Ciaran Harman

List of Publications by Year
in descending order

72 papers	4,826 citations	101543 36 h-index	98798 67 g-index
91 all docs	91 docs citations	91 times ranked	5059 citing authors

#	Article	IF	Citations
1	"Panta Rhei—Everything Flows": Change in hydrology and society—The IAHS Scientific Decade 2013–2022. Hydrological Sciences Journal, 2013, 58, 1256-1275.	2.6	569
2	The future of hydrology: An evolving science for a changing world. Water Resources Research, 2010, 46, .	4.2	487
3	Time-variable transit time distributions and transport: Theory and application to storage-dependent transport of chloride in a watershed. Water Resources Research, 2015, 51, 1-30.	4.2	270
4	Geophysical imaging reveals topographic stress control of bedrock weathering. Science, 2015, 350, 534-538.	12.6	249
5	Climate and vegetation water use efficiency at catchment scales. Hydrological Processes, 2009, 23, 2409-2414.	2.6	176
6	Storage selection functions: A coherent framework for quantifying how catchments store and release water and solutes. Water Resources Research, 2015, 51, 4840-4847.	4.2	170
7	Spatial scale dependence of ecohydrologically mediated water balance partitioning: A synthesis framework for catchment ecohydrology. Water Resources Research, 2011, 47, .	4.2	133
8	Vegetation–infiltration relationships across climatic and soil type gradients. Journal of Geophysical Research, 2010, 115, .	3.3	130
9	Functional model of water balance variability at the catchment scale: 1. Evidence of hydrologic similarity and space–time symmetry. Water Resources Research, 2011, 47, .	4.2	121
10	Developing predictive insight into changing water systems: use-inspired hydrologic science for the Anthropocene. Hydrology and Earth System Sciences, 2013, 17, 5013-5039.	4.9	119
11	The importance of hydraulic groundwater theory in catchment hydrology: The legacy of Wilfried Brutsaert and Jean-Yves Parlange. Water Resources Research, 2013, 49, 5099-5116.	4.2	114
12	Catchment classification: hydrological analysis of catchment behavior through process-based modeling along a climate gradient. Hydrology and Earth System Sciences, 2011, 15, 3411-3430.	4.9	110
13	Variability and uncertainty in reach bankfull hydraulic geometry. Journal of Hydrology, 2008, 351, 13-25.	5.4	108
14	Power law catchment–scale recessions arising from heterogeneous linear small–scale dynamics. Water Resources Research, 2009, 45, .	4.2	98
15	Comparative hydrology across AmeriFlux sites: The variable roles of climate, vegetation, and groundwater. Water Resources Research, 2011, 47, .	4.2	96
16	Advancing catchment hydrology to deal with predictions under change. Hydrology and Earth System Sciences, 2014, 18, 649-671.	4.9	83
17	HESS Opinions: Hydrologic predictions in a changing environment: behavioral modeling. Hydrology and Earth System Sciences, 2011, 15, 635-646.	4.9	82
18	Spatiotemporal scaling of hydrological and agrochemical export dynamics in a tile–drained Midwestern watershed. Water Resources Research, 2011, 47, .	4.2	79

