Jan Vanderborght

List of Publications by Year
in descending order

226	10,181	47006	48315
papers	citations	47 h-index	88 g-index

270	270	270	8165
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	On the value of soil moisture measurements in vadose zone hydrology: A review. Water Resources Research, 2008, 44, .	4.2	530
2	Modeling Soil Processes: Review, Key Challenges, and New Perspectives. Vadose Zone Journal, 2016, 15, 1-57.	2.2	445
3	On the spatio-temporal dynamics of soil moisture at the field scale. Journal of Hydrology, 2014, 516, 76-96.	5.4	369
4	Imaging and characterisation of subsurface solute transport using electrical resistivity tomography (ERT) and equivalent transport models. Journal of Hydrology, 2002, 267, 125-146.	5.4	352
5	Use of a Threeâ€Dimensional Detailed Modeling Approach for Predicting Root Water Uptake. Vadose Zone Journal, 2008, 7, 1079-1088.	2.2	320
6	Pedotransfer Functions in Earth System Science: Challenges and Perspectives. Reviews of Geophysics, 2017, 55, 1199-1256.	23.0	316
7	Imaging and characterisation of subsurface solute transport using electrical resistivity tomography (ERT) and equivalent transport models. Journal of Hydrology, 2002, 267, 125-146.	5.4	249
8	Review of Dispersivities for Transport Modeling in Soils. Vadose Zone Journal, 2007, 6, 29-52.	2.2	246
9	Nutrient acquisition from arable subsoils in temperate climates: A review. Soil Biology and Biochemistry, 2013, 57, 1003-1022.	8.8	239
10	Upscaling Hydraulic Properties and Soil Water Flow Processes in Heterogeneous Soils: A Review. Vadose Zone Journal, 2007, 6, 1-28.	2.2	215
11	Proof of concept of regional scale hydrologic simulations at hydrologic resolution utilizing massively parallel computer resources. Water Resources Research, 2010, 46, .	4.2	178
12	Explaining soil moisture variability as a function of mean soil moisture: A stochastic unsaturated flow perspective. Geophysical Research Letters, 2007, 34, .	4.0	177
13	A simple three-dimensional macroscopic root water uptake model based on the hydraulic architecture approach. Hydrology and Earth System Sciences, 2012, 16, 2957-2971.	4.9	164
14	Soil hydrology: Recent methodological advances, challenges, and perspectives. Water Resources Research, 2015, 51, 2616-2633.	4.2	149
15	20 years of long-term atrazine monitoring in a shallow aquifer in western Germany. Water Research, 2014, 50, 294-306.	11.3	137
16	Root Water Uptake: From Threeâ€Dimensional Biophysical Processes to Macroscopic Modeling Approaches. Vadose Zone Journal, 2013, 12, 1-16.	2.2	128
17	CRootBox: a structuralâ€“functional modelling framework for root systems. Annals of Botany, 2018, 121, 1033-1053.	2.9	123
18	Threeâ€Dimensional Electrical Resistivity Tomography to Monitor Root Zone Water Dynamics. Vadose Zone Journal, 2011, 10, 412-424.	2.2	102

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19	Comparison of Three Methods to Calibrate TDR for Monitoring Solute Movement in Undisturbed Soil. Soil Science Society of America Journal, 1996, 60, 747-754.	2.2	93
20	Modelling Water Flow and Solute Transport in Heterogeneous Soils: A Review of Recent Approaches. Biosystems Engineering, 1998, 70, 231-256.	0.4	93
21	Electromagnetic induction calibration using apparent electrical conductivity modelling based on electrical resistivity tomography. Near Surface Geophysics, 2010, 8, 553-561.	1.2	93
22	Potential of electrical resistivity tomography to infer aquifer transport characteristics from tracer studies: A synthetic case study. Water Resources Research, 2005, 41, .	4.2	89
23	Imaging and characterization of solute transport during two tracer tests in a shallow aquifer using electrical resistivity tomography and multilevel groundwater samplers. Water Resources Research, 2010, 46, .	4.2	88
24	Development and analysis of the Soil Water Infiltration Global database. Earth System Science Data, 2018, 10, 1237-1263.	9.9	85
