

Scott B Jones

List of Publications by Year in descending order

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123
papers

5,264
citations

101543

36
h-index

91884

69
g-index

129
all docs

129
docs citations

129
times ranked

5323
citing authors

#	ARTICLE	IF	CITATIONS
1	Soil Moisture Measurement for Ecological and Hydrological Watershed-Scale Observatories: A Review. <i>Vadose Zone Journal</i> , 2008, 7, 358-389.	2.2	811
2	Ground, Proximal, and Satellite Remote Sensing of Soil Moisture. <i>Reviews of Geophysics</i> , 2019, 57, 530-616.	23.0	307
3	Time domain reflectometry measurement principles and applications. <i>Hydrological Processes</i> , 2002, 16, 141-153.	2.6	278
4	The optical trapezoid model: A novel approach to remote sensing of soil moisture applied to Sentinel-2 and Landsat-8 observations. <i>Remote Sensing of Environment</i> , 2017, 198, 52-68.	11.0	251
5	Particle shape effects on the effective permittivity of anisotropic or isotropic media consisting of aligned or randomly oriented ellipsoidal particles. <i>Water Resources Research</i> , 2000, 36, 2821-2833.	4.2	191
6	A linear physically-based model for remote sensing of soil moisture using short wave infrared bands. <i>Remote Sensing of Environment</i> , 2015, 164, 66-76.	11.0	173
7	Standardizing Characterization of Electromagnetic Water Content Sensors: Part 2. Evaluation of Seven Sensing Systems. <i>Vadose Zone Journal</i> , 2005, 4, 1059-1069.	2.2	154
8	Evaluation of Standard Calibration Functions for Eight Electromagnetic Soil Moisture Sensors. <i>Vadose Zone Journal</i> , 2013, 12, 1-16.	2.2	148
9	Mapping soil moisture with the OPTical TRAPEzoid Model (OPTRAM) based on long-term MODIS observations. <i>Remote Sensing of Environment</i> , 2018, 211, 425-440.	11.0	105
10	Precise irrigation scheduling for turfgrass using a subsurface electromagnetic soil moisture sensor. <i>Agricultural Water Management</i> , 2006, 84, 153-165.	5.6	103
11	Standardizing Characterization of Electromagnetic Water Content Sensors: Part 1. Methodology. <i>Vadose Zone Journal</i> , 2005, 4, 1048-1058.	2.2	99
12	Comparing Bulk Soil Electrical Conductivity Determination Using the DUALEM-1S and EM38-EDD Electromagnetic Induction Instruments. <i>Soil Science Society of America Journal</i> , 2007, 71, 189-196.	2.2	92
13	On the Value of Soil Resources in the Context of Natural Capital and Ecosystem Service Delivery. <i>Soil Science Society of America Journal</i> , 2014, 78, 685-700.	2.2	91
14	The Grape Remote Sensing Atmospheric Profile and Evapotranspiration Experiment. <i>Bulletin of the American Meteorological Society</i> , 2018, 99, 1791-1812.	3.3	88
15	Imaging of hill-slope soil moisture wetting patterns in a semi-arid oak savanna catchment using time-lapse electromagnetic induction. <i>Journal of Hydrology</i> , 2012, 416-417, 39-49.	5.4	87
16	A time domain transmission sensor with TDR performance characteristics. <i>Journal of Hydrology</i> , 2005, 314, 235-245.	5.4	85
17	Continuous Soil Carbon Dioxide and Oxygen Measurements and Estimation of Gradient-Based Gaseous Flux. <i>Vadose Zone Journal</i> , 2005, 4, 1161-1169.	2.2	77
18	Spatially characterizing apparent electrical conductivity and water content of surface soils with time domain reflectometry. <i>Computers and Electronics in Agriculture</i> , 2005, 46, 239-261.	7.7	60

