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List of Publications by Year
in descending order

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120 papers	5,048 citations	81900 39 h-index	98798 67 g-index
126 all docs	126 docs citations	126 times ranked	4855 citing authors

#	Article	IF	Citations
1	Alteration in molecular structure of alkali activated slag with various water to binder ratios under accelerated carbonation. Scientific Reports, 2022, 12, 5524.	3.3	3
2	Speeding Up Reactive Transport Simulations in Cement Systems by Surrogate Geochemical Modeling: Deep Neural Networks and k-Nearest Neighbors. Transport in Porous Media, 2022, 143, 433-462.	2.6	6
3	Synergistic Effects between Carbonation and Cracks in the Hardened Cement Paste. Sustainability, 2022, 14, 8572.	3.2	6
4	A benchmark for soil organic matter degradation under variably saturated flow conditions. Computational Geosciences, 2021, 25, 1359-1377.	2.4	7
5	Choice of Pedotransfer Functions Matters when Simulating Soil Water Balance Fluxes. Journal of Advances in Modeling Earth Systems, 2021, 13, e2020MS002404.	3.8	22
6	Approaching geoscientific inverse problems with vector-to-image domain transfer networks. Advances in Water Resources, 2021, 152, 103917.	3.8	8
7	Towards a scientific-based assessment of long-term durability and performance of cementitious materials for radioactive waste conditioning and disposal. Journal of Nuclear Materials, 2021, 557, 153201.	2.7	8
8	Fate and transport in environmental quality. Journal of Environmental Quality, 2021, 50, 1282-1289.	2.0	0
9	Suction cup systemâ€dependent variable boundary condition: Transient water flow and multicomponent solute transport. Vadose Zone Journal, 2020, 19, e20030.	2.2	3
10	Coupling Flow, Heat, and Reactive Transport Modeling to Reproduce In Situ Redox Potential Evolution: Application to an Infiltration Pond. Environmental Science & Technology, 2020, 54, 12092-12101.	10.0	15
11	A new concept for pore-scale precipitation-dissolution modelling in a lattice Boltzmann framework â€“ Application to portlandite carbonation. Applied Geochemistry, 2020, 123, 104786.	3.0	17
12	Shale weathering: A lysimeter and modelling study for flow, transport, gas diffusion and reactivity assessment in the critical zone. Journal of Hydrology, 2020, 587, 124925.	5.4	11
13	Scale-dependent parameterization of groundwaterâ€“surface water interactions in a regional hydrogeological model. Journal of Hydrology, 2019, 576, 494-507.	5.4	6
14	Diffusion models for the early-stage SON68 glass dissolution in a hyper-alkaline solution. Applied Geochemistry, 2019, 111, 104439.	3.0	1
15	Emulation of CPU-demanding reactive transport models: a comparison of Gaussian processes, polynomial chaos expansion, and deep neural networks. Computational Geosciences, 2019, 23, 1193-1215.	2.4	24
16	Gradient-based deterministic inversion of geophysical data with generative adversarial networks: Is it feasible?. Computers and Geosciences, 2019, 133, 104333.	4.2	41
17	Nested multiresolution hierarchical simulated annealing algorithm for porous media reconstruction. Physical Review E, 2019, 100, 053316.	2.1	25
18	Numerically accelerated pore-scale equilibrium dissolution. Journal of Contaminant Hydrology, 2019, 220, 119-127.	3.3	5

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19	Insights and issues on the correlation between diffusion and microstructure of saturated cement pastes. Cement and Concrete Composites, 2019, 96, 106-117.	10.7	21
20	Effective diffusivity of cement pastes from virtual microstructures: Role of gel porosity and capillary pore percolation. Construction and Building Materials, 2018, 165, 833-845.	7.2	44
21	Simulations of freshwater lens recharge and salt/freshwater interfaces using the HYDRUS and SWI2 packages for MODFLOW. Journal of Hydrology and Hydromechanics, 2018, 66, 246-256.	2.0	23
22	Trainingâ€Image Based Geostatistical Inversion Using a Spatial Generative Adversarial Neural Network. Water Resources Research, 2018, 54, 381-406.	4.2	232
23	A three-dimensional lattice Boltzmann method based reactive transport model to simulate changes in cement paste microstructure due to calcium leaching. Construction and Building Materials, 2018, 166, 158-170.	7.2	32
24	Current Concerns on Durability of Concrete Used in Nuclear Power Plants and Radioactive Waste Repositories. Lecture Notes in Civil Engineering, 2018, , 1107-1121.	0.4	1
25	Transport of dissolved organic matter in Boom Clay: Size effects. Journal of Contaminant Hydrology, 2018, 208, 27-34.	3.3	10
26	Numerical and Experimental Investigations of Cesium and Strontium Sorption and Transport in Agricultural Soils. Vadose Zone Journal, 2018, 17, 1-14.	2.2	11
27	Development of a Fully Coupled Biogeochemical Reactive Transport Model to Simulate Microbial Oxidation of Organic Carbon and Pyrite Under Nitrateâ€Reducing Conditions. Water Resources Research, 2018, 54, 9264-9286.	4.2	8
28	Quantification of leaching kinetics in OPC mortars via a mesoscale model. Construction and Building Materials, 2018, 180, 614-628.	7.2	9
29	The HPx software for multicomponent reactive transport during variably-saturated flow: Recent developments and applications. Journal of Hydrology and Hydromechanics, 2018, 66, 211-226.	2.0	22
30	Development and analysis of the Soil Water Infiltration Global database. Earth System Science Data, 2018, 10, 1237-1263.	9.9	85
31	Experimental and Numerical Investigations of Silver Nanoparticle Transport under Variable Flow and Ionic Strength in Soil. Environmental Science & Technology, 2017, 51, 2096-2104.	10.0	31
32	Reactive transport modelling to infer changes in soil hydraulic properties induced by non-conventional water irrigation. Journal of Hydrology, 2017, 549, 114-124.	5.4	17
33	Inversion using a new low-dimensional representation of complex binary geological media based on a deep neural network. Advances in Water Resources, 2017, 110, 387-405.	3.8	155
34	Coupled reactive transport model study of pore size effects on solubility during cement-bicarbonate water interaction. Chemical Geology, 2017, 466, 588-599.	3.3	12
35	Simulating the Fate and Transport of Coal Seam Gas Chemicals in Variably-Saturated Soils Using HYDRUS. Water (Switzerland), 2017, 9, 385.	2.7	14
36	Modelling the carbonation of cement pastes under a CO2 pressure gradient considering both diffusive and convective transport. Construction and Building Materials, 2016, 114, 333-351.	7.2	79