25	Monitoring and Modeling the Terrestrial System from Pores to Catchments: The Transregional Collaborative Research Center on Patterns in the Soilâ€“Vegetationâ€“Atmosphere System. Bulletin of the American Meteorological Society, 2015, 96, 1765-1787.	3.3	80
26	Changes in Soil Water Content Resulting from Ricinus Root Uptake Monitored by Magnetic Resonance Imaging. Vadose Zone Journal, 2008, 7, 1010-1017.	2.2	76
27	FOSMEX: Forest Soil Moisture Experiments With Microwave Radiometry. IEEE Transactions on Geoscience and Remote Sensing, 2008, 46, 727-735.	6.3	75
28	TERENO-SOILCan: a lysimeter-network in Germany observing soil processes and plant diversity influenced by climate change. Environmental Earth Sciences, 2016, 75, 1.	2.7	73
29	Monitoring Solute Transport in a Multiâ€Layered Sandy Lysimeter using Time Domain Reflectometry. Soil Science Society of America Journal, 1995, 59, 337-344.	2.2	71
30	Two-dimensional characterization of hydraulic heterogeneity by multiple pumping tests. Water Resources Research, 2007, 43, .	4.2	71
31	Dynamic aspects of soil water availability for isohydric plants: Focus on root hydraulic resistances. Water Resources Research, 2014, 50, 8891-8906.	4.2	70
32	Measured microwave radiative transfer properties of a deciduous forest canopy. Remote Sensing of Environment, 2007, 109, 523-532.	11.0	67
33	Characterization and Understanding of Bare Soil Respiration Spatial Variability at Plot Scale. Vadose Zone Journal, 2009, 8, 762-771.	2.2	67
34	Long-term and high-frequency non-destructive monitoring of water stable isotope profiles in an evaporating soil column. Hydrology and Earth System Sciences, 2015, 19, 4067-4080.	4.9	67
35	Heat and water transport in soils and across the soilâ€atmosphere interface: 1. Theory and different model concepts. Water Resources Research, 2017, 53, 1057-1079.	4.2	67
36	Solute Transport for Steadyâ€State and Transient Flow in Soils with and without Macropores. Soil Science Society of America Journal, 2000, 64, 1305-1317.	2.2	65

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37	Overview of inert tracer experiments in key belgian soil types: Relation between transport and soil morphological and hydraulic properties. Water Resources Research, 2001, 37, 2873-2888.	4.2	65
38	Multiyear heterotrophic soil respiration: Evaluation of a coupled CO2 transport and carbon turnover model. Ecological Modelling, 2008, 214, 271-283.	2.5	64
39	Atrazine Soil Core Residue Analysis from an Agricultural Field 21 Years after Its Ban. Journal of Environmental Quality, 2014, 43, 1450-1459.	2.0	62
40	Brightness Temperature and Soil Moisture Validation at Different Scales During the SMOS Validation Campaign in the Rur and Erft Catchments, Germany. IEEE Transactions on Geoscience and Remote Sensing, 2013, 51, 1728-1743.	6.3	61
41	Efficient random walk particle tracking algorithm for advectiveâ€dispersive transport in media with discontinuous dispersion coefficients and water contents. Water Resources Research, 2011, 47, .	4.2	58
42	Inverse Estimation of Soil Hydraulic and Transport Parameters of Layered Soils from Water Stable Isotope and Lysimeter Data. Vadose Zone Journal, 2018, 17, 1-19.	2.2	57
43	Predicting subgrid variability of soil water content from basic soil information. Geophysical Research Letters, 2015, 42, 789-796.	4.0	56
44	Infiltration from the Pedon to Global Grid Scales: An Overview and Outlook for Land Surface Modeling. Vadose Zone Journal, 2019, 18, 1-53.	2.2	56
45	Effects of Soil Type and Water Flux on Solute Transport. Soil Science Society of America Journal, 1997, 61, 372.	2.2	55
46	Imaging and characterization of facies heterogeneity in an alluvial aquifer using GPR full-waveform inversion and cone penetration tests. Journal of Hydrology, 2015, 524, 680-695.	5.4	53
47	Numerical experiments on the sensitivity of runoff generation to the spatial variation of soil hydraulic properties. Journal of Hydrology, 2006, 326, 43-58.	5.4	50
48	Comparison of Heterogeneous Transport Processes Observed with Electrical Resistivity Tomography in Two Soils. Vadose Zone Journal, 2010, 9, 336-349.	2.2	49
