Andrea Rinaldo

List of Publications by Year
in descending order

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143 papers	11,209 citations	28190 55 h-index	32761 100 g-index
150 all docs	150 docs citations	150 times ranked	10457 citing authors

#	Article	IF	Citations
1	Spread and dynamics of the COVID-19 epidemic in Italy: Effects of emergency containment measures. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 10484-10491.	3.3	878
2	Size and form in efficient transportation networks. Nature, 1999, 399, 130-132.	13.7	713
3	Neutral metacommunity models predict fish diversity patterns in Mississippiâ€“Missouri basin. Nature, 2008, 453, 220-222.	13.7	323
4	Dendritic connectivity controls biodiversity patterns in experimental metacommunities. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 5761-5766.	3.3	293
5	Geomorphological dispersion. Water Resources Research, 1991, 27, 513-525.	1.7	268
6	Self-organized fractal river networks. Physical Review Letters, 1993, 70, 822-825.	2.9	260
7	Energy dissipation, runoff production, and the three-dimensional structure of river basins. Water Resources Research, 1992, 28, 1095-1103.	1.7	258
8	Landscape evolution in tidal embayments: Modeling the interplay of erosion, sedimentation, and vegetation dynamics. Journal of Geophysical Research, 2007, 112, .	3.3	247
9	Minimum energy and fractal structures of drainage networks. Water Resources Research, 1992, 28, 2183-2195.	1.7	230
10	Catchment residence and travel time distributions: The master equation. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	227
11	Scaling laws for river networks. Physical Review E, 1996, 53, 1510-1515.	0.8	208
12	Transport in the hydrologic response: Travel time distributions, soil moisture dynamics, and the old water paradox. Water Resources Research, 2010, 46, .	1.7	208
13	Biologically-controlled multiple equilibria of tidal landforms and the fate of the Venice lagoon. Geophysical Research Letters, 2007, 34, .	1.5	199
14	Fluvial network organization imprints on microbial co-occurrence networks. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 12799-12804.	3.3	193
15	Resilience and reactivity of global food security. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 6902-6907.	3.3	179
16	Storage selection functions: A coherent framework for quantifying how catchments store and release water and solutes. Water Resources Research, 2015, 51, 4840-4847.	1.7	170
17	On spatially explicit models of cholera epidemics. Journal of the Royal Society Interface, 2010, 7, 321-333.	1.5	166
18	Catchment travel time distributions and water flow in soils. Water Resources Research, 2011, 47, .	1.7	163

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19	Reassessment of the 2010â€“2011 Haiti cholera outbreak and rainfall-driven multiseason projections. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 6602-6607.	3.3	153
20	Fractal structures as least energy patterns: The case of river networks. Geophysical Research Letters, 1992, 19, 889-892.	1.5	150
21	River networks as ecological corridors: A complex systems perspective for integrating hydrologic, geomorphologic, and ecologic dynamics. Water Resources Research, 2009, 45, .	1.7	148
22	Modelling cholera epidemics: the role of waterways, human mobility and sanitation. Journal of the Royal Society Interface, 2012, 9, 376-388.	1.5	143
23	Evolution and selection of river networks: Statics, dynamics, and complexity. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 2417-2424.	3.3	143
24	Mobile phone data highlights the role of mass gatherings in the spreading of cholera outbreaks. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 6421-6426.	3.3	133
25	CHANNEL NETWORKS. Annual Review of Earth and Planetary Sciences, 1998, 26, 289-327.	4.6	132
26	Topology of the Fittest Transportation Network. Physical Review Letters, 2000, 84, 4745-4748.	2.9	117
27	Estimating species distribution and abundance in river networks using environmental DNA. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 11724-11729.	3.3	116
28	Metapopulation persistence and species spread in river networks. Ecology Letters, 2014, 17, 426-434.	3.0	113
29	A Note on Fractal Channel Networks. Water Resources Research, 1991, 27, 3041-3049.	1.7	112
30	On the spaceâ€time evolution of a cholera epidemic. Water Resources Research, 2008, 44, .	1.7	111
31	The geography of COVID-19 spread in Italy and implications for the relaxation of confinement measures. Nature Communications, 2020, 11, 4264.	5.8	110
32	Ecohydrology of Terrestrial Ecosystems. BioScience, 2010, 60, 898-907.	2.2	109
33	Modeling chloride transport using travel time distributions at Plynlimon, Wales. Water Resources Research, 2015, 51, 3259-3276.	1.7	109
34	Complex Interaction of Dendritic Connectivity and Hierarchical Patch Size on Biodiversity in River-Like Landscapes. American Naturalist, 2014, 183, 13-25.	1.0	108
35	Network allometry. Geophysical Research Letters, 2002, 29, 3-1.	1.5	107
36	On landscape self-organization. Journal of Geophysical Research, 1994, 99, 11971-11993.	3.3	102

