

# Peter A Troch

## List of Publications by Year in descending order

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Version: 2024-02-01

56  
papers

2,770  
citations

172457

29  
h-index

182427

51  
g-index

65  
all docs

65  
docs citations

65  
times ranked

2873  
citing authors

#	ARTICLE	IF	CITATIONS
1	Hillslope-storage Boussinesq model for subsurface flow and variable source areas along complex hillslopes: 1. Formulation and characteristic response. <i>Water Resources Research</i> , 2003, 39, .	4.2	233
2	Improved understanding of soil moisture variability dynamics. <i>Geophysical Research Letters</i> , 2005, 32, .	4.0	228
3	A gridded global data set of soil, intact regolith, and sedimentary deposit thicknesses for regional and global land surface modeling. <i>Journal of Advances in Modeling Earth Systems</i> , 2016, 8, 41-65.	3.8	161
4	The master transit time distribution of variable flow systems. <i>Water Resources Research</i> , 2012, 48, .	4.2	135
5	Analytical solutions to a hillslope-storage kinematic wave equation for subsurface flow. <i>Advances in Water Resources</i> , 2002, 25, 637-649.	3.8	123
6	Functional model of water balance variability at the catchment scale: 1. Evidence of hydrologic similarity and space-time symmetry. <i>Water Resources Research</i> , 2011, 47, .	4.2	121
7	The importance of hydraulic groundwater theory in catchment hydrology: The legacy of Wilfried Brutsaert and Jean-Yves Parlange. <i>Water Resources Research</i> , 2013, 49, 5099-5116.	4.2	114
8	Catchment coevolution: A useful framework for improving predictions of hydrological change?. <i>Water Resources Research</i> , 2015, 51, 4903-4922.	4.2	97
9	Hillslope-storage Boussinesq model for subsurface flow and variable source areas along complex hillslopes: 2. Intercomparison with a three-dimensional Richards equation model. <i>Water Resources Research</i> , 2003, 39, .	4.2	94
10	Consequences of mixing assumptions for time-variable travel time distributions. <i>Hydrological Processes</i> , 2015, 29, 3460-3474.	2.6	93
11	Quantifying mountain block recharge by means of catchment-scale storage-discharge relationships. <i>Water Resources Research</i> , 2011, 47, .	4.2	88
12	Separating physical and meteorological controls of variable transit times in zero-order catchments. <i>Water Resources Research</i> , 2013, 49, 7644-7657.	4.2	88
13	Similarity analysis of subsurface flow response of hillslopes with complex geometry. <i>Water Resources Research</i> , 2005, 41, .	4.2	78
14	Characterizing the Fluxes and Age Distribution of Soil Water, Plant Water, and Deep Percolation in a Model Tropical Ecosystem. <i>Water Resources Research</i> , 2019, 55, 3307-3327.	4.2	73
15	Hillslope hydrology under glass: confronting fundamental questions of soil-water-biota co-evolution at Biosphere 2. <i>Hydrology and Earth System Sciences</i> , 2009, 13, 2105-2118.	4.9	68
16	An integrated modelling framework of catchment-scale ecohydrological processes: 1. Model description and tests over an energy-limited watershed. <i>Ecohydrology</i> , 2014, 7, 427-439.	2.4	68
17	What makes Darwinian hydrology "Darwinian"? Asking a different kind of question about landscapes. <i>Hydrology and Earth System Sciences</i> , 2014, 18, 417-433.	4.9	64
18	Impact of plant water uptake strategy on soil moisture and evapotranspiration dynamics during drydown. <i>Geophysical Research Letters</i> , 2006, 33, .	4.0	60

