Enrico Bertuzzo

List of Publications by Year
in descending order

105 papers	6,412 citations	87723 38 h-index	74018 75 g-index
126 all docs	126 docs citations	126 times ranked	7137 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	Neutral metacommunity models predict fish diversity patterns in Mississippiâ€“Missouri basin. Nature, 2008, 453, 220-222.	13.7	323
3	Catchment residence and travel time distributions: The master equation. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	227
4	Transport in the hydrologic response: Travel time distributions, soil moisture dynamics, and the old water paradox. Water Resources Research, 2010, 46, .	1.7	208
5	Rethinking wastewater risks and monitoring in light of the COVID-19 pandemic. Nature Sustainability, 2020, 3, 981-990.	11.5	195
6	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
7	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
8	On spatially explicit models of cholera epidemics. Journal of the Royal Society Interface, 2010, 7, 321-333.	1.5	166
9	Catchment travel time distributions and water flow in soils. Water Resources Research, 2011, 47, .	1.7	163
10	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
11	Headwaters are critical reservoirs of microbial diversity for fluvial networks. Proceedings of the Royal Society B: Biological Sciences, 2013, 280, 20131760.	1.2	153
12	River networks as ecological corridors: A complex systems perspective for integrating hydrologic, geomorphologic, and ecologic dynamics. Water Resources Research, 2009, 45, .	1.7	148
13	Modelling cholera epidemics: the role of waterways, human mobility and sanitation. Journal of the Royal Society Interface, 2012, 9, 376-388.	1.5	143
14	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
15	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
16	Metapopulation persistence and species spread in river networks. Ecology Letters, 2014, 17, 426-434.	3.0	113
17	On the spaceâ€time evolution of a cholera epidemic. Water Resources Research, 2008, 44, .	1.7	111
18	The geography of COVID-19 spread in Italy and implications for the relaxation of confinement measures. Nature Communications, 2020, 11, 4264.	5.8	110

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19	Transport at basin scales: 1. Theoretical framework. Hydrology and Earth System Sciences, 2006, 10, 19-29.	1.9	97
20	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
21	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
22	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
23	Unexpected large evasion fluxes of carbon dioxide from turbulent streams draining the worldâ€™s mountains. Nature Communications, 2019, 10, 4888.	5.8	71
24	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
25	Geomorphic signatures on Brutsaert base flow recession analysis. Water Resources Research, 2013, 49, 5462-5472.	1.7	70
26	How network structure can affect nitrogen removal by streams. Freshwater Biology, 2018, 63, 128-140.	1.2	65
27	Scaling of dissolved organic carbon removal in river networks. Advances in Water Resources, 2017, 110, 136-146.	1.7	62
28	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
29	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
30	The potential impact of case-area targeted interventions in response to cholera outbreaks: A modeling study. PLoS Medicine, 2018, 15, e1002509.	3.9	52
31	Emergent productivity regimes of river networks. Limnology and Oceanography Letters, 2019, 4, 173-181.	1.6	50
32	Hydrologic controls on basinâ€scale distribution of benthic invertebrates. Water Resources Research, 2014, 50, 2903-2920.	1.7	48
33	On the Lagrangian formulations of reactive solute transport in the hydrologic response. Water Resources Research, 2005, 41, .	1.7	46
34	River networks and ecological corridors: Reactive transport on fractals, migration fronts, hydrochory. Water Resources Research, 2007, 43, .	1.7	46
35	Comparative study of ecohydrological streamflow probability distributions. Water Resources Research, 2010, 46, .	1.7	45
36	Catchment-scale herbicides transport: Theory and application. Advances in Water Resources, 2013, 52, 232-242.	1.7	45

