Aaron I Packman

List of Publications by Year
in descending order

141 papers	8,948 citations	38742 50 h-index	46799 89 g-index
155 all docs	155 docs citations	155 times ranked	8206 citing authors

#	Article	IF	Citations
1	Microplastic accumulation in riverbed sediment via hyporheic exchange from headwaters to mainstems. Science Advances, 2022, 8, eabi9305.	10.3	68
2	A Novel Framework for Simulating Particle Deposition With Moving Bedforms. Geophysical Research Letters, 2022, 49, .	4.0	10
3	Organizational Principles of Hyporheic Exchange Flow and Biogeochemical Cycling in River Networks Across Scales. Water Resources Research, 2022, 58, .	4.2	26
4	Advancing river corridor science beyond disciplinary boundaries with an inductive approach to catalyse hypothesis generation. Hydrological Processes, 2022, 36, .	2.6	7
5	Gathering at the top? Environmental controls of microplastic uptake and biomagnification in freshwater food webs. Environmental Pollution, 2021, 268, 115750.	7.5	75
6	Standardizing data reporting in the research community to enhance the utility of open data for SARS-CoV-2 wastewater surveillance. Environmental Science: Water Research and Technology, 2021, 7, 1545-1551.	2.4	34
7	Effect of Decreasing Biological Lability on Dissolved Organic Matter Dynamics in Streams. Water Resources Research, 2021, 57, e2020WR027918.	4.2	6
8	Residence Time in Hyporheic Bioactive Layers Explains Nitrate Uptake in Streams. Water Resources Research, 2021, 57, e2020WR027646.	4.2	8
9	Dynamics of Hyporheic Exchange Flux and Fine Particle Deposition Under Moving Bedforms. Water Resources Research, 2021, 57, e2020WR028541.	4.2	14
10	Green roof vegetation management alters potential for water quality and temperature mitigation. Ecohydrology, 2021, 14, e2321.	2.4	5
11	Hydraulic drivers of populations, communities and ecosystem processes. Journal of Ecohydraulics, 2021, 6, 91-94.	3.1	3
12	Critical Capability Needs for Reduction of Transmission of SARS-CoV-2 Indoors. Frontiers in Bioengineering and Biotechnology, 2021, 9, 641599.	4.1	1
13	Double Averaging Analysis Applied to a Large Eddy Simulation of Coupled Turbulent Overlying and Porewater Flow. Water Resources Research, 2021, 57, e2021WR029918.	4.2	3
14	Bedform segregation and locking increase storage of natural and synthetic particles in rivers. Nature Communications, 2021, 12, 7315.	12.8	5
15	Soil hydrology drives ecological niche differentiation in a native prairie microbiome. FEMS Microbiology Ecology, 2020, 96, .	2.7	8
16	Fine particle transport dynamics in response to wood additions in a small agricultural stream. Hydrological Processes, 2020, 34, 4128-4138.	2.6	3
17	Rethinking wastewater risks and monitoring in light of the COVID-19 pandemic. Nature Sustainability, 2020, 3, 981-990.	23.7	195
18	Significance of Hyporheic Exchange for Predicting Microplastic Fate in Rivers. Environmental Science and Technology Letters, 2020, 7, 727-732.	8.7	64

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19	Knowledge, attitudes, intentions, and behavior related to green infrastructure for flood management: A systematic literature review. Science of the Total Environment, 2020, 720, 137606.	8.0	79
20	Fine Sediment Deposition and Filtration Under Losing and Gaining Flow Conditions: A Particle Tracking Model Approach. Water Resources Research, 2020, 56, e2019WR026057.	4.2	14
21	Impacts of Suspended Clay Particle Deposition on Sandâ€Bed Morphodynamics. Water Resources Research, 2020, 56, e2019WR027010.	4.2	18
22	A Miniaturized Testing Apparatus to Study the Chemo-Mechanics of Porous Media. Geotechnical Testing Journal, 2020, 43, 829-843.	1.0	2
23	Towards mechanical characterization of granular biofilms by optical coherence elastography measurements of circumferential elastic waves. Soft Matter, 2019, 15, 5562-5573.	2.7	9