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37	Using SAS functions and highâ€resolution isotope data to unravel travel time distributions in headwater catchments. Water Resources Research, 2017, 53, 1864-1878.	1.7	102
38	Microbial size spectra from natural and nutrient enriched ecosystems. Limnology and Oceanography, 2001, 46, 778-789.	1.6	100
39	Geomorphic controls on elevational gradients of species richness. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 1737-1742.	3.3	97
40	A neutral metapopulation model of biodiversity in river networks. Journal of Theoretical Biology, 2007, 245, 351-363.	0.8	94
41	Scaling, Optimality, and Landscape Evolution. Journal of Statistical Physics, 2001, 104, 1-48.	0.5	92
42	Linking water age and solute dynamics in streamflow at the <scp>H</scp>ubbard <scp>B</scp>rook <scp>E</scp>xperimental <scp>F</scp>orest, <scp>NH</scp>, <scp>USA</scp>. Water Resources Research, 2015, 51, 9256-9272.	1.7	83
43	Prediction of the spatial evolution and effects of control measures for the unfolding Haiti cholera outbreak. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	82
44	Sculpting of a Fractal River Basin. Physical Review Letters, 1997, 78, 4522-4525.	2.9	78
45	Effects of Connectivity and Recurrent Local Disturbances on Community Structure and Population Density in Experimental Metacommunities. PLoS ONE, 2011, 6, e19525.	1.1	78
46	Scaling body size fluctuations. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 4646-4650.	3.3	77
47	Generalized reproduction numbers and the prediction of patterns in waterborne disease. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 19703-19708.	3.3	76
48	Chloride circulation in a lowland catchment and the formulation of transport by travel time distributions. Water Resources Research, 2013, 49, 4619-4632.	1.7	74
49	Spatial effects on species persistence and implications for biodiversity. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 4346-4351.	3.3	70
50	Geomorphic signatures on Brutsaert base flow recession analysis. Water Resources Research, 2013, 49, 5462-5472.	1.7	70
51	Field migration rates of tidal meanders recapitulate fluvial morphodynamics. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 1463-1468.	3.3	66
52	Biological fluid dynamics of airborne COVID-19 infection. Rendiconti Lincei, 2020, 31, 505-537.	1.0	65
53	Toward catchment hydroâ€biogeochemical theories. Wiley Interdisciplinary Reviews: Water, 2021, 8, e1495.	2.8	65
54	Sample and population exponents of generalized Taylorâ€™s law. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 7755-7760.	3.3	64