49	Noninvasive Monitoring of Soil Water Dynamics in Mixed Cropping Systems: A Case Study in Ratchaburi Province, Thailand. Vadose Zone Journal, 2013, 12, 1-12.	2.2	49
50	Identification of Transport Processes in Soil Cores Using Fluorescent Tracers. Soil Science Society of America Journal, 2002, 66, 774-787.	2.2	48
51	Effect of Local Soil Hydraulic Conductivity Drop Using a Threeâ€Dimensional Root Water Uptake Model. Vadose Zone Journal, 2008, 7, 1089-1098.	2.2	48
52	Implementation of a Microscopic Soilâ€“Root Hydraulic Conductivity Drop Function in a Threeâ€Dimensional Soilâ€“Root Architecture Water Transfer Model. Vadose Zone Journal, 2009, 8, 783-792.	2.2	48
53	Horizontal soil water potential heterogeneity: simplifying approaches for crop water dynamics models. Hydrology and Earth System Sciences, 2014, 18, 1723-1743.	4.9	48
54	Parameterization of Root Water Uptake Models Considering Dynamic Root Distributions and Water Uptake Compensation. Vadose Zone Journal, 2018, 17, 1-21.	2.2	47

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55	How to Control the Lysimeter Bottom Boundary to Investigate the Effect of Climate Change on Soil Processes?. Vadose Zone Journal, 2016, 15, 1-15.	2.2	46
56	Determining Convective Lognormal Solute Transport Parameters from Resident Concentration Data. Soil Science Society of America Journal, 1996, 60, 1306-1317.	2.2	45
57	A Set of Analytical Benchmarks to Test Numerical Models of Flow and Transport in Soils. Vadose Zone Journal, 2005, 4, 206.	2.2	45
58	Root growth, water uptake, and sap flow of winter wheat in response to different soil water conditions. Hydrology and Earth System Sciences, 2018, 22, 2449-2470.	4.9	44
59	Characterisation of the field-saturated hydraulic conductivity on a hillslope: in situ single ring pressure infiltrometer measurements. Journal of Hydrology, 2002, 263, 217-229.	5.4	43
60	Construction of Minirhizotron Facilities for Investigating Root Zone Processes. Vadose Zone Journal, 2016, 15, 1-13.	2.2	43
61	Soil Water Extraction with a Suction Cup: Results of Numerical Simulations. Vadose Zone Journal, 2005, 4, 899-907.	2.2	42
62	Investigating Preferential Flow Processes in a Forest Soil Using Time Domain Reflectometry and Electrical Resistivity Tomography. Vadose Zone Journal, 2010, 9, 350-361.	2.2	42
63	Transformation and Sorption of the Veterinary Antibiotic Sulfadiazine in Two Soils: A Short-Term Batch Study. Environmental Science & Technology, 2010, 44, 4651-4657.	10.0	42
64	Analysis of steady state chloride transport through two heterogeneous field soils. Water Resources Research, 1998, 34, 2539-2550.	4.2	40
65	A Set of Analytical Benchmarks to Test Numerical Models of Flow and Transport in Soils. Vadose Zone Journal, 2005, 4, 206-221.	2.2	40
66	Dissolved Organic Carbon Fluxes under Bare Soil. Journal of Environmental Quality, 2007, 36, 597-606.	2.0	40
67	Noninvasive 3â€D Transport Characterization in a Sandy Soil Using ERT: 1. Investigating the Validity of ERTâ€derived Transport Parameters. Vadose Zone Journal, 2009, 8, 711-722.	2.2	40
68	High resolution aquifer characterization using crosshole <scp>GPR</scp> fullâ€waveform tomography: Comparison with directâ€push and tracer test data. Water Resources Research, 2017, 53, 49-72.	4.2	39
69	Towards quantitative root hydraulic phenotyping: novel mathematical functions to calculate plant-scale hydraulic parameters from root system functional and structural traits. Journal of Mathematical Biology, 2017, 75, 1133-1170.	1.9	38
70	Quantification and Prediction of Nighttime Evapotranspiration for Two Distinct Grassland Ecosystems. Water Resources Research, 2019, 55, 2961-2975.	4.2	38
71	Spatial variability of soil water content and soil electrical conductivity across scales derived from Electromagnetic Induction and Time Domain Reflectometry. Geoderma, 2018, 314, 160-174.	5.1	38
72	Stochastic Continuum Transport Equations for Field-Scale Solute Transport: Overview of Theoretical and Experimental Results. Vadose Zone Journal, 2006, 5, 184-203.	2.2	37