24	Nondestructive characterization of soft materials and biofilms by measurement of guided elastic wave propagation using optical coherence elastography. Soft Matter, 2019, 15, 575-586.	2.7	16
25	A Dual Domain stochastic lagrangian model for predicting transport in open channels with hyporheic exchange. Advances in Water Resources, 2019, 125, 57-67.	3.8	17
26	A systematic review of the human health and social well-being outcomes of green infrastructure for stormwater and flood management. Journal of Environmental Management, 2019, 246, 868-880.	7.8	99
27	Effects of Turbulent Hyporheic Mixing on Reachâ€Scale Transport. Water Resources Research, 2019, 55, 3780-3795.	4.2	26
28	Effects of vertical hydrodynamic mixing on photomineralization of dissolved organic carbon in arctic surface waters. Environmental Sciences: Processes and Impacts, 2019, 21, 748-760.	3.5	8
29	Characterization of soil profiles and elemental concentrations reveals deposition of heavy metals and phosphorus in a Chicago-area nature preserve, Gensburg Markham Prairie. Journal of Soils and Sediments, 2019, 19, 3817-3831.	3.0	15
30	Ecological and Genomic Attributes of Novel Bacterial Taxa That Thrive in Subsurface Soil Horizons. MBio, 2019, 10, .	4.1	108
31	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
32	Fineâ€Particle Deposition, Retention, and Resuspension Within a Sandâ€Bedded Stream Are Determined by Streambed Morphodynamics. Water Resources Research, 2019, 55, 10303-10318.	4.2	18
33	Improving Predictions of Fine Particle Immobilization in Streams. Geophysical Research Letters, 2019, 46, 13853-13861.	4.0	9
34	Solute Transport and Transformation in an Intermittent, Headwater Mountain Stream with Diurnal Discharge Fluctuations. Water (Switzerland), 2019, 11, 2208.	2.7	14
35	Effects of resuspension on the mobility and chemical speciation of zinc in contaminated sediments. Journal of Hazardous Materials, 2019, 364, 300-308.	12.4	35
36	Advancing our predictive understanding of river corridor exchange. Wiley Interdisciplinary Reviews: Water, 2019, 6, e1327.	6.5	50

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37	A multiscale statistical method to identify potential areas of hyporheic exchange for river restoration planning. Environmental Modelling and Software, 2019, 111, 311-323.	4.5	27
38	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
39	Cooling water use in thermoelectric power generation and its associated challenges for addressing water-energy nexus. Water-Energy Nexus, 2018, 1, 26-41.	4.0	110
40	Less Fine Particle Retention in a Restored Versus Unrestored Urban Stream: Balance Between Hyporheic Exchange, Resuspension, and Immobilization. Journal of Geophysical Research G: Biogeosciences, 2018, 123, 1425-1439.	3.0	17
41	Turbulence Links Momentum and Solute Exchange in Coarseâ€Grained Streambeds. Water Resources Research, 2018, 54, 3225-3242.	4.2	36
42	Cryptosporidium oocyst persistence in agricultural streams â€“a mobile-immobile model framework assessment. Scientific Reports, 2018, 8, 4603.	3.3	7
43	Interplay between flow and bioturbation enhances metal efflux from low-permeability sediments. Journal of Hazardous Materials, 2018, 341, 304-312.	12.4	22
44	Comparison of biofilm cell quantification methods for drinking water distribution systems. Journal of Microbiological Methods, 2018, 144, 8-21.	1.6	32
45	Toward a conceptual framework of hyporheic exchange across spatial scales. Hydrology and Earth System Sciences, 2018, 22, 6163-6185.	4.9	37
46	The Need for an Integrated Landâ€Lakeâ€Atmosphere Modeling System, Exemplified by North America's Great Lakes Region. Earth's Future, 2018, 6, 1366-1379.	6.3	34
