

Binayak Mohanty

List of Publications by Year in descending order

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Version: 2024-02-01

125
papers

5,955
citations

71102

41
h-index

82547

72
g-index

132
all docs

132
docs citations

132
times ranked

5423
citing authors

#	ARTICLE	IF	CITATIONS
1	Soil microorganisms regulate extracellular enzyme production to maximize their growth rate. <i>Biogeochemistry</i> , 2022, 158, 303-312.	3.5	18
2	Global Surface Soil Moisture Drydown Patterns. <i>Water Resources Research</i> , 2021, 57, .	4.2	13
3	Investigating the capability of estimating soil thermal conductivity using topographical attributes for the Southern Great Plains, USA. <i>Soil and Tillage Research</i> , 2021, 206, 104811.	5.6	11
4	Effects of Water Retention Curves and Permeability Equations on the Prediction of Relative Air Permeability. <i>Geophysical Research Letters</i> , 2021, 48, e2021GL092459.	4.0	7
5	A semianalytical solution of the modified two-dimensional diffusive root growth model. <i>Vadose Zone Journal</i> , 2021, 20, e20132.	2.2	0
6	Toward Developing a Generalizable Pedotransfer Function for Saturated Hydraulic Conductivity Using Transfer Learning and Predictor Selector Algorithm. <i>Water Resources Research</i> , 2021, 57, e2020WR028862.	4.2	11
7	Global Flash Drought Monitoring Using Surface Soil Moisture. <i>Water Resources Research</i> , 2021, 57, e2021WR029901.	4.2	22
8	Characterization of groundwater variability using hydrological, geological, and climatic factors in data-scarce tropical savanna region of India. <i>Journal of Hydrology: Regional Studies</i> , 2021, 37, 100887.	2.4	4
9	Soil Moisture Retrieval Using SMAP L-Band Radiometer and RISAT-1 C-Band SAR Data in the Paddy Dominated Tropical Region of India. <i>IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing</i> , 2021, 14, 10644-10664.	4.9	6
10	An Explicit Scheme to Represent the Bidirectional Hydrologic Exchanges Between the Vadose Zone, Phreatic Aquifer, and River. <i>Water Resources Research</i> , 2020, 56, e2020WR027571.	4.2	6
11	On the Radiative Transfer Model for Soil Moisture across Space, Time and Hydro-Climates. <i>Remote Sensing</i> , 2020, 12, 2645.	4.0	2
12	Multiscale Surface Roughness for Improved Soil Moisture Estimation. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2020, 58, 5264-5276.	6.3	15
13	ECOSTRESS: NASA's Next Generation Mission to Measure Evapotranspiration From the International Space Station. <i>Water Resources Research</i> , 2020, 56, e2019WR026058.	4.2	220
14	Context-Aware Deep Representation Learning for Geo-Spatiotemporal Analysis. , 2020, , .		4
15	Infiltration from the Pedon to Global Grid Scales: An Overview and Outlook for Land Surface Modeling. <i>Vadose Zone Journal</i> , 2019, 18, 1-53.	2.2	56
16	Validation of SMAP Soil Moisture Products Using Ground-Based Observations for the Paddy Dominated Tropical Region of India. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , 2019, 57, 8479-8491.	6.3	25
17	Gap Filling of High-Resolution Soil Moisture for SMAP/Sentinel-1: A Two-Layer Machine Learning-Based Framework. <i>Water Resources Research</i> , 2019, 55, 6986-7009.	4.2	35
18	Multiscale Data Fusion for Surface Soil Moisture Estimation: A Spatial Hierarchical Approach. <i>Water Resources Research</i> , 2019, 55, 10443-10465.	4.2	6

