Debsunder Dutta

List of Publications by Year
in descending order

74 papers	2,961 citations	136950 32 h-index	175258 52 g-index
83 all docs	83 docs citations	83 times ranked	4049 citing authors

#	Article	IF	Citations
1	The future of hydrology: An evolving science for a changing world. Water Resources Research, 2010, 46, .	4.2	487
2	Ecohydrologic process networks: 1. Identification. Water Resources Research, 2009, 45, .	4.2	154
3	Precipitation Recycling Variability and Ecoclimatological Stabilityâ€"A Study Using NARR Data. Part II: North American Monsoon Region. Journal of Climate, 2008, 21, 5187-5203.	3.2	110
4	Mitigating land loss in coastal Louisiana by controlled diversion of Mississippi River sand. Nature Geoscience, 2012, 5, 534-537.	12.9	100
5	Simultaneous improvement in productivity, water use, and albedo through crop structural modification. Global Change Biology, 2014, 20, 1955-1967.	9.5	88
6	Typology of hydrologic predictability. Water Resources Research, 2011, 47, .	4.2	86
7	Precipitation Recycling in the Indian Subcontinent during Summer Monsoon. Journal of Hydrometeorology, 2014, 15, 2050-2066.	1.9	86
8	Role of Oceanic and Land Moisture Sources and Transport in the Seasonal and Interannual Variability of Summer Monsoon in India. Journal of Climate, 2017, 30, 1839-1859.	3.2	82
9	Kinematic dispersion in stream networks 1. Coupling hydraulic and network geometry. Water Resources Research, 2002, 38, 26-1-26-14.	4.2	77
10	From the Ground to Space: Using Solarâ€Induced Chlorophyll Fluorescence to Estimate Crop Productivity. Geophysical Research Letters, 2020, 47, e2020GL087474.	4.0	75
11	Disentangling Changes in the Spectral Shape of Chlorophyll Fluorescence: Implications for Remote Sensing of Photosynthesis. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 1491-1507.	3.0	73
12	Temporal information partitioning: Characterizing synergy, uniqueness, and redundancy in interacting environmental variables. Water Resources Research, 2017, 53, 5920-5942.	4.2	66
13	Ecohydrologic process networks: 2. Analysis and characterization. Water Resources Research, 2009, 45, .	4.2	65
14	Role of Oceanic and Terrestrial Atmospheric Moisture Sources in Intraseasonal Variability of Indian Summer Monsoon Rainfall. Scientific Reports, 2017, 7, 12729.	3.3	56
15	Three-dimensional volume-averaged soil moisture transport model with a scalable parameterization of subgrid topographic variability. Water Resources Research, 2007, 43, .	4.2	52
16	The influence of photosynthetic acclimation to rising CO₂ and warmer temperatures on leaf and canopy photosynthesis models. Global Biogeochemical Cycles, 2015, 29, 194-206.	4.9	51
17	Impacts of hydraulic redistribution on grassâ€"tree competition vs facilitation in a semiâ€arid savanna. New Phytologist, 2017, 215, 1451-1461.	7.3	51
18	Temporal Information Partitioning Networks (TIPNets): A process network approach to infer ecohydrologic shifts. Water Resources Research, 2017, 53, 5899-5919.	4.2	48

