April 2008. Eos, 2008, 89, 420-420.	0.1	0
107	Developing community cyberinfrastructure for integrating water data. Eos, 2011, 92, 399-399.	0.1	0
108	CI-WATER: Cyberinfrastructure to Advance High Performance Water Resource Modeling. , 2013, , .		0

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109	Adaptable web modules to stimulate active learning in engineering hydrology using data and model simulations. , 2014, , .		0
110	Development of Student-centered Modules to Support Active Learning in Hydrology. , 0, , .		0