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19	Prediction of Relative Air Permeability of Porous Media With Weibull Pore Size Distribution. <i>Water Resources Research</i> , 2019, 55, 10037-10049.	4.2	9
20	Spatiotemporal Analysis of Soil Moisture and Optimal Sampling Design for Regional-scale Soil Moisture Estimation in a Tropical Watershed of India. <i>Water Resources Research</i> , 2019, 55, 2057-2078.	4.2	28
21	Hillslope Hydrology in Global Change Research and Earth System Modeling. <i>Water Resources Research</i> , 2019, 55, 1737-1772.	4.2	281
22	A Nonstationary Geostatistical Framework for Soil Moisture Prediction in the Presence of Surface Heterogeneity. <i>Water Resources Research</i> , 2019, 55, 729-753.	4.2	14
23	Estimating soil water characteristic curve using landscape features and soil thermal properties. <i>Soil and Tillage Research</i> , 2019, 189, 1-14.	5.6	13
24	A Nomograph to Incorporate Geophysical Heterogeneity in Soil Moisture Downscaling. <i>Water Resources Research</i> , 2019, 55, 34-54.	4.2	11
25	Upscaling the Coupled Water and Heat Transport in the Shallow Subsurface. <i>Water Resources Research</i> , 2018, 54, 995-1012.	4.2	6
26	Development of non-parametric evolutionary algorithm for predicting soil moisture dynamics. <i>Journal of Hydrology</i> , 2018, 564, 208-221.	5.4	7
27	Development and analysis of the Soil Water Infiltration Global database. <i>Earth System Science Data</i> , 2018, 10, 1237-1263.	9.9	85
28	A physically based hydrological connectivity algorithm for describing spatial patterns of soil moisture in the unsaturated zone. <i>Journal of Geophysical Research D: Atmospheres</i> , 2017, 122, 2096-2114.	3.3	16
29	Effect of observation scale on remote sensing based estimates of evapotranspiration in a semi-arid row cropped orchard environment. <i>Precision Agriculture</i> , 2017, 18, 762-778.	6.0	12
30	Space-time modeling of soil moisture. <i>Advances in Water Resources</i> , 2017, 109, 343-354.	3.8	9
31	Soil Moisture Remote Sensing: State-of-the-art Science. <i>Vadose Zone Journal</i> , 2017, 16, 1-9.	2.2	200
32	A Framework for Assessing Soil Moisture Deficit and Crop Water Stress at Multiple Space and Time Scales Under Climate Change Scenarios Using Model Platform, Satellite Remote Sensing, and Decision Support System. <i>Springer Remote Sensing/photogrammetry</i> , 2017, , 173-196.	0.4	1
33	Multi-scale surface roughness model for soil moisture retrieval. , 2017, , .		0
34	Hot Spots and Persistence of Nitrate in Aquifers Across Scales. <i>Entropy</i> , 2016, 18, 25.	2.2	21
35	Global sensitivity analysis and calibration of parameters for a physically-based agro-hydrological model. <i>Environmental Modelling and Software</i> , 2016, 83, 88-102.	4.5	34
36	Modeling Onsite Wastewater Treatment Systems in a Coastal Texas Watershed. <i>Water, Air, and Soil Pollution</i> , 2016, 227, 1.	2.4	4