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19	Power law scaling of topographic depressions and their hydrologic connectivity. Geophysical Research Letters, 2014, 41, 1553-1559.	4.0	45
20	Information Driven Ecohydrologic Self-Organization. Entropy, 2010, 12, 2085-2096.	2.2	44
21	Hydrogeomorphological differentiation between floodplains and terraces. Earth Surface Processes and Landforms, 2018, 43, 218-228.	2.5	44
22	Competitive and mutualistic dependencies in multispecies vegetation dynamics enabled by hydraulic redistribution. Water Resources Research, 2012, 48, .	4.2	43
23	Kinematic dispersion in stream networks 2. Scale issues and self-similar network organization. Water Resources Research, 2002, 38, 27-1-27-15.	4.2	42
24	Hydrocomplexity: Addressing water security and emergent environmental risks. Water Resources Research, 2015, 51, 5827-5838.	4.2	42
25	Assessment of Floodplain Vulnerability during Extreme Mississippi River Flood 2011. Environmental Science & Technology, 2014, 48, 2619-2625.	10.0	39
26	Patterns of change in high frequency precipitation variability over North America. Scientific Reports, 2017, 7, 10853.	3.3	39
27	Debatesâ€”Does Information Theory Provide a New Paradigm for Earth Science? Causality, Interaction, and Feedback. Water Resources Research, 2020, 56, e2019WR024940.	4.2	37
28	Numerical simulations of hydraulic redistribution across climates: The role of the root hydraulic conductivities. Water Resources Research, 2015, 51, 8529-8550.	4.2	36
29	Dynamic process connectivity explains ecohydrologic responses to rainfall pulses and drought. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E8604-E8613.	7.1	36
30	Passive regulation of soil biogeochemical cycling by root water transport. Water Resources Research, 2013, 49, 3729-3746.	4.2	35
31	Critical Zone services as environmental assessment criteria in intensively managed landscapes. Earth's Future, 2017, 5, 617-632.	6.3	34
32	Functional Topology of Evolving Urban Drainage Networks. Water Resources Research, 2017, 53, 8966-8979.	4.2	34
33	Predicting the direct and indirect impacts of climate change on malaria in coastal Kenya. PLoS ONE, 2019, 14, e0211258.	2.5	33
34	Variability, Feedback, and Cooperative Process Dynamics: Elements of a Unifying Hydrologic Theory. Geography Compass, 2007, 1, 1338-1360.	2.7	31
35	The Intensively Managed Landscape Critical Zone Observatory: A Scientific Testbed for Understanding Critical Zone Processes in Agroecosystems. Vadose Zone Journal, 2018, 17, 1-21.	2.2	31
36	Signatures of Hydrologic Function Across the Critical Zone Observatory Network. Water Resources Research, 2021, 57, e2019WR026635.	4.2	31

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37	Emergence of selfâ€similar tree network organization. Complexity, 2008, 13, 30-37.	1.6	29
38	Assessing the value of seasonal climate forecast information through an endâ€toâ€end forecasting framework: Application to U.S. 2012 drought in central Illinois. Water Resources Research, 2014, 50, 6592-6609.	4.2	28
39	Hydraulic geometry and the nonlinearity of the network instantaneous response. Water Resources Research, 2004, 40, .	4.2	27
40	Interaction Between Ecohydrologic Dynamics and Microtopographic Variability Under Climate Change. Water Resources Research, 2017, 53, 8383-8403.	4.2	24
41	Impact of Hydraulic Redistribution on Multispecies Vegetation Water Use in a Semiarid Savanna Ecosystem: An Experimental and Modeling Synthesis. Water Resources Research, 2018, 54, 4009-4027.	4.2	24
42	Impacts of Subsurface Tile Drainage on Ageâ€"Concentration Dynamics of Inorganic Nitrogen in Soil. Water Resources Research, 2019, 55, 1470-1489.	4.2	24
43	Optimal inverse estimation of ecosystem parameters from observations of carbon and energy fluxes. Biogeosciences, 2019, 16, 77-103.	3.3	23
44	Mean age distribution of inorganic soilâ€nitrogen. Water Resources Research, 2016, 52, 5516-5536.	4.2	20
45	Characterizing Vegetation Canopy Structure Using Airborne Remote Sensing Data. IEEE Transactions on Geoscience and Remote Sensing, 2017, 55, 1160-1178.	6.3	20
46	Decomposing reflectance spectra to track gross primary production in a subalpine evergreen forest. Biogeosciences, 2020, 17, 4523-4544.	3.3	20
47	Role of Microâ€Topographic Variability on the Distribution of Inorganic Soilâ€Nitrogen Age in Intensively Managed Landscape. Water Resources Research, 2017, 53, 8404-8422.	4.2	18
48	Wetlandscape Fractal Topography. Geophysical Research Letters, 2018, 45, 6983-6991.	4.0	18
49	Modeling the Role of Root Exudation in Critical Zone Nutrient Dynamics. Water Resources Research, 2020, 56, e2019WR026606.	4.2	18
50	Tracking Seasonal and Interannual Variability in Photosynthetic Downregulation in Response to Water Stress at a Temperate Deciduous Forest. Journal of Geophysical Research G: Biogeosciences, 2020, 125, e2018JG005002.	3.0	17
51	Antecedent Conditions Control Thresholds of Tileâ€Runoff Generation and Nitrogen Export in Intensively Managed Landscapes. Water Resources Research, 2022, 58, .	4.2	15
52	On the Feasibility of Characterizing Soil Properties From AVIRIS Data. IEEE Transactions on Geoscience and Remote Sensing, 2015, 53, 5133-5147.	6.3	14
53	Stochastic lattice-based modelling of malaria dynamics. Malaria Journal, 2018, 17, 250.	2.3	12
54	Interactions of information transfer along separable causal paths. Physical Review E, 2018, 97, 042310.	2.1	11