47	Interactions Between Suspended Kaolinite Deposition and Hyporheic Exchange Flux Under Losing and Gaining Flow Conditions. Geophysical Research Letters, 2018, 45, 4077-4085.	4.0	34
48	Morphological analysis of pore size and connectivity in a thick mixedâ€culture biofilm. Biotechnology and Bioengineering, 2018, 115, 2268-2279.	3.3	14
49	Benthic biofilm controls on fine particle dynamics in streams. Water Resources Research, 2017, 53, 222-236.	4.2	31
50	FracFit: A robust parameter estimation tool for fractional calculus models. Water Resources Research, 2017, 53, 2559-2567.	4.2	38
51	Biofilmâ€induced bioclogging produces sharp interfaces in hyporheic flow, redox conditions, and microbial community structure. Geophysical Research Letters, 2017, 44, 4917-4925.	4.0	55
52	Nitrosomonas europaea biofilm formation is enhanced by Pseudomonas aeruginosa. FEMS Microbiology Ecology, 2017, 93, .	2.7	13
53	A Process-Based Model for Bioturbation-Induced Mixing. Scientific Reports, 2017, 7, 14287.	3.3	6
54	Covariation in patterns of turbulenceâ€driven hyporheic flow and denitrification enhances reachâ€scale nitrogen removal. Water Resources Research, 2017, 53, 6927-6944.	4.2	30

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55	Fine particle retention within stream storage areas at base flow and in response to a storm event. Water Resources Research, 2017, 53, 5690-5705.	4.2	37
56	Microbial diversity in an intensively managed landscape is structured by landscape connectivity. FEMS Microbiology Ecology, 2017, 93, .	2.7	30
57	Solute mixing regulates heterogeneity of mineral precipitation in porous media. Geophysical Research Letters, 2017, 44, 6658-6666.	4.0	14
58	Hydrodynamic Forcing Mobilizes Cu in Low-Permeability Estuarine Sediments. Environmental Science & Technology, 2016, 50, 4615-4623.	10.0	17
59	In Situ Biomineralization and Particle Deposition Distinctively Mediate Biofilm Susceptibility to Chlorine. Applied and Environmental Microbiology, 2016, 82, 2886-2892.	3.1	23
60	Biomineralization strongly modulates the formation ofProteus mirabilisandPseudomonas aeruginosadual-species biofilms. FEMS Microbiology Ecology, 2016, 92, fiw189.	2.7	19
61	An Integrated Experimental and Modeling Approach to Predict Sediment Mixing from Benthic Burrowing Behavior. Environmental Science & Technology, 2016, 50, 10047-10054.	10.0	22
62	Ureolytic Biomineralization Reduces Proteus mirabilis Biofilm Susceptibility to Ciprofloxacin. Antimicrobial Agents and Chemotherapy, 2016, 60, 2993-3000.	3.2	21
63	Methods for Characterizing the Co-development of Biofilm and Habitat Heterogeneity. Journal of Visualized Experiments, 2015, , .	0.3	3
64	Visualizing Hyporheic Flow Through Bedforms Using Dye Experiments and Simulation. Journal of Visualized Experiments, 2015, , .	0.3	2
65	Effects of benthic and hyporheic reactive transport on breakthrough curves. Freshwater Science, 2015, 34, 301-315.	1.8	32
66	Microbial Transport, Retention, and Inactivation in Streams: A Combined Experimental and Stochastic Modeling Approach. Environmental Science & Technology, 2015, 49, 7825-7833.	10.0	50
67	Coupled Effects of Hydrodynamics and Biogeochemistry on Zn Mobility and Speciation in Highly Contaminated Sediments. Environmental Science & Technology, 2015, 49, 5346-5353.	10.0	41
68	Spatial Patterns of Carbonate Biomineralization in Biofilms. Applied and Environmental Microbiology, 2015, 81, 7403-7410.	3.1	59
69	Pseudomonas aeruginosafacilitatesCampylobacter jejunigrowth in biofilms under oxic flow conditions. FEMS Microbiology Ecology, 2015, 91, fiv136.	2.7	17
70	Pseudomonas aeruginosa Promotes Escherichia coli Biofilm Formation in Nutrient-Limited Medium. PLoS ONE, 2014, 9, e107186.	2.5	47