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19	Global environmental changes impact soil hydraulic functions through biophysical feedbacks. <i>Global Change Biology</i> , 2019, 25, 1895-1904.	9.5	60
20	Toward sustainable soil and water resources use in China's highly erodible semi-arid loess plateau. <i>Geoderma</i> , 2010, 155, 93-100.	5.1	57
21	Microgravity effects on water flow and distribution in unsaturated porous media: Analyses of flight experiments. <i>Water Resources Research</i> , 1999, 35, 929-942.	4.2	56
22	A Physically Derived Water Content/Permittivity Calibration Model for Coarse-textured, Layered Soils. <i>Soil Science Society of America Journal</i> , 2005, 69, 1372-1378.	2.2	56
23	Estimation of Soil Clay Content from Hygroscopic Water Content Measurements. <i>Soil Science Society of America Journal</i> , 2012, 76, 1529-1535.	2.2	56
24	On the effective measurement frequency of time domain reflectometry in dispersive and nonconductive dielectric materials. <i>Water Resources Research</i> , 2005, 41, .	4.2	55
25	Frequency Domain Analysis for Extending Time Domain Reflectometry Water Content Measurement in Highly Saline Soils. <i>Soil Science Society of America Journal</i> , 2004, 68, 1568-1577.	2.2	54
26	Soil Water Repellency: A Method of Soil Moisture Sequestration in Pinyon-Juniper Woodland. <i>Soil Science Society of America Journal</i> , 2010, 74, 624-634.	2.2	54
27	A Review of Advances in Dielectric and Electrical Conductivity Measurement in Soils Using Time Domain Reflectometry. <i>Vadose Zone Journal</i> , 2003, 2, 444.	2.2	54
28	Experimental evidence for drought induced alternative stable states of soil moisture. <i>Scientific Reports</i> , 2016, 6, 20018.	3.3	49
29	Measured and Modeled Soil Moisture Compared with Cosmic-Ray Neutron Probe Estimates in a Mixed Forest. <i>Vadose Zone Journal</i> , 2014, 13, 1-13.	2.2	48
30	Soil water depletion and recharge under different land cover in China's Loess Plateau. <i>Ecohydrology</i> , 2016, 9, 396-406.	2.4	47
31	Numerical evaluation of subsurface soil water evaporation derived from sensible heat balance. <i>Water Resources Research</i> , 2011, 47, .	4.2	43
32	Advancing NASA's AirMOSS P-Band Radar Root Zone Soil Moisture Retrieval Algorithm via Incorporation of Richards Equation. <i>Remote Sensing</i> , 2017, 9, 17.	4.0	41
33	Eco-Geophysical Imaging of Watershed-scale Soil Patterns Links with Plant Community Spatial Patterns. <i>Vadose Zone Journal</i> , 2008, 7, 1132-1138.	2.2	40
34	Column-scale unsaturated hydraulic conductivity estimates in coarse-textured homogeneous and layered soils derived under steady-state evaporation from a water table. <i>Journal of Hydrology</i> , 2014, 519, 1238-1248.	5.4	38
35	A review of time domain reflectometry (TDR) applications in porous media. <i>Advances in Agronomy</i> , 2021, 168, 83-155.	5.2	38
36	Design of Porous Media for Optimal Gas and Liquid Fluxes to Plant Roots. <i>Soil Science Society of America Journal</i> , 1998, 62, 563-573.	2.2	37

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37	Particle size effects on soil reflectance explained by an analytical radiative transfer model. Remote Sensing of Environment, 2018, 210, 375-386.	11.0	37
38	Measurement and approximate critical path analysis of the pore-scale-induced anisotropy factor of an unsaturated porous medium. Water Resources Research, 2001, 37, 2929-2942.	4.2	36
39	Surface area, geometrical and configurational effects on permittivity of porous media. Journal of Non-Crystalline Solids, 2002, 305, 247-254.	3.1	36
40	A binary mixing model for characterizing stony-soil water retention. Agricultural and Forest Meteorology, 2017, 244-245, 1-8.	4.8	35
41	An analytical model for estimation of land surface net water flux from near-surface soil moisture observations. Journal of Hydrology, 2019, 570, 26-37.	5.4	35
42	Gas Diffusion Measurement and Modeling in Coarse-textured Porous Media. Vadose Zone Journal, 2003, 2, 602-610.	2.2	34
43	A novel analytical solution to steady-state evaporation from porous media. Water Resources Research, 2012, 48, .	4.2	34
44	Modeled effects on permittivity measurements of water content in high surface area porous media. Physica B: Condensed Matter, 2003, 338, 284-290.	2.7	32
45	A smart-vision algorithm for counting whiteflies and thrips on sticky traps using two-dimensional Fourier transform spectrum. Biosystems Engineering, 2017, 153, 82-88.	4.3	30
46	Impact of soil salinity, texture and measurement frequency on the relations between soil moisture and 20-MHz-3-GHz dielectric permittivity spectrum for soils of medium texture. Journal of Hydrology, 2019, 579, 124155.	5.4	29
47	MICROGRAVITY EFFECTS ON WATER SUPPLY AND SUBSTRATE PROPERTIES IN POROUS MATRIX ROOT SUPPORT SYSTEMS. Acta Astronautica, 2000, 47, 839-848.	3.2	27
48	Global Estimates of Land Surface Water Fluxes from SMOS and SMAP Satellite Soil Moisture Data. Journal of Hydrometeorology, 2020, 21, 241-253.	1.9	27
49	Impact of elevated tropospheric ozone on soil C, N and microbial dynamics of winter wheat. Agriculture, Ecosystems and Environment, 2018, 253, 166-176.	5.3	26
50	A New Optical Remote Sensing Technique for High-Resolution Mapping of Soil Moisture. Frontiers in Big Data, 2019, 2, 37.	2.9	26
51	A TDR Array Probe for Monitoring Near-surface Soil Moisture Distribution. Vadose Zone Journal, 2017, 16, 1-8.	2.2	25
52	The effect of vegetation on infiltration in shallow soils underlain by fissured bedrock. Journal of Hydrology, 1999, 218, 169-190.	5.4	24
53	Determining in-situ soil freeze-thaw cycle dynamics using an access tube-based dielectric sensor. Geoderma, 2012, 189-190, 321-327.	5.1	24
54	In situ measured and simulated seasonal freeze-thaw cycle: A 2-year comparative study between layered and homogeneous field soil profiles. Journal of Hydrology, 2014, 519, 1466-1473.	5.4	23