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73	Controls on dissolved organic carbon export through surface runoff from loamy agricultural soils. Geoderma, 2014, 226-227, 387-396.	5.1	37
74	Heat and water transport in soils and across the soilâ€atmosphere interface: 2. Numerical analysis. Water Resources Research, 2017, 53, 1080-1100.	4.2	37
75	CPlantBox, a whole-plant modelling framework for the simulation of water- and carbon-related processes. In Silico Plants, 2020, 2, .	1.9	37
76	A hybrid analytical-numerical method for solving water flow equations in root hydraulic architectures. Applied Mathematical Modelling, 2017, 52, 648-663.	4.2	36
77	Modeling the Impact of Biopores on Root Growth and Root Water Uptake. Vadose Zone Journal, 2019, 18, 1-20.	2.2	36
78	Estimating Soil Hydraulic Properties from Infrared Measurements of Soil Surface Temperatures and TDR Data. Vadose Zone Journal, 2010, 9, 910-924.	2.2	35
79	Continuum multiscale model of root water and nutrient uptake from soil with explicit consideration of the 3D root architecture and the rhizosphere gradients. Plant and Soil, 2019, 439, 273-292.	3.7	35
80	Concentration variance and spatial covariance in second-order stationary heterogeneous conductivity fields. Water Resources Research, 2001, 37, 1893-1912.	4.2	34
81	Modelling the impact of heterogeneous rootzone water distribution on the regulation of transpiration by hormone transport and/or hydraulic pressures. Plant and Soil, 2014, 384, 93-112.	3.7	34
82	Parameter uncertainty in the mobile-immobile solute transport model. Journal of Hydrology, 1997, 190, 75-101.	5.4	33
83	Analyses of locally measured bromide breakthrough curves from a natural gradient tracer experiment at Krauthausen. Journal of Contaminant Hydrology, 2001, 48, 23-43.	3.3	33
84	Field study on colloid transport using fluorescent microspheres. European Journal of Soil Science, 2008, 59, 82-93.	3.9	33
85	PARSWMS: A Parallelized Model for Simulating Three-Dimensional Water Flow and Solute Transport in Variably Saturated Soils. Vadose Zone Journal, 2007, 6, 255-259.	2.2	32
86	Characterization of subsoil heterogeneity, estimation of grain size distribution and hydraulic conductivity at the Krauthausen test site using Cone Penetration Test. Journal of Contaminant Hydrology, 2008, 95, 57-75.	3.3	32
87	Simulating the mobility of meteoric 10 Be in the landscape through a coupled soil-hillslope model (Be2D). Earth and Planetary Science Letters, 2016, 439, 143-157.	4.4	32
88	A new model for root growth in soil with macropores. Plant and Soil, 2017, 415, 99-116.	3.7	32
89	Measuring and Modeling Hydraulic Lift of Lolium multiflorum Using Stable Water Isotopes. Vadose Zone Journal, 2018, 17, 1-15.	2.2	31
90	Surfactant enhanced solubilization of residual trichloroethene: an experimental and numerical analysis. Journal of Contaminant Hydrology, 2000, 46, 1-16.	3.3	30

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91	Numerical investigations on ergodicity of solute transport in heterogeneous aquifers. Water Resources Research, 2006, 42, .	4.2	30
92	Evaluating Experimental Design of ERT for Soil Moisture Monitoring in Contour Hedgerow Intercropping Systems. Vadose Zone Journal, 2012, 11, vzj2011.0186.	2.2	30
93	Moisture profiles of the upper soil layer during evaporation monitored by NMR. Water Resources Research, 2014, 50, 5184-5195.	4.2	30
94	Do Lab-Derived Distribution Coefficient Values of Pesticides Match Distribution Coefficient Values Determined from Column and Field-Scale Experiments? A Critical Analysis of Relevant Literature. Journal of Environmental Quality, 2011, 40, 879-898.	2.0	29
95	Virtual Soils: Assessment of the Effects of Soil Structure on the Hydraulic Behavior of Cultivated Soils. Vadose Zone Journal, 2012, 11, vzj2011.0174.	2.2	29
96	Effect of Root Water and Solute Uptake on Apparent Soil Dispersivity: A Simulation Study. Vadose Zone Journal, 2012, 11, vzj2012.0009.	2.2	29