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55	Threeâ€Ðimensional Modeling of the Coevolution of Landscape and Soil Organic Carbon. Water Resources Research, 2019, 55, 1218-1241.	4.2	11
56	Comment on â€œClimate and agricultural land use change impacts on streamflow in the upper midwestern United Statesâ€•by Satish C. Gupta et al.. Water Resources Research, 2016, 52, 7536-7539.	4.2	10
57	Using Information Flow for Whole System Understanding From Component Dynamics. Water Resources Research, 2019, 55, 8305-8329.	4.2	10
58	Debatesâ€”Does Information Theory Provide a New Paradigm for Earth Science?. Water Resources Research, 2020, 56, e2019WR026398.	4.2	10
59	Power-Law Behavior in Geometric Characteristics ofÂFull Binary Trees. Journal of Statistical Physics, 2011, 142, 862-878.	1.2	9
60	A Changing Climatology of Precipitation Persistence across the United States Using Information-Based Measures. Journal of Hydrometeorology, 2019, 20, 1649-1666.	1.9	9
61	Sustainability of soil organic carbon in consolidated gully land in Chinaâ€™s Loess Plateau. Scientific Reports, 2020, 10, 16927.	3.3	8
62	Hydraulic redistribution buffers climate variability and regulates grassâ€tree interactions in a semiarid riparian savanna. Ecohydrology, 2021, 14, e2271.	2.4	7
63	Radiocarbon and Stable Carbon Isotopes of Labile and Inert Organic Carbon in the Critical Zone Observatory in Illinois, USA. Radiocarbon, 2018, 60, 989-999.	1.8	6
64	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
65	Effect of Spatial Filtering on Characterizing Soil Properties From Imaging Spectrometer Data. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2017, 10, 4149-4170.	4.9	4
66	Brown Dog. , 2018, , .		4
67	Characterizing relative degrees of clumping structure in vegetation canopy using waveform LiDAR. Remote Sensing of Environment, 2019, 232, 111281.	11.0	4
68	A Framework for Global Characterization of Soil Properties Using Repeat Hyperspectral Satellite Data. IEEE Transactions on Geoscience and Remote Sensing, 2019, 57, 3308-3323.	6.3	4
69	Understanding Hydrological Cycle Dynamics Due to Changing Land Use and Land Cover: Congo Basin Case Study. , 2008, , .		3
70	Discerning the thermodynamic feasibility of the spontaneous coexistence of multiple functional vegetation groups. Scientific Reports, 2020, 10, 18321.	3.3	3
71	Bundled Causal History Interaction. Entropy, 2020, 22, 360.	2.2	3
72	Hydrologic Dispersion in Fluvial Networks. , 2008, , 307-335.		2

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73	Editorial: Building on the legacy of Water Resources Research. Water Resources Research, 2009, 45, .	4.2	2
74	REWTCrunch: A Modeling Framework for Vegetation Induced Reactive Zone Processes in the Critical Zone. Journal of Geophysical Research G: Biogeosciences, 2022, 127, .	3.0	2