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55	Measurements and Modeling of Variable Gravity Effects on Water Distribution and Flow in Unsaturated Porous Media. <i>Vadose Zone Journal</i> , 2007, 6, 713-724.	2.2	22
56	Methods and Techniques for Measuring Gas Emissions from Agricultural and Animal Feeding Operations. <i>Critical Reviews in Analytical Chemistry</i> , 2014, 44, 200-219.	3.5	22
57	Estimating actual evapotranspiration from stony-soils in montane ecosystems. <i>Agricultural and Forest Meteorology</i> , 2019, 265, 183-194.	4.8	21
58	Physical and Hydraulic Properties of Baked Ceramic Aggregates Used for Plant Growth Medium. <i>Journal of the American Society for Horticultural Science</i> , 2005, 130, 767-774.	1.0	21
59	Modeling the permittivity of two-phase media containing monodisperse spheres: Effects of microstructure and multiple scattering. <i>Physical Review B</i> , 2007, 76, .	3.2	20
60	Comparison of three soil-like substrate production techniques for a bioregenerative life support system. <i>Advances in Space Research</i> , 2010, 46, 1156-1161.	2.6	20
61	Effects of precipitation pulses on water and carbon dioxide fluxes in two semiarid ecosystems: measurement and modeling. <i>Environmental Earth Sciences</i> , 2012, 67, 2315-2324.	2.7	20
62	Beyond Earth: Designing Root Zone Environments for Reduced Gravity Conditions. <i>Vadose Zone Journal</i> , 2012, 11, .	2.2	19
63	Designing and Implementing a Network for Sensing Water Quality and Hydrology across Mountain to Urban Transitions. <i>Journal of the American Water Resources Association</i> , 2017, 53, 1095-1120.	2.4	19
64	Inverse method for simultaneous determination of soil water flux density and thermal properties with a penta-needle heat pulse probe. <i>Water Resources Research</i> , 2013, 49, 5851-5864.	4.2	18
65	Horizontal monitoring of soil water content using a novel automated and mobile electromagnetic access-tube sensor. <i>Journal of Hydrology</i> , 2014, 516, 50-55.	5.4	18
66	Information depth of NIR/SWIR soil reflectance spectroscopy. <i>Remote Sensing of Environment</i> , 2021, 256, 112315.	11.0	18
67	Liquid Behavior in Partially Saturated Porous Media under Variable Gravity. <i>Soil Science Society of America Journal</i> , 2009, 73, 341-350.	2.2	17
68	Dielectric Spectroscopy and Application of Mixing Models Describing Dielectric Dispersion in Clay Minerals and Clayey Soils. <i>Sensors</i> , 2020, 20, 6678.	3.8	17
69	INV-WATFLX, a code for simultaneous estimation of soil properties and planar vector water flux from fully or partly functioning needles of a penta-needle heat-pulse probe. <i>Computers and Geosciences</i> , 2009, 35, 2250-2258.	4.2	16
70	Diffusion Aspects of Designing Porous Growth Media for Earth and Space. <i>Soil Science Society of America Journal</i> , 2012, 76, 1564-1578.	2.2	15
71	Monitoring tomato root zone water content variation and partitioning evapotranspiration with a novel horizontally-oriented mobile dielectric sensor. <i>Agricultural and Forest Meteorology</i> , 2016, 228-229, 85-94.	4.8	15
72	Porous Substrate Water Relations Observed During the Greenhouse-2 Flight Experiment. , 0, .		14