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37	Modelling the evolution of microstructure and transport properties of cement pastes under conditions of accelerated leaching. Construction and Building Materials, 2016, 115, 179-192.	7.2	57
38	Modeling Soil Processes: Review, Key Challenges, and New Perspectives. Vadose Zone Journal, 2016, 15, 1-57.	2.2	445
39	Diffusivity of saturated ordinary Portland cement-based materials: A critical review of experimental and analytical modelling approaches. Cement and Concrete Research, 2016, 90, 52-72.	11.0	123
40	Impact of manure-related DOM on sulfonamide transport in arable soils. Journal of Contaminant Hydrology, 2016, 192, 118-128.	3.3	28
41	Merging parallel tempering with sequential geostatistical resampling for improved posterior exploration of high-dimensional subsurface categorical fields. Advances in Water Resources, 2016, 90, 57-69.	3.8	28
42	Investigation of the changes in microstructure and transport properties of leached cement pastes accounting for mix composition. Cement and Concrete Research, 2016, 79, 217-234.	11.0	96
43	Probabilistic inference of multiâ€<scp>G</scp>aussian fields from indirect hydrological data using circulant embedding and dimensionality reduction. Water Resources Research, 2015, 51, 4224-4243.	4.2	39
44	Effect of limestone fillers on microstructure and permeability due to carbonation of cement pastes under controlled CO 2 pressure conditions. Construction and Building Materials, 2015, 82, 376-390.	7.2	105
45	Evolution of Microstructure and Transport Properties of Cement Pastes Due to Carbonation under a CO 2 Pressure Gradientâ€"A Modeling Approach. , 2015, , .		0
46	Benchmarks for multicomponent reactive transport across a cement/clay interface. Computational Geosciences, 2015, 19, 635-653.	2.4	43
47	A benchmark for multi-rate surface complexation and 1D dual-domain multi-component reactive transport of U(VI). Computational Geosciences, 2015, 19, 585-597.	2.4	8
48	Decalcification of cracked cement structures. Computational Geosciences, 2015, 19, 673-693.	2.4	13
49	A reactive transport model for mercury fate in contaminated soilâ€"sensitivity analysis. Environmental Science and Pollution Research, 2015, 22, 16830-16842.	5.3	19
50	Benchmark problems for reactive transport modeling of the generation and attenuation of acid rock drainage. Computational Geosciences, 2015, 19, 599-611.	2.4	26
51	Implementation and evaluation of permeability-porosity and tortuosity-porosity relationships linked to mineral dissolution-precipitation. Computational Geosciences, 2015, 19, 655-671.	2.4	60
52	Reactive transport codes for subsurface environmental simulation. Computational Geosciences, 2015, 19, 445-478.	2.4	566
53	Inorganic carbon fluxes across the vadose zone of planted and unplanted soil mesocosms. Biogeosciences, 2014, 11, 7179-7192.	3.3	12
54	Effects of Lime and Concrete Waste on Vadose Zone Carbon Cycling. Vadose Zone Journal, 2014, 13, 1-11.	2.2	10