71	Retention and remobilization dynamics of fine particles and microorganisms in pastoral streams. Water Research, 2014, 66, 459-472.	11.3	67
72	Biofilm responses to smooth flow fields and chemical gradients in novel microfluidic flow cells. Biotechnology and Bioengineering, 2014, 111, 597-607.	3.3	28

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73	Hyporheic flow and transport processes: Mechanisms, models, and biogeochemical implications. Reviews of Geophysics, 2014, 52, 603-679.	23.0	642
74	Stochastic modeling of fine particulate organic carbon dynamics in rivers. Water Resources Research, 2014, 50, 4341-4356.	4.2	53
75	Temporal Variations in the Abundance and Composition of Biofilm Communities Colonizing Drinking Water Distribution Pipes. PLoS ONE, 2014, 9, e98542.	2.5	77
76	Building bacterial bridges. Nature Geoscience, 2013, 6, 682-683.	12.9	3
77	Interactions between hyporheic flow produced by stream meanders, bars, and dunes. Water Resources Research, 2013, 49, 5450-5461.	4.2	88
78	The extracellular matrix protects <scp>P</scp>seudomonas aeruginosa biofilms by limiting the penetration of tobramycin. Environmental Microbiology, 2013, 15, 2865-2878.	3.8	357
79	Effects of fluid flow conditions on interactions between species in biofilms. FEMS Microbiology Ecology, 2013, 84, 344-354.	2.7	33
80	Transport and Fate of Microbial Pathogens in Agricultural Settings. Critical Reviews in Environmental Science and Technology, 2013, 43, 775-893.	12.8	197
81	Intrastream variability in solute transport: Hydrologic and geomorphic controls on solute retention. Journal of Geophysical Research F: Earth Surface, 2013, 118, 413-422.	2.8	19
82	The Hospital Microbiome Project: Meeting report for the 2nd Hospital Microbiome Project, Chicago, USA, January 15th, 2013. Standards in Genomic Sciences, 2013, 8, 571-579.	1.5	11
83	Deposition of Cryptosporidium parvum Oocysts in Porous Media: A Synthesis of Attachment Efficiencies Measured under Varying Environmental Conditions. Environmental Science & Technology, 2012, 46, 9491-9500.	10.0	20
84	Linking fluvial bed sediment transport across scales. Geophysical Research Letters, 2012, 39, .	4.0	64
85	A conceptual model for the blooming behavior and persistence of the benthic matâ€forming diatomDidymosphenia geminata in oligotrophic streams. Journal of Geophysical Research, 2012, 117, .	3.3	40
86	Physical controls and predictability of stream hyporheic flow evaluated with a multiscale model. Water Resources Research, 2012, 48, .	4.2	68
87	Effects of solute breakthrough curve tail truncation on residence time estimates: A synthesis of solute tracer injection studies. Journal of Geophysical Research, 2012, 117, .	3.3	69
88	Hydrogeomorphology of the hyporheic zone: Stream solute and fine particle interactions with a dynamic streambed. Journal of Geophysical Research, 2012, 117, .	3.3	99
89	Disinfection of bacterial biofilms in pilot-scale cooling tower systems. Biofouling, 2011, 27, 393-402.	2.2	28
90	Spatiotemporal scaling of hydrological and agrochemical export dynamics in a tileâ€drained Midwestern watershed. Water Resources Research, 2011, 47, .	4.2	79

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91	Interactions between the matâ€forming algaDidymosphenia geminataand its hydrodynamic environment. Limnology & Oceanography Fluids & Environments, 2011, 1, 4-22.	1.7	38
92	Patterns, puzzles and people: implementing hydrologic synthesis. Hydrological Processes, 2011, 25, 3256-3266.	2.6	22
93	A novel planar flow cell for studies of biofilm heterogeneity and flowâ€“biofilm interactions. Biotechnology and Bioengineering, 2011, 108, 2571-2582.	3.3	52
94	Effects of overlying velocity, particle size, and biofilm growth on streamâ€“subsurface exchange of particles. Hydrological Processes, 2010, 24, 108-114.	2.6	25