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37	Influence of lateral subsurface flow and connectivity on soil water storage in land surface modeling. <i>Journal of Geophysical Research D: Atmospheres</i> , 2016, 121, 704-721.	3.3	27
38	Land surface controls on near surface soil moisture dynamics: Traversing remote sensing footprints. <i>Water Resources Research</i> , 2016, 52, 6365-6385.	4.2	40
39	Impact of the Linked Surface Water-Soil Water-Groundwater System on Transport of E. coli in the Subsurface. <i>Water, Air, and Soil Pollution</i> , 2016, 227, 1.	2.4	25
40	Global sensitivity analysis of the radiative transfer model. <i>Water Resources Research</i> , 2015, 51, 2428-2443.	4.2	25
41	Effective soil moisture estimate and its uncertainty using multimodel simulation based on Bayesian Model Averaging. <i>Journal of Geophysical Research D: Atmospheres</i> , 2015, 120, 8023-8042.	3.3	30
42	Effective parameterizations of three nonwetting phase relative permeability models. <i>Water Resources Research</i> , 2015, 51, 6520-6531.	4.2	15
43	An integrated Markov chain Monte Carlo algorithm for upscaling hydrological and geochemical parameters from column to field scale. <i>Science of the Total Environment</i> , 2015, 512-513, 428-443.	8.0	11
44	Evidence of Aqueous Iron Sulfide Clusters in the Vadose Zone. <i>Vadose Zone Journal</i> , 2014, 13, 1-12.	2.2	5
45	Evaluation of soil water dynamics and crop yield under furrow irrigation with a two-dimensional flow and crop growth coupled model. <i>Agricultural Water Management</i> , 2014, 141, 10-22.	5.6	39
46	Temporal dynamics of biogeochemical processes at the Norman Landfill site. <i>Water Resources Research</i> , 2013, 49, 6909-6926.	4.2	21
47	Estimating <i>Escherichia coli</i> loads in streams based on various physical, chemical, and biological factors. <i>Water Resources Research</i> , 2013, 49, 2896-2906.	4.2	24
48	Reduction of Feasible Parameter Space of the Inverted Soil Hydraulic Parameter Sets for Kosugi Model. <i>Soil Science</i> , 2013, 178, 267-280.	0.9	20
49	An unmixing algorithm for remotely sensed soil moisture. <i>Water Resources Research</i> , 2013, 49, 408-425.	4.2	27
50	Estimating Effective Soil Hydraulic Properties Using Spatially Distributed Soil Moisture and Evapotranspiration. <i>Vadose Zone Journal</i> , 2013, 12, 1-16.	2.2	15
51	Comment on "A simulation analysis of the advective effect on evaporation using a two-phase heat and mass flow model" by Yijian Zeng, Zhongbo Su, Li Wan, and Jun Wen. <i>Water Resources Research</i> , 2013, 49, 7831-7835.	4.2	10
52	Development of a deterministic downscaling algorithm for remote sensing soil moisture footprint using soil and vegetation classifications. <i>Water Resources Research</i> , 2013, 49, 6208-6228.	4.2	45
53	Weighted objective function selector algorithm for parameter estimation of SVAT models with remote sensing data. <i>Water Resources Research</i> , 2013, 49, 6959-6978.	4.2	13
54	Evolution of physical controls for soil moisture in humid and subhumid watersheds. <i>Water Resources Research</i> , 2013, 49, 1244-1258.	4.2	51