97	Using the long-term memory effect of pesticide and metabolite soil residues to estimate field degradation half-life and test leaching predictions. Geoderma, 2013, 207-208, 15-24.	5.1	29
98	Linking transpiration reduction to rhizosphere salinity using a 3D coupled soil-plant model. Plant and Soil, 2014, 377, 277-293.	3.7	29
99	Noninvasive 3â€Ð Transport Characterization in a Sandy Soil Using ERT: 2. Transport Process Inference. Vadose Zone Journal, 2009, 8, 723-734.	2.2	28
100	Reconstruction of Three-Dimensional Aquifer Heterogeneity from Two-Dimensional Geophysical Data. Mathematical Geosciences, 2018, 50, 53-75.	2.4	28
101	Incorporating a root water uptake model based on the hydraulic architecture approach in terrestrial systems simulations. Agricultural and Forest Meteorology, 2019, 269-270, 28-45.	4.8	28
102	A functionalâ€“structural model of upland rice root systems reveals the importance of laterals and growing root tips for phosphate uptake from wet and dry soils. Annals of Botany, 2020, 126, 789-806.	2.9	28
103	Numerical Analysis of Passive Capillary Wick Samplers prior to Field Installation. Soil Science Society of America Journal, 2007, 71, 35-42.	2.2	26
104	Near-surface solute redistribution during evaporation. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	26
105	Linking rhizosphere processes across scales: Opinion. Plant and Soil, 2022, 478, 5-42.	3.7	25
106	Solute transport in a heterogeneous soil for boundary and initial conditions: Evaluation of first-order approximations. Water Resources Research, 1998, 34, 3255-3270.	4.2	24
107	Unraveling the hydrodynamics of split root water uptake experiments using CT scanned root architectures and three dimensional flow simulations. Frontiers in Plant Science, 2015, 6, 370.	3.6	24
108	Monitoring Soil Water Content Using Timeâ€Lapse Horizontal Borehole GPR Data at the Fieldâ€Plot Scale. Vadose Zone Journal, 2019, 18, 190044.	2.2	24

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109	Miscible Displacement, Sorption and Desorption of Atrazine in a Brazilian Oxisol. Vadose Zone Journal, 2003, 2, 728-738.	2.2	23
110	Estimation of local scale dispersion from local breakthrough curves during a tracer test in a heterogeneous aquifer: the Lagrangian approach. Journal of Contaminant Hydrology, 2002, 54, 141-171.	3.3	22
111	Three-Dimensional Modeling of the Scale- and Flow Rate-Dependency of Dispersion in a Heterogeneous Unsaturated Sandy Monolith. Vadose Zone Journal, 2006, 5, 515-528.	2.2	22
112	Withinâ€Field Variability of Bare Soil Evaporation Derived from Eddy Covariance Measurements. Vadose Zone Journal, 2010, 9, 943-954.	2.2	22
113	Parameterizing a Dynamic Architectural Model of the Root System of Spring Barley from Minirhizotron Data. Vadose Zone Journal, 2012, 11, vzj2011.0179.	2.2	22
114	Functionalâ€“structural root-system model validation using a soil MRI experiment. Journal of Experimental Botany, 2019, 70, 2797-2809.	4.8	22
115	Connecting the dots between computational tools to analyse soilâ€“root water relations. Journal of Experimental Botany, 2019, 70, 2345-2357.	4.8	22
116	Responses of soil water storage and crop water use efficiency to changing climatic conditions: a lysimeter-based space-for-time approach. Hydrology and Earth System Sciences, 2020, 24, 1211-1225.	4.9	22
117	A grid refinement approach for a threeâ€dimensional soilâ€root water transfer model. Water Resources Research, 2009, 45, .	4.2	21
118	Identifying the Transport Pathways of Dissolved Organic Carbon in Contrasting Catchments. Vadose Zone Journal, 2014, 13, 1-14.	2.2	21
119	Soil Hydraulic Parameters and Surface Soil Moisture of a Tilled Bare Soil Plot Inversely Derived from Lâ€Band Brightness Temperatures. Vadose Zone Journal, 2014, 13, 1-18.	2.2	21
120	Isotopic composition of plant water sources. Nature, 2016, 536, E1-E3.	27.8	21
121	Measuring root system traits of wheat in 2D images to parameterize 3D root architecture models. Plant and Soil, 2018, 425, 457-477.	3.7	21