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73	Electromagnetic induction mapping at varied soil moisture reveals field-scale soil textural patterns and gravel lenses. <i>Frontiers of Agricultural Science and Engineering</i> , 2017, 4, 135.	1.4	14
74	A Time Domain Reflectometry Coaxial Cell for Manipulation and Monitoring of Water Content and Electrical Conductivity in Variably Saturated Porous Media. <i>Vadose Zone Journal</i> , 2005, 4, 977-982.	2.2	14
75	An Axenic Plant Culture System for Optimal Growth in Long-Term Studies. <i>Journal of Environmental Quality</i> , 2006, 35, 590-598.	2.0	13
76	A critical evaluation of the Miller and Miller similar media theory for application to natural soils. <i>Water Resources Research</i> , 2016, 52, 3829-3846.	4.2	13
77	Hydraulic conductivity of stratified unsaturated soils: Effects of random variability and layering. <i>Journal of Hydrology</i> , 2017, 546, 81-89.	5.4	13
78	Dielectric Measurement of Agricultural Grain Moisture—Theory and Applications. <i>Sensors</i> , 2022, 22, 2083.	3.8	13
79	Electromagnetic induction for mapping textural contrasts of mine tailing deposits. <i>Journal of Applied Geophysics</i> , 2013, 89, 11-20.	2.1	11
80	A capillary-driven root module for plant growth in microgravity. <i>Advances in Space Research</i> , 1998, 22, 1407-1412.	2.6	10
81	The Dielectric Response of the Tropical Hawaiian Mars Soil Simulant JSC Mars-1. <i>Soil Science Society of America Journal</i> , 2009, 73, 1113-1118.	2.2	10
82	Soil Surface Wetting Effects on Gradient-Based Estimates of Soil Carbon Dioxide Efflux. <i>Vadose Zone Journal</i> , 2014, 13, 1-12.	2.2	10
83	Contrasting soil nitrogen dynamics across a montane meadow and urban lawn in a semi-arid watershed. <i>Urban Ecosystems</i> , 2016, 19, 1083-1101.	2.4	10
84	Numerical modeling of the development of a preferentially leached layer on feldspar surfaces. <i>Environmental Geology</i> , 2009, 57, 1639.	1.2	9
85	Scaled Solutions to Coupled Soil-Water Flow and Solute Transport during the Redistribution Process. <i>Vadose Zone Journal</i> , 2012, 11, vj2012.0023.	2.2	9
86	Physical and Thermal Characteristics of Dairy Cattle Manure. <i>Journal of Environmental Quality</i> , 2014, 43, 2115-2129.	2.0	9
87	A Multi-Functional Penta-Needle Thermo-Dielectric Sensor for Porous Media Sensing. <i>IEEE Sensors Journal</i> , 2016, 16, 3670-3678.	4.7	9
88	Modeling and Design of Optimal Growth Media from Plant - Based Gas and Liquid Fluxes. , 0, , .		8
89	Microgravity Oxygen Diffusion and Water Retention Measurements in Unsaturated Porous Media aboard the International Space Station. <i>Vadose Zone Journal</i> , 2015, 14, 1-19.	2.2	8
90	Effect of Soil Texture on Estimates of Soil Column Carbon Dioxide Flux Comparing Chamber and Gradient Methods. <i>Vadose Zone Journal</i> , 2018, 17, 1-9.	2.2	8