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19	Transit time distributions and storage-dependent age distributions in a sloping soil lysimeter with time-varying flow paths: Direct observation of internal and external transport variability. <i>Water Resources Research</i> , 2016, 52, 7105-7129.	4.2	60
20	Analytical solution of the linearized hillslope-storage Boussinesq equation for exponential hillslope width functions. <i>Water Resources Research</i> , 2004, 40, .	4.2	51
21	Storage-dependent drainable porosity for complex hillslopes. <i>Water Resources Research</i> , 2005, 41, .	4.2	47
22	The Landscape Evolution Observatory: A large-scale controllable infrastructure to study coupled Earth-surface processes. <i>Geomorphology</i> , 2015, 244, 190-203.	2.6	47
23	The mechanistic basis for storage-dependent age distributions of water discharged from an experimental hillslope. <i>Water Resources Research</i> , 2017, 53, 2733-2754.	4.2	46
24	Low-dimensional modeling of hillslope subsurface flow: Relationship between rainfall, recharge, and unsaturated storage dynamics. <i>Water Resources Research</i> , 2007, 43, .	4.2	45
25	On bimodality in warm season soil moisture observations. <i>Geophysical Research Letters</i> , 2005, 32, .	4.0	43
26	Climatic and landscape controls on water transit times and silicate mineral weathering in the critical zone. <i>Water Resources Research</i> , 2015, 51, 6036-6051.	4.2	43
27	Hillslope subsurface flow similarity: Real-world tests of the hillslope Peclet number. <i>Water Resources Research</i> , 2007, 43, .	4.2	36
28	Seasonal and Topographic Variations in Ecohydrological Separation Within a Small, Temperate, Snow-influenced Catchment. <i>Water Resources Research</i> , 2019, 55, 6417-6435.	4.2	32
29	Hillslope-scale experiment demonstrates the role of convergence during two-step saturation. <i>Hydrology and Earth System Sciences</i> , 2014, 18, 3681-3692.	4.9	31
30	The Hills Are Alive: Earth Science in a Controlled Environment. <i>Eos</i> , 2009, 90, 120-120.	0.1	29
31	Incipient subsurface heterogeneity and its effect on overland flow generation – insight from a modeling study of the first experiment at the Biosphere 2 Landscape Evolution Observatory. <i>Hydrology and Earth System Sciences</i> , 2014, 18, 1873-1883.	4.9	29
32	Modeling the Hydrological Effect on Local Gravity at Moxa, Germany. <i>Journal of Hydrometeorology</i> , 2006, 7, 346-354.	1.9	28
33	The Hydrological Effects of Lateral Preferential Flow Paths in a Glaciated Watershed in the Northeastern USA. <i>Vadose Zone Journal</i> , 2010, 9, 397-414.	2.2	24
34	An integrated modelling framework of catchment-scale ecohydrological processes: 2. The role of water subsidy by overland flow on vegetation dynamics in a semi-arid catchment. <i>Ecohydrology</i> , 2014, 7, 815-827.	2.4	20
35	CABra: a novel large-sample dataset for Brazilian catchments. <i>Hydrology and Earth System Sciences</i> , 2021, 25, 3105-3135.	4.9	19
36	The Terrestrial Water Cycle: Modeling and Data Assimilation across Catchment Scales. <i>Journal of Hydrometeorology</i> , 2006, 7, 309-311.	1.9	16

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37	Assessing Microbial Community Patterns During Incipient Soil Formation From Basalt. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 941-958.	3.0	16
38	An Aridity Index-Based Formulation of Streamflow Components. Water Resources Research, 2020, 56, e2020WR027123.	4.2	16
39	Coevolution of volcanic catchments in Japan. Hydrology and Earth System Sciences, 2016, 20, 1133-1150.	4.9	15
40	Numerical assessment of a dynamical relaxation data assimilation scheme for a catchment hydrological model. Hydrological Processes, 2006, 20, 549-563.	2.6	12
41	On the shape of forward transit time distributions in low-order catchments. Hydrology and Earth System Sciences, 2020, 24, 2895-2920.	4.9	12
42	Inference of Parameters for a Global Hydrological Model: Identifiability and Predictive Uncertainties of Climate-Based Parameters. Water Resources Research, 2022, 58, .	4.2	12
43	Pore water chemistry reveals gradients in mineral transformation across a model basaltic hillslope. Geochemistry, Geophysics, Geosystems, 2016, 17, 2054-2069.	2.5	11
44	Controlled Experiments of Hillslope Coevolution at the Biosphere 2 Landscape Evolution Observatory: Toward Prediction of Coupled Hydrological, Biogeochemical, and Ecological Change. , 0, , .		9
45	Effects of differential hillslope-scale water retention characteristics on rainfall-runoff response at the Landscape Evolution Observatory. Hydrological Processes, 2018, 32, 2118-2127.	2.6	9
46	Direct Observation of Hillslope Scale Storage Selection Functions in Experimental Hydrologic Systems: Geomorphologic Structure and Preferential Discharge of Old Water. Water Resources Research, 2022, 58, .	4.2	7
47	Transit Time Distributions Estimation Exploiting Flow-Weighted Time: Theory and Proof of Concept. Water Resources Research, 2020, 56, e2020WR027186.	4.2	6
48	Soil Lysimeter Excavation for Coupled Hydrological, Geochemical, and Microbiological Investigations. Journal of Visualized Experiments, 2016, , .	0.3	4
49	Contrasting Community Assembly Forces Drive Microbial Structural and Potential Functional Responses to Precipitation in an Incipient Soil System. Frontiers in Microbiology, 2021, 12, 754698.	3.5	4
50	New Soil, Old Plants, and Ubiquitous Microbes: Evaluating the Potential of Incipient Basaltic Soil to Support Native Plant Growth and Influence Belowground Soil Microbial Community Composition. Sustainability, 2020, 12, 4209.	3.2	2
51	Highly sampled measurements in a controlled atmosphere at the Biosphere 2 Landscape Evolution Observatory. Scientific Data, 2020, 7, 306.	5.3	1
52	Physical Interpretation of Time-Varying Storage Selection Functions in a Bench-Scale Hillslope Experiment via Geophysical Imaging of Ages of Water. Water Resources Research, 2022, 58, .	4.2	1
53	A vision for Water Resources Research. Water Resources Research, 2017, 53, 4530-4532.	4.2	0
54	Appreciation for <i>Water Resources Research</i> Reviewers. Water Resources Research, 2018, 54, 7114-7137.	4.2	0

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55	Thank You to Our 2019 Reviewers. <i>Water Resources Research</i> , 2020, 56, e2020WR027684.	4.2	0
56	Thank You to Our 2020 Reviewers. <i>Water Resources Research</i> , 2021, 57, e2021WR029938.	4.2	0