122	Prediction of velocity statistics in three-dimensional multi-Gaussian hydraulic conductivity fields. Water Resources Research, 2006, 42, .	4.2	20
123	One-Dimensional Modeling of Transport in Soils with Depth-Dependent Dispersion, Sorption and Decay. Vadose Zone Journal, 2007, 6, 140-148.	2.2	20
124	Hydraulic non-equilibrium during infiltration induced by structural connectivity. Advances in Water Resources, 2012, 44, 101-112.	3.8	20
125	Virtual Soils: Moisture Measurements and Their Interpretation by Inverse Modeling. Vadose Zone Journal, 2013, 12, 1-12.	2.2	20
126	Reactive Transport of Iomeprol during Stream-Groundwater Interactions. Environmental Science & Technology, 2014, 48, 199-207.	10.0	20

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127	Combining Î´13C measurements and ERT imaging: improving our understanding of competition at the crop-soil-hedge interface. Plant and Soil, 2015, 393, 1-20.	3.7	20
128	Modeling the Impact of Rhizosphere Bulk Density and Mucilage Gradients on Root Water Uptake. Frontiers in Agronomy, 2021, 3, .	3.3	20
129	Inverse Modeling of Pesticide Leaching in Lysimeters: Local versus Global and Sequential Singleâ€Objective versus Multiobjective Approaches. Vadose Zone Journal, 2009, 8, 793-804.	2.2	19
130	Investigation of Kinetic Isotopic Fractionation of Water During Bare Soil Evaporation. Water Resources Research, 2018, 54, 6909-6928.	4.2	19
131	Identification of Transport Processes in Soil Cores Using Fluorescent Tracers. Soil Science Society of America Journal, 2002, 66, 774.	2.2	19
132	Interpretation of Dye Transport in a Macroscopically Heterogeneous, Unsaturated Subsoil with a One-Dimensional Model. Vadose Zone Journal, 2006, 5, 529-538.	2.2	18
133	Multivariate conditional stochastic simulation of soil heterotrophic respiration at plot scale. Geoderma, 2010, 160, 74-82.	5.1	18
134	Effect of pesticide fate parameters and their uncertainty on the selection of â€˜worstâ€caseâ€™ scenarios of pesticide leaching to groundwater. Pest Management Science, 2011, 67, 294-306.	3.4	18
135	Upward Transport in a Threeâ€Dimensional Heterogeneous Laboratory Soil under Evaporation Conditions. Vadose Zone Journal, 2012, 11, vzj2011.0066.	2.2	18
136	Effects of Near Surface Soil Moisture Profiles During Evaporation on Farâ€Field Groundâ€Penetrating Radar Data: A Numerical Study. Vadose Zone Journal, 2013, 12, 1-11.	2.2	18
137	Solute Transport in Heterogeneous Soil with Timeâ€Dependent Boundary Conditions. Vadose Zone Journal, 2016, 15, 1-17.	2.2	18
138	Call for Participation: Collaborative Benchmarking of Functional-Structural Root Architecture Models. The Case of Root Water Uptake. Frontiers in Plant Science, 2020, 11, 316.	3.6	18
139	Deriving Transport Parameters from Transient Flow Leaching Experiments by Approximate Steadyâ€State Flow Convectionâ€“Dispersion Models. Soil Science Society of America Journal, 2000, 64, 1317-1327.	2.2	17
140	Imaging Fluorescent Dye Concentrations on Soil Surfaces. Soil Science Society of America Journal, 2002, 66, 760-773.	2.2	17
141	Correspondence of measured soil carbon fractions and RothC pools for equilibrium and non-equilibrium states. Geoderma, 2018, 314, 37-46.	5.1	17
142	Impacts of forest conversion and agriculture practices on water pathways in Southern Brazil. Hydrological Processes, 2018, 32, 2304-2317.	2.6	17
143	Evaluation of Model Concepts to Describe Water Transport in Shallow Subsurface Soil and Across the Soilâ€“Air Interface. Transport in Porous Media, 2019, 128, 945-976.	2.6	17
144	Soil hydraulic properties estimation from oneâ€dimensional infiltration experiments using characteristic time concept. Vadose Zone Journal, 2020, 19, e20068.	2.2	17

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145	On the impact of increasing drought on the relationship between soil water content and evapotranspiration of a grassland. Vadose Zone Journal, 2020, 19, e20029.	2.2	17
146	Pesticide fate at regional scale: Development of an integrated model approach and application. Physics and Chemistry of the Earth, 2005, 30, 542-549.	2.9	16