95	A multiscale model for integrating hyporheic exchange from ripples to meanders. Water Resources Research, 2010, 46, .	4.2	168
96	A multiâ€scale investigation of interfacial transport, pore fluid flow, and fine particle deposition in a sediment bed. Water Resources Research, 2010, 46, .	4.2	37
97	Role of bacterial adhesion in the microbial ecology of biofilms in cooling tower systems. Biofouling, 2009, 25, 241-253.	2.2	32
98	Using Xâ€ray microâ€tomography and poreâ€scale modeling to quantify sediment mixing and fluid flow in a developing streambed. Geophysical Research Letters, 2009, 36, .	4.0	23
99	Temporal evolution of pore geometry, fluid flow, and solute transport resulting from colloid deposition. Water Resources Research, 2009, 45, .	4.2	66
100	Groundâ€based thermography of fluvial systems at low and high discharge reveals potential complex thermal heterogeneity driven by flow variation and bioroughness. Hydrological Processes, 2008, 22, 980-986.	2.6	60
101	Biophysical controls on organic carbon fluxes in fluvial networks. Nature Geoscience, 2008, 1, 95-100.	12.9	1,102
102	Poreâ€scale analysis of permeability reduction resulting from colloid deposition. Geophysical Research Letters, 2008, 35, .	4.0	79
103	Hyporheic flows in stratified beds. Water Resources Research, 2008, 44, .	4.2	73
104	Biophysicochemical process coupling controls nitrogen use by benthic biofilms. Limnology and Oceanography, 2007, 52, 1665-1671.	3.1	41
105	Influence of Flow Conditions and System Geometry on Nitrate Use by Benthic Biofilms: Implications for Nutrient Mitigation. Environmental Science & Technology, 2007, 41, 8142-8148.	10.0	15
106	Relating phosphorus uptake to changes in transient storage and streambed sediment characteristics in headwater tributaries of Valley Creek, an urbanizing watershed. Journal of Hydrology, 2007, 336, 444-457.	5.4	20
107	Effects of overlying velocity on periphyton structure and denitrification. Journal of Geophysical Research, 2007, 112, .	3.3	38
108	Fractal topography and subsurface water flows from fluvial bedforms to the continental shield. Geophysical Research Letters, 2007, 34, .	4.0	140

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109	Imaging of colloidal deposits in granular porous media by Xâ€ray difference microâ€tomography. Geophysical Research Letters, 2007, 34, .	4.0	43
110	A continuous time random walk approach to the stream transport of solutes. Water Resources Research, 2007, 43, .	4.2	110
111	Changes in fine sediment size distributions due to interactions with streambed sediments. Sedimentary Geology, 2007, 202, 529-537.	2.1	26
112	Transport ofCryptosporidium parvumin porous media: Long-term elution experiments and continuous time random walk filtration modeling. Water Resources Research, 2006, 42, .	4.2	78
113	Exact three-dimensional spectral solution to surface-groundwater interactions with arbitrary surface topography. Geophysical Research Letters, 2006, 33, .	4.0	98
114	Changes in streambed sediment characteristics and solute transport in the headwaters of Valley Creek, an urbanizing watershed. Journal of Hydrology, 2006, 323, 74-91.	5.4	30
115	Development of Layered Sediment Structure and its Effects on Pore Water Transport and Hyporheic Exchange. Water, Air and Soil Pollution, 2006, 6, 433-442.	0.8	29
116	Applicability of the Transient Storage Model to the hyporheic exchange of metals. Journal of Contaminant Hydrology, 2006, 84, 21-35.	3.3	21
117	Deposition of Cryptosporidium Oocysts in Streambeds. Applied and Environmental Microbiology, 2006, 72, 1810-1816.	3.1	54
118	Capture and Retention of Cryptosporidium parvum Oocysts by Pseudomonas aeruginosa Biofilms. Applied and Environmental Microbiology, 2006, 72, 6242-6247.	3.1	61