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19	Coevolution of nonlinear trends in vegetation, soils, and topography with elevation and slope aspect: A case study in the sky islands of southern Arizona. Journal of Geophysical Research F: Earth Surface, 2013, 118, 741-758.	2.8	76
20	A similarity framework to assess controls on shallow subsurface flow dynamics in hillslopes. Water Resources Research, 2009, 45, .	4.2	74
21	Characterizing the Fluxes and Age Distribution of Soil Water, Plant Water, and Deep Percolation in a Model Tropical Ecosystem. Water Resources Research, 2019, 55, 3307-3327.	4.2	73
22	Optimizing dam release rules to meet environmental flow targets. River Research and Applications, 2005, 21, 113-129.	1.7	68
23	Hillslope hydrology under glass: confronting fundamental questions of soil-water-biota co-evolution at Biosphere 2. Hydrology and Earth System Sciences, 2009, 13, 2105-2118.	4.9	68
24	Landscape filtering of hydrologic and biogeochemical responses in managed catchments. Landscape Ecology, 2013, 28, 651-664.	4.2	65
25	What makes Darwinian hydrology &quot;Darwinian&quot;? Asking a different kind of question about landscapes. Hydrology and Earth System Sciences, 2014, 18, 417-433.	4.9	64
26	Transit time distributions and <scp>S</scp>tor<scp>A</scp>ge <scp>S</scp>election functions in a sloping soil lysimeter with timeâ€varying flow paths: Direct observation of internal and external transport variability. Water Resources Research, 2016, 52, 7105-7129.	4.2	60
27	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. Water Resources Research, 2011, 47, .	4.2	59
28	Sensitivity of Catchment Transit Times to Rainfall Variability Under Present and Future Climates. Water Resources Research, 2017, 53, 10231-10256.	4.2	59
29	Climate, soil, and vegetation controls on the temporal variability of vadose zone transport. Water Resources Research, 2011, 47, .	4.2	49
30	An improved method for interpretation of riverine concentrationâ€discharge relationships indicates longâ€term shifts in reservoir sediment trapping. Geophysical Research Letters, 2016, 43, 10,215.	4.0	48
31	The mechanistic basis for storageâ€dependent age distributions of water discharged from an experimental hillslope. Water Resources Research, 2017, 53, 2733-2754.	4.2	46
32	Water cycle dynamics in a changing environment: Improving predictability through synthesis. Water Resources Research, 2011, 47, .	4.2	45
33	Fillâ€andâ€Spill: A Process Description of Runoff Generation at the Scale of the Beholder. Water Resources Research, 2021, 57, e2020WR027514.	4.2	43
34	A network model for prediction and diagnosis of sediment dynamics at the watershed scale. Journal of Geophysical Research, 2012, 117, .	3.3	42
35	Effects of hydraulic conductivity variability on hillslopeâ€scale shallow subsurface flow response and storageâ€discharge relations. Water Resources Research, 2009, 45, .	4.2	39
36	Spatial patterns of vegetation, soils, and microtopography from terrestrial laser scanning on two semiarid hillslopes of contrasting lithology. Journal of Geophysical Research G: Biogeosciences, 2014, 119, 163-180.	3.0	39

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37	An efficient tracer test for time-variable transit time distributions in periodic hydrodynamic systems. Geophysical Research Letters, 2014, 41, 1567-1575.	4.0	37
38	Hydrogeomorphic controls on hyporheic and riparian transport in two headwater mountain streams during base flow recession. Water Resources Research, 2016, 52, 1479-1497.	4.2	36
39	Downstream hydraulic geometry of rivers in Victoria, Australia. Geomorphology, 2008, 99, 302-316.	2.6	33
40	Functional approach to exploring climatic and landscape controls of runoff generation: 1. Behavioral constraints on runoff volume. Water Resources Research, 2014, 50, 9300-9322.	4.2	32
41	Seasonal and Topographic Variations in Ecohydrological Separation Within a Small, Temperate, Snow-Influenced Catchment. Water Resources Research, 2019, 55, 6417-6435.	4.2	32
42	Signatures of Hydrologic Function Across the Critical Zone Observatory Network. Water Resources Research, 2021, 57, e2019WR026635.	4.2	31
43	A low-dimensional model of bedrock weathering and lateral flow coevolution in hillslopes: 2. Controls on weathering and permeability profiles, drainage hydraulics, and solute export pathways. Hydrological Processes, 2019, 33, 1168-1190.	2.6	29
44	Age-Ranked Storage-Discharge Relations: A Unified Description of Spatially Lumped Flow and Water Age in Hydrologic Systems. Water Resources Research, 2019, 55, 7143-7165.	4.2	26
45	Intra-annual rainfall variability control on interannual variability of catchment water balance: A stochastic analysis. Water Resources Research, 2012, 48, .	4.2	24
46	How does reach-scale stream-hyporheic transport vary with discharge? Insights from rSAS analysis of sequential tracer injections in a headwater mountain stream. Water Resources Research, 2016, 52, 7130-7150.	4.2	24
47	Using Particle Tracking to Understand Flow Paths, Age Distributions, and the Paradoxical Origins of the Inverse Storage Effect in an Experimental Catchment. Water Resources Research, 2020, 56, e2019WR025140.	4.2	24
48	Spatial and temporal variation in river corridor exchange across a 5th-order mountain stream network. Hydrology and Earth System Sciences, 2019, 23, 5199-5225.	4.9	23
49	Patterns, puzzles and people: implementing hydrologic synthesis. Hydrological Processes, 2011, 25, 3256-3266.	2.6	22
50	A subordinated kinematic wave equation for heavy-tailed flow responses from heterogeneous hillslopes. Journal of Geophysical Research, 2010, 115, .	3.3	20
51	Streamflow partitioning and transit time distribution in snow-dominated basins as a function of climate. Journal of Hydrology, 2019, 570, 726-738.	5.4	20
52	Spatial and temporal variation in the isotopic composition of Ethiopian precipitation. Journal of Hydrology, 2020, 585, 124364.	5.4	20
53	Particle tracer transport in a sloping soil lysimeter under periodic, steady state conditions. Journal of Hydrology, 2019, 569, 61-76.	5.4	17
54	A low-dimensional model of bedrock weathering and lateral flow coevolution in hillslopes: 1. Hydraulic theory of reactive transport. Hydrological Processes, 2019, 33, 466-475.	2.6	16