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55	Self-organized river basin landscapes: Fractal and multifractal characteristics. Water Resources Research, 1994, 30, 3531-3539.	1.7	62
56	Hydrology and density feedbacks control the ecology of intermediate hosts of schistosomiasis across habitats in seasonal climates. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 6427-6432.	3.3	61
57	Assessing the impact of non-pharmaceutical interventions on SARS-CoV-2 transmission in Switzerland. Swiss Medical Weekly, 2020, 150, w20295.	0.8	61
58	Generalized receptor law governs phototaxis in the phytoplankton Euglena gracilis. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 7045-7050.	3.3	60
59	Integrated field, laboratory, and theoretical study of PKD spread in a Swiss prealpine river. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 11992-11997.	3.3	60
60	River networks as ecological corridors: A coherent ecohydrological perspective. Advances in Water Resources, 2018, 112, 27-58.	1.7	58
61	Kinematics of age mixing in advection-dispersion models. Water Resources Research, 2013, 49, 8539-8551.	1.7	56
62	The potential impact of case-area targeted interventions in response to cholera outbreaks: A modeling study. PLoS Medicine, 2018, 15, e1002509.	3.9	52
63	Signatures of sea level changes on tidal geomorphology: Experiments on network incision and retreat. Geophysical Research Letters, 2012, 39, .	1.5	49
64	Hydrologic controls on basinâ€scale distribution of benthic invertebrates. Water Resources Research, 2014, 50, 2903-2920.	1.7	48
65	Integration of satellite remote sensing data in ecosystem modelling at local scales: Practices and trends. Methods in Ecology and Evolution, 2018, 9, 1810-1821.	2.2	48
66	Rainfall as a driver of epidemic cholera: Comparative model assessments of the effect of intra-seasonal precipitation events. Acta Tropica, 2019, 190, 235-243.	0.9	47
67	Statistical mechanics of wind waveâ€induced erosion in shallow tidal basins: Inferences from the Venice Lagoon. Geophysical Research Letters, 2013, 40, 3402-3407.	1.5	46
68	Catchment-scale herbicides transport: Theory and application. Advances in Water Resources, 2013, 52, 232-242.	1.7	45
69	Transport of fluorobenzoate tracers in a vegetated hydrologic control volume: 2. Theoretical inferences and modeling. Water Resources Research, 2015, 51, 2793-2806.	1.7	44
70	On the probability of extinction of the Haiti cholera epidemic. Stochastic Environmental Research and Risk Assessment, 2016, 30, 2043-2055.	1.9	41
71	Generation and application of river network analogues for use in ecology and evolution. Ecology and Evolution, 2020, 10, 7537-7550.	0.8	41
72	Hydrologic Variability Affects Invertebrate Grazing on Phototrophic Biofilms in Stream Microcosms. PLoS ONE, 2013, 8, e60629.	1.1	41

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73	Metapopulation capacity of evolving fluvial landscapes. Water Resources Research, 2015, 51, 2696-2706.	1.7	39
74	Scaling in Ecosystems and the Linkage of Macroecological Laws. Physical Review Letters, 2007, 98, 068104.	2.9	37
75	Patterns of vegetation biodiversity: The roles of dispersal directionality and river network structure. Journal of Theoretical Biology, 2008, 252, 221-229.	0.8	37
76	Analytic probability distributions for snowâ€dominated streamflow. Water Resources Research, 2013, 49, 2701-2713.	1.7	37
77	Spatially Explicit Conditions for Waterborne Pathogen Invasion. American Naturalist, 2013, 182, 328-346.	1.0	37
78	Spread of proliferative kidney disease in fish along stream networks: A spatial metacommunity framework. Freshwater Biology, 2018, 63, 114-127.	1.2	37
79	The Widened Pipe Model of plant hydraulic evolution. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	36
80	Scaleâ€dependent effects of solar radiation patterns on the snowâ€dominated hydrologic response. Geophysical Research Letters, 2015, 42, 3895-3902.	1.5	35
81	Glucose- but Not Rice-Based Oral Rehydration Therapy Enhances the Production of Virulence Determinants in the Human Pathogen Vibrio cholerae. PLoS Neglected Tropical Diseases, 2014, 8, e3347.	1.3	34
82	A Theoretical Analysis of the Geography of Schistosomiasis in Burkina Faso Highlights the Roles of Human Mobility and Water Resources Development in Disease Transmission. PLoS Neglected Tropical Diseases, 2015, 9, e0004127.	1.3	34
83	Advancing ecohydrology in the 21st century: A convergence of opportunities. Ecohydrology, 2020, 13, e2208.	1.1	34
84	Tree water deficit and dynamic source water partitioning. Hydrological Processes, 2021, 35, .	1.1	34
85	Floquet theory for seasonal environmental forcing of spatially explicit waterborne epidemics. Theoretical Ecology, 2014, 7, 351-365.	0.4	33
86	An epidemiological model for proliferative kidney disease in salmonid populations. Parasites and Vectors, 2016, 9, 487.	1.0	32
87	Statistical characterization of spatiotemporal sediment dynamics in the Venice lagoon. Journal of Geophysical Research F: Earth Surface, 2016, 121, 1049-1064.	1.0	32
88	River landscapes and optimal channel networks. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 6548-6553.	3.3	32
89	Modelled effects of prawn aquaculture on poverty alleviation and schistosomiasis control. Nature Sustainability, 2019, 2, 611-620.	11.5	32
90	Metabolic principles of river basin organization. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 11751-11755.	3.3	30