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55	Soil Hydraulic Property Estimation Using Remote Sensing: A Review. <i>Vadose Zone Journal</i> , 2013, 12, 1-9.	2.2	50
56	Remote Sensing for Vadose Zone Hydrology—A Synthesis from the Vantage Point. <i>Vadose Zone Journal</i> , 2013, 12, 1-6.	2.2	16
57	Uncertainties of Water Fluxes in Soil—Vegetation—Atmosphere Transfer Models: Inverting Surface Soil Moisture and Evapotranspiration Retrieved from Remote Sensing. <i>Vadose Zone Journal</i> , 2012, 11, vzj2011.0167.	2.2	24
58	A comparative study of multiple approaches to soil hydraulic parameter scaling applied at the hillslope scale. <i>Water Resources Research</i> , 2012, 48, .	4.2	7
59	Upscaling sparse ground-based soil moisture observations for the validation of coarse-resolution satellite soil moisture products. <i>Reviews of Geophysics</i> , 2012, 50, .	23.0	493
60	Uncertainty in dual permeability model parameters for structured soils. <i>Water Resources Research</i> , 2012, 48, WR010500.	4.2	35
61	On topographic controls of soil hydraulic parameter scaling at hillslope scales. <i>Water Resources Research</i> , 2012, 48, .	4.2	29
62	A topography-based scaling algorithm for soil hydraulic parameters at hillslope scales: Field testing. <i>Water Resources Research</i> , 2012, 48, .	4.2	17
63	Upscaling Soil Hydraulic Parameters in the Picacho Mountain Region Using Bayesian Neural Networks. <i>Transactions of the ASABE</i> , 2012, 55, 463-473.	1.1	8
64	Soil hydraulic properties in one-dimensional layered soil profile using layer-specific soil moisture assimilation scheme. <i>Water Resources Research</i> , 2012, 48, .	4.2	27
65	Spatiotemporal analyses of soil moisture from point to footprint scale in two different hydroclimatic regions. <i>Water Resources Research</i> , 2011, 47, .	4.2	61
66	Inverse estimation of parameters for multidomain flow models in soil columns with different macropore densities. <i>Water Resources Research</i> , 2011, 47, 2010WR009451.	4.2	68
67	Enhanced Biogeochemical Cycling and Subsequent Reduction of Hydraulic Conductivity Associated with Soil-Layer Interfaces in the Vadose Zone. <i>Journal of Environmental Quality</i> , 2011, 40, 1941-1954.	2.0	22
68	Enhancing PTFs with remotely sensed data for multi-scale soil water retention estimation. <i>Journal of Hydrology</i> , 2011, 399, 201-211.	5.4	44
69	Profile Soil Moisture Across Spatial Scales Under Different Hydroclimatic Conditions. <i>Soil Science</i> , 2010, 175, 315-319.	0.9	15
70	Physical controls of near-surface soil moisture across varying spatial scales in an agricultural landscape during SMEX02. <i>Water Resources Research</i> , 2010, 46, .	4.2	95
71	Characterization of effective saturated hydraulic conductivity in an agricultural field using Karhunen-Loève expansion with the Markov chain Monte Carlo technique. <i>Water Resources Research</i> , 2010, 46, .	4.2	14
72	Near-surface soil moisture assimilation for quantifying effective soil hydraulic properties using genetic algorithms: 2. Using airborne remote sensing during SGP97 and SMEX02. <i>Water Resources Research</i> , 2009, 45, .	4.2	40

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73	Modeling and assimilation of root zone soil moisture using remote sensing observations in Walnut Gulch Watershed during SMEX04. Remote Sensing of Environment, 2008, 112, 415-429.	11.0	81
74	Temporal dynamics of PSR-based soil moisture across spatial scales in an agricultural landscape during SMEX02: A wavelet approach. Remote Sensing of Environment, 2008, 112, 522-534.	11.0	52
75	Near-surface soil moisture assimilation for quantifying effective soil hydraulic properties using genetic algorithm: 1. Conceptual modeling. Water Resources Research, 2008, 44, .	4.2	53
76	Parameter conditioning with a noisy Monte Carlo genetic algorithm for estimating effective soil hydraulic properties from space. Water Resources Research, 2008, 44, .	4.2	25
77	A Markov chain Monte Carlo algorithm for upscaled soil-vegetation-atmosphere-transfer modeling to evaluate satellite-based soil moisture measurements. Water Resources Research, 2008, 44, .	4.2	14
78	Subsurface stormflow is important in semiarid karst shrublands. Geophysical Research Letters, 2008, 35, .	4.0	58
79	Multiscale Bayesian neural networks for soil water content estimation. Water Resources Research, 2008, 44, .	4.2	27
80	Characterization of Backscatter by Surface Features in L-Band Active Microwave Remote Sensing of Soil Moisture. , 2008, , .		2
81	Near-surface Soil Moisture Assimilation for Quantifying Effective Soil Hydraulic Properties under Different Hydroclimatic Conditions. Vadose Zone Journal, 2008, 7, 39-52.	2.2	41
82	Effective Hydraulic Parameters in Horizontally and Vertically Heterogeneous Soils for Steady-State Land-atmosphere Interaction. Journal of Hydrometeorology, 2007, 8, 715-729.	1.9	50
83	Multiscale Pedotransfer Functions for Soil Water Retention. Vadose Zone Journal, 2007, 6, 868-878.	2.2	44
84	Enhancing Water Cycle Measurements for Future Hydrologic Research. Bulletin of the American Meteorological Society, 2007, 88, 669-676.	3.3	17
85	Numerical Analysis of Coupled Water, Vapor, and Heat Transport in the Vadose Zone. Vadose Zone Journal, 2006, 5, 784-800.	2.2	400
86	Inverse Dual-permeability Modeling of Preferential Water Flow in a Soil Column and Implications for Field-scale Solute Transport. Vadose Zone Journal, 2006, 5, 59-76.	2.2	55
87	Effective scaling factor for transient infiltration in heterogeneous soils. Journal of Hydrology, 2006, 319, 96-108.	5.4	31
88	Soil Hydraulic Conductivities and their Spatial and Temporal Variations in a Vertisol. Soil Science Society of America Journal, 2006, 70, 1872-1881.	2.2	87
89	Impacts of Juniper Vegetation and Karst Geology on Subsurface Flow Processes in the Edwards Plateau, Texas. Vadose Zone Journal, 2006, 5, 1076-1085.	2.2	45
90	On the Effective Averaging Schemes of Hydraulic Properties at the Landscape Scale. Vadose Zone Journal, 2006, 5, 308-316.	2.2	26