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55	Solute Transport and Transformation in an Intermittent, Headwater Mountain Stream with Diurnal Discharge Fluctuations. Water (Switzerland), 2019, 11, 2208.	2.7	14
56	Co-located contemporaneous mapping of morphological, hydrological, chemical, and biological conditions in a 5th-order mountain stream network, Oregon, USA. Earth System Science Data, 2019, 11, 1567-1581.	9.9	14
57	Comment on â€œA Simple Model for Regolith Formation by Chemical Weatheringâ€•by Braun et al.: Contradictory Concentrations and a Tale of Two Velocities. Journal of Geophysical Research F: Earth Surface, 2017, 122, 2033-2036.	2.8	11
58	Groundwater Affects the Geomorphic and Hydrologic Properties of Coevolved Landscapes. Journal of Geophysical Research F: Earth Surface, 2022, 127, .	2.8	11
59	Controlled Experiments of Hillslope Coevolution at the Biosphere 2 Landscape Evolution Observatory: Toward Prediction of Coupled Hydrological, Biogeochemical, and Ecological Change. , 0, , .		9
60	Quantifying Depthâ€Dependent Seismic Anisotropy in the Critical Zone Enhanced by Weathering of a Piedmont Schist. Journal of Geophysical Research F: Earth Surface, 2021, 126, e2021JF006289.	2.8	9
61	GroundwaterDupuitPercolator: A Landlab component for groundwater flow. Journal of Open Source Software, 2020, 5, 1935.	4.6	9
62	Understanding of Storm Runoff Generation in a Weathered, Fractured Granitoid Headwater Catchment in Northern China. Water (Switzerland), 2019, 11, 123.	2.7	8
63	Assessment of Climate, Sizing, and Location Controls on Green Infrastructure Efficacy: A Timescale Framework. Water Resources Research, 2020, 56, e2019WR026141.	4.2	8
64	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
65	Transit Times and StorAge Selection Functions in Idealized Hillslopes With Steady Infiltration. Water Resources Research, 2022, 58, .	4.2	6
66	The effects of disproportional load contributions on quantifying vegetated filter strip sediment trapping efficiencies. Stochastic Environmental Research and Risk Assessment, 2018, 32, 2369-2380.	4.0	5
67	Reply to comment by J. Szilagyi on â€œPower law catchmentâ€scale recessions arising from heterogeneous linear smallâ€scale dynamicsâ€• Water Resources Research, 2009, 45, .	4.2	4
68	Assessing proxy system models of cave dripwater Î´18O variability. Quaternary Science Reviews, 2021, 254, 106799.	3.0	4
69	Evaluation of statistical methods for quantifying fractal scaling in water-quality time series with irregular sampling. Hydrology and Earth System Sciences, 2018, 22, 1175-1192.	4.9	3
70	Uncovering the hillslope scale flow and transport dynamics in an experimental hydrologic system. Hydrological Processes, 2021, 35, e14337.	2.6	3
71	Reply to comment by Porporato and Calabrese on â€œStorage selection functions: A coherent framework for quantifying how catchments store and release water and solutesâ€• Water Resources Research, 2016, 52, 616-618.	4.2	0
72	A data-driven method for estimating the composition of end-members from stream water chemistry time series. Hydrology and Earth System Sciences, 2022, 26, 1977-1991.	4.9	0