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37	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
38	On the probability of extinction of the Haiti cholera epidemic. Stochastic Environmental Research and Risk Assessment, 2016, 30, 2043-2055.	1.9	41
39	Generation and application of river network analogues for use in ecology and evolution. Ecology and Evolution, 2020, 10, 7537-7550.	0.8	41
40	Hydrologic Variability Affects Invertebrate Grazing on Phototrophic Biofilms in Stream Microcosms. PLoS ONE, 2013, 8, e60629.	1.1	41
41	Heterogeneity in schistosomiasis transmission dynamics. Journal of Theoretical Biology, 2017, 432, 87-99.	0.8	40
42	Metapopulation capacity of evolving fluvial landscapes. Water Resources Research, 2015, 51, 2696-2706.	1.7	39
43	Transport at basin scales: 2. Applications. Hydrology and Earth System Sciences, 2006, 10, 31-48.	1.9	38
44	Hydrologic controls and anthropogenic drivers of the zebra mussel invasion of the Mississippiâ€Missouri river system. Water Resources Research, 2011, 47, .	1.7	38
45	Climate-Induced Changes in Spring Snowmelt Impact Ecosystem Metabolism and Carbon Fluxes in an Alpine Stream Network. Ecosystems, 2018, 21, 373-390.	1.6	38
46	<i>tran</i>-SAS v1.0: a numerical model to compute catchment-scale hydrologic transport using StorAge Selection functions. Geoscientific Model Development, 2018, 11, 1627-1639.	1.3	38
47	Patterns of vegetation biodiversity: The roles of dispersal directionality and river network structure. Journal of Theoretical Biology, 2008, 252, 221-229.	0.8	37
48	Spatially Explicit Conditions for Waterborne Pathogen Invasion. American Naturalist, 2013, 182, 328-346.	1.0	37
49	Spread of proliferative kidney disease in fish along stream networks: A spatial metacommunity framework. Freshwater Biology, 2018, 63, 114-127.	1.2	37
50	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
51	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
52	Floquet theory for seasonal environmental forcing of spatially explicit waterborne epidemics. Theoretical Ecology, 2014, 7, 351-365.	0.4	33
53	On species persistence-time distributions. Journal of Theoretical Biology, 2012, 303, 15-24.	0.8	32
54	An epidemiological model for proliferative kidney disease in salmonid populations. Parasites and Vectors, 2016, 9, 487.	1.0	32

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55	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
56	Stochastic dynamics of cholera epidemics. Physical Review E, 2010, 81, 051901.	0.8	29
57	SEHR-ECHO v1.0: a Spatially Explicit Hydrologic Response model for ecohydrologic applications. Geoscientific Model Development, 2014, 7, 2733-2746.	1.3	29
58	Biophysical controls on cluster dynamics and architectural differentiation of microbial biofilms in contrasting flow environments. Environmental Microbiology, 2014, 16, 802-812.	1.8	29
59	Micro-Hotspots of Risk in Urban Cholera Epidemics. Journal of Infectious Diseases, 2018, 218, 1164-1168.	1.9	28
60	Evolving biodiversity patterns in changing river networks. Journal of Theoretical Biology, 2019, 462, 418-424.	0.8	28
61	Hydroclimatology of dualâ€peak annual cholera incidence: Insights from a spatially explicit model. Geophysical Research Letters, 2012, 39, .	1.5	27
62	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
63	Near real-time forecasting for cholera decision making in Haiti after Hurricane Matthew. PLoS Computational Biology, 2018, 14, e1006127.	1.5	27
64	Permafrost dynamics and the risk of anthrax transmission: a modelling study. Scientific Reports, 2020, 10, 16460.	1.6	27
65	Inferences from catchment-scale tracer circulation experiments. Journal of Hydrology, 2009, 369, 368-380.	2.3	26
66	The scaling structure of the global road network. Royal Society Open Science, 2017, 4, 170590.	1.1	26
67	The role of aquatic reservoir fluctuations in long-term cholera patterns. Epidemics, 2012, 4, 33-42.	1.5	25
68	On the predictive ability of mechanistic models for the Haitian cholera epidemic. Journal of the Royal Society Interface, 2015, 12, 20140840.	1.5	25
69	On neutral metacommunity patterns of river basins at different scales of aggregation. Water Resources Research, 2009, 45, .	1.7	24
70	On the geographic range of freshwater fish in river basins. Water Resources Research, 2009, 45, .	1.7	24
71	Transport of fluorobenzoate tracers in a vegetated hydrologic control volume: 1. Experimental results. Water Resources Research, 2015, 51, 2773-2792.	1.7	23
72	Conditions for transient epidemics of waterborne disease in spatially explicit systems. Royal Society Open Science, 2019, 6, 181517.	1.1	23