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91	Including Topography and Vegetation Attributes for Developing Pedotransfer Functions. Soil Science Society of America Journal, 2006, 70, 1430-1440.	2.2	68
92	Root Zone Soil Moisture Assessment Using Remote Sensing and Vadose Zone Modeling. Vadose Zone Journal, 2006, 5, 296-307.	2.2	107
93	Analysis of Temperature Effects on Tension Infiltrometry of Low Permeability Materials. Vadose Zone Journal, 2005, 4, 481-487.	2.2	2
94	Water flow processes in a soil column with a cylindrical macropore: Experiment and hierarchical modeling. Water Resources Research, 2005, 41, .	4.2	44
95	Improved Tension Infiltrometer for Measuring Low Fluid Flow Rates in Unsaturated Fractured Rock. Vadose Zone Journal, 2005, 4, 885-890.	2.2	12
96	Inverse Mobile-Immobile Modeling of Transport During Transient Flow: Effects of Between-Domain Transfer and Initial Water Content. Vadose Zone Journal, 2004, 3, 1309-1321.	2.2	28
97	Correspondence and Upscaling of Hydraulic Functions for Steady-State Flow in Heterogeneous Soils. Vadose Zone Journal, 2004, 3, 527-533.	2.2	34
98	SMEX02: Field scale variability, time stability and similarity of soil moisture. Remote Sensing of Environment, 2004, 92, 436-446.	11.0	305
99	Numerical evaluation of a second-order water transfer term for variably saturated dual-permeability models. Water Resources Research, 2004, 40, .	4.2	36
100	Correspondence and Upscaling of Hydraulic Functions for Steady-State Flow in Heterogeneous Soils. Vadose Zone Journal, 2004, 3, 527-533.	2.2	13
101	Soil Hydraulic Parameter Upscaling for Steady-State Flow with Root Water Uptake. Vadose Zone Journal, 2004, 3, 1464-1470.	2.2	18
102	Effective hydraulic parameters for steady state vertical flow in heterogeneous soils. Water Resources Research, 2003, 39, .	4.2	44
103	Lateral Water Diffusion in an Artificial Macroporous System: Modeling and Experimental Evidence. Vadose Zone Journal, 2003, 2, 212-221.	2.2	31
104	Analytical solutions for steady state vertical infiltration. Water Resources Research, 2002, 38, 20-1-20-5.	4.2	26
105	Comparison of alternative methods for deriving hydraulic properties and scaling factors from single-disc tension infiltrometer measurements. Water Resources Research, 2002, 38, 25-1-25-14.	4.2	27
106	Upscaling of soil hydraulic properties for steady state evaporation and infiltration. Water Resources Research, 2002, 38, 17-1-17-13.	4.2	46
107	Soil property database: Southern Great Plains 1997 Hydrology Experiment. Water Resources Research, 2002, 38, 5-1-5-7.	4.2	49
108	Spatial Averaging of van Genuchten Hydraulic Parameters for Steady-State Flow in Heterogeneous Soils: A Numerical Study. Vadose Zone Journal, 2002, 1, 261-272.	2.2	25