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91	POROUS MEDIA MATRIC POTENTIAL AND WATER CONTENT MEASUREMENTS DURING PARABOLIC FLIGHT. <i>Habitation</i> , 2005, 10, 117-126.	0.2	7
92	Modeling gravity effects on water retention and gas transport characteristics in plant growth substrates. <i>Advances in Space Research</i> , 2014, 54, 797-808.	2.6	7
93	ORZS: Optimization of Root Zone Substrates for Microgravity. , 0, , .		6
94	Measurement of Porous Media Hydraulic Properties During Parabolic Flight Induced Microgravity. , 0, , .		6
95	Improved Dielectric and Electrical Conductivity Anisotropy Measurements Using TDR in Unsaturated Mica. <i>Vadose Zone Journal</i> , 2011, 10, 1097-1104.	2.2	6
96	A Novel Shortwave Infrared Proximal Sensing Approach to Quantify the Water Stability of Soil Aggregates. <i>Soil Science Society of America Journal</i> , 2018, 82, 1358-1366.	2.2	6
97	In-situ estimation of unsaturated hydraulic conductivity in freezing soil using improved field data and inverse numerical modeling. <i>Agricultural and Forest Meteorology</i> , 2019, 279, 107746.	4.8	6
98	Flow and Distribution of Fluid Phases through Porous Plant Growth Media in Microgravity: Progress to Date. , 0, , .		5
99	Challenges to Understanding Fluid Behavior in Plant Growth Media Under Microgravity. , 0, , .		5
100	Reply to comments on "Column-scale unsaturated hydraulic conductivity estimates in coarse-textured homogeneous and layered soils derived under steady-state evaporation from a water table" [J. Hydrol. 519 (2014), 1238-1248]. <i>Journal of Hydrology</i> , 2015, 529, 1277-1281.	5.4	5
101	High-Resolution Shortwave Infrared Imaging of Water Infiltration into Dry Soil. <i>Vadose Zone Journal</i> , 2017, 16, 1-10.	2.2	5
102	A new mathematical formulation for remote sensing of soil moisture based on the Red-NIR space. <i>International Journal of Remote Sensing</i> , 2020, 41, 8034-8047.	2.9	5
103	Towards new soil water flow equations using physics-constrained machine learning. <i>Vadose Zone Journal</i> , 2021, 20, e20136.	2.2	5
104	Particulated growth media for optimal liquid and gaseous fluxes to plant roots in microgravity. <i>Advances in Space Research</i> , 1998, 22, 1413-1418.	2.6	4
105	Thermal and Geometrical Effects on Bulk Permittivity of Porous Mixtures Containing Bound Water. , 2005, , 71-92.		4
106	Providing Optimal Root-Zone Fluid Fluxes: Effects of Hysteresis on Capillary-Dominated Water Distributions in Reduced Gravity. , 0, , .		4
107	Stone Content Influence on Land Surface Model Simulation of Soil Moisture and Evapotranspiration at Reynolds Creek Watershed. <i>Journal of Hydrometeorology</i> , 2020, 21, 1889-1904.	1.9	4
108	The feasibility of shortwave infrared imaging and inverse numerical modeling for rapid estimation of soil hydraulic properties. <i>Vadose Zone Journal</i> , 2021, 20, e20089.	2.2	3

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109	Gas Diffusion Measurement and Modeling in Coarse-Textured Porous Media. Vadose Zone Journal, 2003, 2, 602-610.	2.2	3
110	An Automated Oxygen Diffusion Measurement System for Porous Media in Microgravity. , 0, , .		2
111	Frequency Domain Soil Moisture Determination Using Bilinear Analysis with an Open-Ended Dielectric Probe. , 2009, , .		2
112	Porous Plant Growth Media Design Considerations for Lunar and Martian Habitats. SAE International Journal of Aerospace, 2009, 4, 55-62.	4.0	2
113	Modeling temperature and moisture dependent emissions of carbon dioxide and methane from drying dairy cow manure. Frontiers of Agricultural Science and Engineering, 2018, .	1.4	2
114	Integration of Heat Capacity and Electrical Conductivity Sensors for Root Module Water and Nutrient Assessment. , 0, , .		1
115	Retrieval of AirMOSS root-zone soil moisture profile with a richards' equation-based approach. , 2017, , .		1
116	Standardizing Heat Pulse Probe measurements for thermal property determination using ice and water. Agricultural and Forest Meteorology, 2021, 308-309, 108610.	4.8	1
117	Automated Systems for Oxygen Diffusion Measurements in Porous Media at 1g and 0g. , 2004, , 368.		0
118	Subsurface measurement needs for ecological, hydrological and agricultural applications. Midwest Symposium on Circuits and Systems, 2007, , .	1.0	0
119	Novel Mobile Soil Water Content Sensing Techniques. , 2009, , .		0
120	Measurement Accuracy of a Multiplexed Portable FTIR - Surface Chamber System for Estimating Gas Emissions. , 2013, , .		0
121	Correction of anisotropy effects on penta-needle heat-pulse probe sap-flux density and thermal property measurements. Agricultural and Forest Meteorology, 2018, 263, 399-408.	4.8	0
122	Dielectrically Relaxing and Electrically Conducting Suspensions for Testing Water Content Sensors. , 2021, , .		0
123	Geometrical Factors Affecting the Bulk Electrical Properties of Soils and Rocks: Measurements and Continuum Mean Field Computations. , 2004, , 81-82.		0