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91	A generalized definition of reactivity for ecological systems and the problem of transient species dynamics. Methods in Ecology and Evolution, 2017, 8, 1574-1584.	2.2	28
92	Classification and prediction of river network ephemerality and its relevance for waterborne disease epidemiology. Advances in Water Resources, 2017, 110, 263-278.	1.7	28
93	Velocities, Residence Times, Tracer Breakthroughs in a Vegetated Lysimeter: A Multitracer Experiment. Water Resources Research, 2019, 55, 21-33.	1.7	28
94	Evolving biodiversity patterns in changing river networks. Journal of Theoretical Biology, 2019, 462, 418-424.	0.8	28
95	Hydroclimatology of dualâ€peak annual cholera incidence: Insights from a spatially explicit model. Geophysical Research Letters, 2012, 39, .	1.5	27
96	Cholera in the Lake Kivu region (DRC): Integrating remote sensing and spatially explicit epidemiological modeling. Water Resources Research, 2014, 50, 5624-5637.	1.7	27
97	Near real-time forecasting for cholera decision making in Haiti after Hurricane Matthew. PLoS Computational Biology, 2018, 14, e1006127.	1.5	27
98	Achieving coordinated national immunity and cholera elimination in Haiti through vaccination: a modelling study. The Lancet Global Health, 2020, 8, e1081-e1089.	2.9	26
99	The role of aquatic reservoir fluctuations in long-term cholera patterns. Epidemics, 2012, 4, 33-42.	1.5	25
100	On the predictive ability of mechanistic models for the Haitian cholera epidemic. Journal of the Royal Society Interface, 2015, 12, 20140840.	1.5	25
101	Demographic stochasticity and resource autocorrelation control biological invasions in heterogeneous landscapes. Oikos, 2017, 126, 1554-1563.	1.2	25
102	Covariations in ecological scaling laws fostered by community dynamics. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 10672-10677.	3.3	25
103	Transport of fluorobenzoate tracers in a vegetated hydrologic control volume: 1. Experimental results. Water Resources Research, 2015, 51, 2773-2792.	1.7	23
104	Conditions for transient epidemics of waterborne disease in spatially explicit systems. Royal Society Open Science, 2019, 6, 181517.	1.1	23
105	Transport and Water Age Dynamics in Soils: A Comparative Study of Spatially Integrated and Spatially Explicit Models. Water Resources Research, 2020, 56, no.	1.7	23
106	Evolution of dispersal in explicitly spatial metacommunities. Journal of Theoretical Biology, 2011, 269, 256-265.	0.8	22
107	Modeling Key Drivers of Cholera Transmission Dynamics Provides New Perspectives for Parasitology. Trends in Parasitology, 2017, 33, 587-599.	1.5	22
108	Epidemicity thresholds for water-borne and water-related diseases. Journal of Theoretical Biology, 2018, 447, 126-138.	0.8	22