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73	Loss of geomorphic diversity in shallow tidal embayments promoted by storm-surge barriers. Science Advances, 2022, 8, eabm8446.	4.7	23
74	Modeling Key Drivers of Cholera Transmission Dynamics Provides New Perspectives for Parasitology. Trends in Parasitology, 2017, 33, 587-599.	1.5	22
75	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
76	Modeling the coupled dynamics of stream metabolism and microbial biomass. Limnology and Oceanography, 2020, 65, 1573-1593.	1.6	21
77	Modelling human movement in cholera spreading along fluvial systems. Ecohydrology, 2011, 4, 49-55.	1.1	20
78	Optimal control of the spatial allocation of COVID-19 vaccines: Italy as a case study. PLoS Computational Biology, 2022, 18, e1010237.	1.5	19
79	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
80	A minimalist model of extinction and range dynamics of virtual mountain species driven by warming temperatures. PLoS ONE, 2019, 14, e0213775.	1.1	18
81	Rainfall mediations in the spreading of epidemic cholera. Advances in Water Resources, 2013, 60, 34-46.	1.7	17
82	Nonpoint source transport models from empiricism to coherent theoretical frameworks. Ecological Modelling, 2005, 184, 19-35.	1.2	15
83	Seasonality in cholera dynamics: A rainfall-driven model explains the wide range of patterns in endemic areas. Advances in Water Resources, 2017, 108, 357-366.	1.7	15
84	Real-time projections of cholera outbreaks through data assimilation and rainfall forecasting. Advances in Water Resources, 2017, 108, 345-356.	1.7	14
85	Environmental heterogeneity promotes spatial resilience of phototrophic biofilms in streambeds. Biology Letters, 2018, 14, 20180432.	1.0	14
86	The Metabolic Regimes at the Scale of an Entire Stream Network Unveiled Through Sensor Data and Machine Learning. Ecosystems, 2021, 24, 1792-1809.	1.6	14
87	Range of reproduction number estimates for COVID-19 spread. Biochemical and Biophysical Research Communications, 2021, 538, 253-258.	1.0	13
88	Impact of stochastic fluctuations in storageâ€discharge relations on streamflow distributions. Water Resources Research, 2010, 46, .	1.7	12
89	Emergent spatial patterns of competing benthic and pelagic algae in a river network: A parsimonious basin-scale modeling analysis. Water Research, 2021, 193, 116887.	5.3	12
90	Mapping landscape connectivity as a driver of species richness under tectonic and climatic forcing. Earth Surface Dynamics, 2019, 7, 895-910.	1.0	11

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91	Dynamic spatio-temporal patterns of metapopulation occupancy in patchy habitats. Royal Society Open Science, 2021, 8, 201309.	1.1	11
92	Persistence of amphibian metapopulation occupancy in dynamic wetlandscapes. Landscape Ecology, 2022, 37, 695-711.	1.9	9
93	The epidemicity index of recurrent SARS-CoV-2 infections. Nature Communications, 2021, 12, 2752.	5.8	8
94	Potential impacts of precipitation change on largeâ€scale patterns of tree diversity. Water Resources Research, 2010, 46, .	1.7	7
95	A Transmission Model of the 2010 Cholera Epidemic in Haiti. Annals of Internal Medicine, 2011, 155, 403.	2.0	7
96	Catchment Dissolved Organic Carbon Transport: A Modeling Approach Combining Water Travel Times and Reactivity Continuum. Water Resources Research, 2022, 58, .	1.7	7
97	Detection ofVibrio choleraeO1 and O139 in environmental waters of rural Bangladesh: a flow-cytometry-based field trial. Epidemiology and Infection, 2015, 143, 2330-2342.	1.0	6
98	Light and hydrologic variability as drivers of stream biofilm dynamics in a flume experiment. Ecohydrology, 2014, 7, 391-400.	1.1	5
99	A Minimalist Model of Salt-Marsh Vegetation Dynamics Driven by Species Competition and Dispersal. Frontiers in Marine Science, 2022, 9, .	1.2	5
100	SESTET: A spatially explicit stream temperature model based on equilibrium temperature. Hydrological Processes, 2020, 34, 355-369.	1.1	4
101	Sensor-based localization of epidemic sources on human mobility networks. PLoS Computational Biology, 2021, 17, e1008545.	1.5	4
102	Hortonian Scaling of Coupled Hydrological and Biogeochemical Responses Across an Intensively Managed River Basin. Frontiers in Water, 2021, 3, .	1.0	3
103	Optimizing a remotely sensed proxy for plankton biomass in Lake Kivu. International Journal of Remote Sensing, 2014, 35, 5219-5238.	1.3	2
104	Mapping environmental suitability for Anthrax reemergence in the Arctic. Environmental Research Letters, 0, , .	2.2	2
105	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.	1.7	0