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109	Spatial Averaging of van Genuchten Hydraulic Parameters for Steady-State Flow in Heterogeneous Soils: A Numerical Study. <i>Vadose Zone Journal</i> , 2002, 1, 261-272.	2.2	70
110	Spatial Averaging of van Genuchten Hydraulic Parameters for Steady-State Flow in Heterogeneous Soils. <i>Vadose Zone Journal</i> , 2002, 1, 261.	2.2	8
111	Saturated hydraulic conductivity and soil water retention properties across a soil-slope transition. <i>Water Resources Research</i> , 2000, 36, 3311-3324.	4.2	66
112	Evolution of soil moisture spatial structure in a mixed vegetation pixel during the Southern Great Plains 1997 (SGP97) Hydrology Experiment. <i>Water Resources Research</i> , 2000, 36, 3675-3686.	4.2	82
113	Analysis and mapping of field-scale soil moisture variability using high-resolution, ground-based data during the Southern Great Plains 1997 (SGP97) Hydrology Experiment. <i>Water Resources Research</i> , 2000, 36, 1023-1031.	4.2	91
114	Scaling hydraulic properties of a macroporous soil. <i>Water Resources Research</i> , 1999, 35, 1927-1931.	4.2	18
115	Preferential transport of nitrate to a tile drain in an intermittent-flood-irrigated field: Model development and experimental evaluation. <i>Water Resources Research</i> , 1998, 34, 1061-1076.	4.2	59
116	Scaling of near-saturated hydraulic conductivity measured using disc infiltrometers. <i>Water Resources Research</i> , 1998, 34, 1195-1205.	4.2	39
117	Impact of Saturated Hydraulic Conductivity on the Prediction of Tile Flow. <i>Soil Science Society of America Journal</i> , 1998, 62, 1522-1529.	2.2	17
118	New piecewise-continuous hydraulic functions for modeling preferential flow in an intermittent-flood-irrigated field. <i>Water Resources Research</i> , 1997, 33, 2049-2063.	4.2	126
119	Spatial analysis of saturated hydraulic conductivity in a soil with macropores. <i>Soil and Tillage Research</i> , 1997, 10, 115-131.	0.4	142
120	SPATIAL VARIABILITY OF HYDRAULIC PROPERTIES IN A MULTI-LAYERED SOIL PROFILE. <i>Soil Science</i> , 1996, 161, 167-181.	0.9	142
121	INFILTRATION AND MACROPOROSITY UNDER A ROW CROP AGRICULTURAL FIELD IN A GLACIAL TILL SOIL 1. <i>Soil Science</i> , 1996, 161, 205-213.	0.9	41
122	Spatial variability of residual nitrate-nitrogen under two tillage systems in central Iowa: A composite three-dimensional resistant and exploratory approach. <i>Water Resources Research</i> , 1994, 30, 237-251.	4.2	35
123	Spatial analysis of hydraulic conductivity measured using disc infiltrometers. <i>Water Resources Research</i> , 1994, 30, 2489-2498.	4.2	138
124	Comparison of Saturated Hydraulic Conductivity Measurement Methods for a Glacial Till Soil. <i>Soil Science Society of America Journal</i> , 1994, 58, 672-677.	2.2	107
125	A Robust-Resistant Approach to Interpret Spatial Behavior of Saturated Hydraulic Conductivity of a Glacial Till Soil Under No-Tillage System. <i>Water Resources Research</i> , 1991, 27, 2979-2992.	4.2	31