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109	On the role of human mobility in the spread of cholera epidemics: towards an epidemiological movement ecology. Ecohydrology, 2012, 5, 531-540.	1.1	21
110	The geomorphometry of endorheic drainage basins: implications for interpreting and modelling their evolution. Earth Surface Processes and Landforms, 2013, 38, 1881-1896.	1.2	21
111	Thermodynamics in the hydrologic response: Travel time formulation and application to <scp>A</scp>lpine catchments. Water Resources Research, 2015, 51, 1671-1687.	1.7	20
112	Tracing and Closing the Water Balance in a Vegetated Lysimeter. Water Resources Research, 2021, 57, e2020WR029049.	1.7	20
113	Estimation of streamflow recession parameters: New insights from an analytic streamflow distribution model. Hydrological Processes, 2019, 33, 1595-1609.	1.1	19
114	Optimal control of the spatial allocation of COVID-19 vaccines: Italy as a case study. PLoS Computational Biology, 2022, 18, e1010237.	1.5	19
115	Effects of altered river network connectivity on the distribution ofSalmo trutta: Insights from a metapopulation model. Freshwater Biology, 2019, 64, 1877-1895.	1.2	18
116	A minimalist model of extinction and range dynamics of virtual mountain species driven by warming temperatures. PLoS ONE, 2019, 14, e0213775.	1.1	18
117	Rainfall mediations in the spreading of epidemic cholera. Advances in Water Resources, 2013, 60, 34-46.	1.7	17
118	Generalized size scaling of metabolic rates based on single-cell measurements with freshwater phytoplankton. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 17323-17329.	3.3	16
119	Phloem water isotopically different to xylem water: Potential causes and implications for ecohydrological tracing. Ecohydrology, 2022, 15, .	1.1	16
120	Real-time projections of cholera outbreaks through data assimilation and rainfall forecasting. Advances in Water Resources, 2017, 108, 345-356.	1.7	14
121	Environmental heterogeneity promotes spatial resilience of phototrophic biofilms in streambeds. Biology Letters, 2018, 14, 20180432.	1.0	14
122	Range of reproduction number estimates for COVID-19 spread. Biochemical and Biophysical Research Communications, 2021, 538, 253-258.	1.0	13
123	Space and time predictions of schistosomiasis snail host population dynamics across hydrologic regimes in Burkina Faso. Geospatial Health, 2019, 14, .	0.3	12
124	A Note on the Role of Seasonal Expansions and Contractions of the Flowing Fluvial Network on Metapopulation Persistence. Water Resources Research, 2021, 57, e2021WR029813.	1.7	12
125	Field study on drainage densities and rescaled width functions in a highâ€altitude alpine catchment. Hydrological Processes, 2016, 30, 2138-2152.	1.1	11
126	Dynamic spatio-temporal patterns of metapopulation occupancy in patchy habitats. Royal Society Open Science, 2021, 8, 201309.	1.1	11

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127	Persistence of amphibian metapopulation occupancy in dynamic wetlandscapes. Landscape Ecology, 2022, 37, 695-711.	1.9	9
128	The epidemicity index of recurrent SARS-CoV-2 infections. Nature Communications, 2021, 12, 2752.	5.8	8
129	Catchment Drainage Network Scaling Laws Found Experimentally in Overland Flow Morphologies. Geophysical Research Letters, 2018, 45, 9614-9622.	1.5	6
130	Toward a Closure of Catchment Mass Balance: Insight on the Missing Link From a Vegetated Lysimeter. Water Resources Research, 2022, 58, .	1.7	6
131	An exactly solvable coarse-grained model for species diversity. Journal of Statistical Mechanics: Theory and Experiment, 2012, 2012, P07017.	0.9	4
132	On the probabilistic nature of the species-area relation. Journal of Theoretical Biology, 2019, 462, 391-407.	0.8	4
133	SESTET: A spatially explicit stream temperature model based on equilibrium temperature. Hydrological Processes, 2020, 34, 355-369.	1.1	4
134	Earth and field observations underpin metapopulation dynamics in complex landscapes: Near-term study on carabids. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 12877-12884.	3.3	4
135	Ecohydrology 2.0. Rendiconti Lincei, 2022, 33, 245-270.	1.0	4
136	Applying the Principal Component Analysis for a deeper understanding of the groundwater system: case study of the Bacchiglione Basin (Veneto, Italy). Acque Sotterranee - Italian Journal of Groundwater, 2022, 11, 7-17.	0.2	3
137	Epidemicity of cholera spread and the fate of infection control measures. Journal of the Royal Society Interface, 2022, 19, 20210844.	1.5	1
138	Ecohydrology: a fast moving field. Ecohydrology, 2012, 5, 519-519.	1.1	0
139	Species. , 2020, , 47-113.		0
140	Populations. , 2020, , 114-224.		0
141	Waterborne Disease. , 2020, , 225-339.		0
142	Afterthoughts and Outlook. , 2020, , 340-361.		0
143	The intrusion of ecology into hydrology and morphodynamics. Rendiconti Lincei, 0, , 1.	1.0	0