119	Effects of suspended sediment characteristics and bed sediment transport on streambed clogging. Hydrological Processes, 2005, 19, 413-427.	2.6	137
120	Association of Cryptosporidium parvum with Suspended Particles: Impact on Oocyst Sedimentation. Applied and Environmental Microbiology, 2005, 71, 1072-1078.	3.1	82
121	Coupled Streamâ^'Subsurface Exchange of Colloidal Hematite and Dissolved Zinc, Copper, and Phosphateâ€. Environmental Science & Technology, 2005, 39, 6387-6394.	10.0	59
122	Hyporheic Exchange with Gravel Beds: Basic Hydrodynamic Interactions and Bedform-Induced Advective Flows. Journal of Hydraulic Engineering, 2004, 130, 647-656.	1.5	235
123	Stream-Subsurface Exchange of Zinc in the Presence of Silica and Kaolinite Colloids. Environmental Science & Technology, 2004, 38, 6571-6581.	10.0	48
124	Estimation of solute transport and storage parameters in a stream with anthropogenically produced unsteady flow and industrial bromide input. Water Resources Research, 2004, 40, .	4.2	14
125	Hyporheic exchange with heterogeneous streambeds: Laboratory experiments and modeling. Water Resources Research, 2004, 40, .	4.2	226
126	Modeling of Simultaneous Exchange of Colloids and Sorbing Contaminants between Streams and Streambeds. Environmental Science & Technology, 2004, 38, 2901-2911.	10.0	48

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127	Relative roles of stream flow and sedimentary conditions in controlling hyporheic exchange. Hydrobiologia, 2003, 494, 291-297.	2.0	91
128	Comparison of transient storage in vegetated and unvegetated reaches of a small agricultural stream in Sweden: seasonal variation and anthropogenic manipulation. Advances in Water Resources, 2003, 26, 951-964.	3.8	69
129	Application of the transient storage model to analyze advective hyporheic exchange with deep and shallow sediment beds. Water Resources Research, 2003, 39, .	4.2	58
130	Interplay of stream-subsurface exchange, clay particle deposition, and streambed evolution. Water Resources Research, 2003, 39, .	4.2	156
131	Parameter Estimation of the Transient Storage Model for Streamâ€“Subsurface Exchange. Journal of Environmental Engineering, ASCE, 2003, 129, 456-463.	1.4	49
132	Effects of Background Water Composition on Streamâ€“Subsurface Exchange of Submicron Colloids. Journal of Environmental Engineering, ASCE, 2002, 128, 624-634.	1.4	55
133	Effect of bed form geometry on the penetration of nonreactive solutes into a streambed. Water Resources Research, 2002, 38, 27-1-27-12.	4.2	104
134	Effect of flow-induced exchange in hyporheic zones on longitudinal transport of solutes in streams and rivers. Water Resources Research, 2002, 38, 2-1-2-15.	4.2	197
135	Hyporheic exchange of solutes and colloids with moving bed forms. Water Resources Research, 2001, 37, 2591-2605.	4.2	144
136	Analysis of an observed relationship between colloid collision efficiency and mean collector grain size. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2001, 191, 133-144.	4.7	7
137	Modeling Surfaceâ€“Subsurface Hydrological Interactions. , 2000, , 45-80.		76
138	Kaolinite exchange between a stream and streambed: Laboratory experiments and validation of a colloid transport model. Water Resources Research, 2000, 36, 2363-2372.	4.2	114
139	A physicochemical model for colloid exchange between a stream and a sand streambed with bed forms. Water Resources Research, 2000, 36, 2351-2361.	4.2	150
140	Title is missing!. Water, Air, and Soil Pollution, 1997, 99, 113-122.	2.4	3
141	Experimental techniques for laboratory investigation of clay colloid transport and filtration in a stream with a sand bed. Water, Air, and Soil Pollution, 1997, 99, 113-122.	2.4	18