147	Water movement through plant roots â€“ exact solutions of the water flow equation in roots with linear or exponential piecewise hydraulic properties. Hydrology and Earth System Sciences, 2017, 21, 6519-6540.	4.9	16
148	Simulating transpiration and leaf water relations in response to heterogeneous soil moisture and different stomatal control mechanisms. Plant and Soil, 2015, 394, 109-126.	3.7	15
149	The Root Zone: Soil Physics and Beyond. Vadose Zone Journal, 2018, 17, 1-6.	2.2	15
150	Comparison of root water uptake models in simulating CO₂ and H₂O fluxes and growth of wheat. Hydrology and Earth System Sciences, 2020, 24, 4943-4969.	4.9	15
151	Combined Impact of Soil Heterogeneity and Vegetation Type on the Annual Water Balance at the Field Scale. Vadose Zone Journal, 2013, 12, 1-17.	2.2	14
152	From hydraulic root architecture models to macroscopic representations of root hydraulics in soil water flow and land surface models. Hydrology and Earth System Sciences, 2021, 25, 4835-4860.	4.9	14
153	Root hairs matter at field scale for maize shoot growth and nutrient uptake, but root trait plasticity is primarily triggered by texture and drought. Plant and Soil, 2022, 478, 119-141.	3.7	14
154	Development and Validation of a Deep Learning Based Automated Minirhizotron Image Analysis Pipeline. Plant Phenomics, 2022, 2022, .	5.9	14
155	Geophysical Methods for Field-Scale Imaging of Root Zone Properties and Processes. SSSA Special Publication Series, 0, , 247-282.	0.2	13
156	Quantitative mapping of solute accumulation in a soilâ€“root system by magnetic resonance imaging. Water Resources Research, 2017, 53, 7469-7480.	4.2	13
157	Exploring Osmotic Stress and Differences between Soilâ€“Root Interface and Bulk Salinities. Vadose Zone Journal, 2018, 17, 1-13.	2.2	13
158	On preconditioning for a parallel solution of the Richards equation. Computers and Geosciences, 2008, 34, 1958-1963.	4.2	12
159	Leaching surfaces to characterize transport in a heterogeneous aquifer: Comparison between flux concentrations, resident concentrations, and flux concentrations estimated from temporal moment analysis. Water Resources Research, 2008, 44, .	4.2	12
160	European scenarios for exposure of soil organisms to pesticides. Journal of Environmental Science and Health - Part B Pesticides, Food Contaminants, and Agricultural Wastes, 2013, 48, 703-716.	1.5	12
161	Estimation of the near surface soil water content during evaporation using airâ€launched groundâ€penetrating radar. Near Surface Geophysics, 2014, 12, 623-634.	1.2	12
162	The effect of the top soil layer on moisture and evaporation dynamics. Vadose Zone Journal, 2020, 19, e20049.	2.2	12

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163	Measuring vertical soil water content profiles by combining horizontal borehole and dispersive surface ground penetrating radar data. Near Surface Geophysics, 2020, 18, 275-294.	1.2	12
164	Investigating Atrazine Concentrations in the Zwischenscholle Aquifer Using MODFLOW with the HYDRUS-1D Package and MT3DMS. Water (Switzerland), 2020, 12, 1019.	2.7	12
165	Root architecture development in stony soils. Vadose Zone Journal, 2021, 20, e20133.	2.2	12
166	Fate of Two Herbicides in Zeroâ€Tension Lysimeters and in Field Soil. Journal of Environmental Quality, 2010, 39, 1451-1466.	2.0	11
167	Soil Hydraulic Parameters of Bare Soil Plots with Different Soil Structure Inversely Derived from Lâ€Band Brightness Temperatures. Vadose Zone Journal, 2015, 14, 1-23.	2.2	11
168	Simulating rhizodeposition patterns around growing and exuding root systems. In Silico Plants, 2021, 3, .	1.9	11
169	SOLUTE TRANSPORT PROCESSES. , 2006, , 117-159.		11
170	Delineating spring recharge areas in a fractured sandstone aquifer (Luxembourg) based on pesticide mass balance. Hydrogeology Journal, 2013, 21, 799-812.	2.1	10
171	Tracing root-felt sodium concentrations under different transpiration rates and salinity levels. Plant and Soil, 2020, 447, 55-71.	3.7	10
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