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55	The Use of Multicomponent Solute Transport Models in Environmental Analyses. , 2014, , 377-402.		2
56	High-resolution moisture profiles from full-waveform probabilistic inversion of TDR signals. Journal of Hydrology, 2014, 519, 2121-2135.	5.4	8
57	A cement degradation model for evaluating the evolution of retardation factors in radionuclide leaching models. Applied Geochemistry, 2014, 49, 143-158.	3.0	12
58	A reactive transport model for mercury fate in soilâ€"application to different anthropogenic pollution sources. Environmental Science and Pollution Research, 2014, 21, 12279-12293.	5.3	32
59	Influence of fracture networks on radionuclide transport from solidified waste forms. Nuclear Engineering and Design, 2014, 270, 162-175.	1.7	9
60	A versatile pore-scale multicomponent reactive transport approach based on lattice Boltzmann method: Application to portlandite dissolution. Physics and Chemistry of the Earth, 2014, 70-71, 127-137.	2.9	33
61	Conceptual model analysis of interaction at a concreteâ€"Boom Clay interface. Physics and Chemistry of the Earth, 2014, 70-71, 150-159.	2.9	14
62	Determination of water permeability of cementitious materials using a controlled constant flow method. Construction and Building Materials, 2013, 47, 1488-1496.	7.2	69
63	Efficient posterior exploration of a highâ€dimensional groundwater model from twoâ€stage Markov chain Monte Carlo simulation and polynomial chaos expansion. Water Resources Research, 2013, 49, 2664-2682.	4.2	201
64	Inverse modelling with a genetic algorithm to derive hydraulic properties of a multi-layered forest soil. Soil Research, 2013, 51, 372.	1.1	16
65	Determination of 137Cs contamination depth distribution in building structures using geostatistical modeling of ISOCS measurements. Applied Radiation and Isotopes, 2013, 79, 25-36.	1.5	13
66	Influence of Cracks in Cementitious Engineered Barriers in a Near-Surface Disposal System: Assessment Analysis of the Belgian Case. , 2013, , .		0
67	Concrete in Engineered Barriers for Radioactive Waste Disposal Facilities: Phenomenological Study and Assessment of Long Term Performance. , 2013, , .		4
68	Geostatistical Mapping of Cs-137 Contamination Depth in Building Structures by Integrating ISOCS Measurements of Different Spatial Supports. , 2013, , .		0
69	A New Radionuclide Sorption Database for Benchmark Cement Accounting for Geochemical Evolution of Cement. , 2013, , 103-112.		4
70	A Consistent Approach for the Development of a Comprehensive Data Base of Time-Dependent Parameters for Concrete Engineered Barriers. , 2013, , .		1
71	Data Assimilation with Soil Water Content Sensors and Pedotransfer Functions in Soil Water Flow Modeling. Soil Science Society of America Journal, 2012, 76, 829-844.	2.2	25
72	Determining hydraulic properties of concrete and mortar by inverse modelling. Materials Research Society Symposia Proceedings, 2012, 1475, 367.	0.1	20

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73	Inverse optimization of hydraulic, solute transport, and cation exchange parameters using HP1 and UCODE to simulate cation exchange. Journal of Contaminant Hydrology, 2012, 142-143, 109-125.	3.3	20
74	Sensitivity of groundwater recharge using climatic analogues and HYDRUS-1D. Hydrology and Earth System Sciences, 2012, 16, 2485-2497.	4.9	47
75	Modelling of cation concentrations in the outflow of NaNO3 percolation experiments through Boom Clay cores. Physics and Chemistry of the Earth, 2011, 36, 1693-1699.	2.9	5
76	Evolution of Sorption Properties in Large-Scale Concrete Structures Accounting for Long-Term Physical-Chemical Concrete Degradation. , 2011, , .		2
77	Leaching of Contaminants to Groundwater. , 2011, , 787-850.		9
78	Geochemical modeling of leaching of Ca, Mg, Al, and Pb from cementitious waste forms. Cement and Concrete Research, 2010, 40, 1298-1305.	11.0	24
79	Modelling chemical degradation of concrete during leaching with rain and soil water types. Cement and Concrete Research, 2010, 40, 1306-1313.	11.0	76
80	Quantifying Conservatism of Performance Assessment Calculations by Sorption Model Reduction: Case Study on Near Field Cs Migration in Callovo-Oxfordian Clay. Materials Research Society Symposia Proceedings, 2009, 1193, 22.	0.1	1
81	Coupling Time-Dependent Sorption Values of Degrading Concrete With a Radionuclide Migration Model. , 2009, , .		3
82	Selected HYDRUS modules for modeling subsurface flow and contaminant transport as influenced by biological processes at various scales. Biologia (Poland), 2009, 64, 465-469.	1.5	14
83	Multimodel Simulation of Water Flow in a Field Soil Using Pedotransfer Functions. Vadose Zone Journal, 2009, 8, 1-10.	2.2	65
84	Retention of Cs in Boom Clay: Comparison of data from batch sorption tests and diffusion experiments on intact clay cores. Physics and Chemistry of the Earth, 2008, 33, S149-S155.	2.9	38
85	Modeling Coupled Hydrologic and Chemical Processes: Longâ€Term Uranium Transport following Phosphorus Fertilization. Vadose Zone Journal, 2008, 7, 698-711.	2.2	57
86	Modelling coupled water flow, solute transport and geochemical reactions affecting heavy metal migration in a podzol soil. Geoderma, 2008, 145, 449-461.	5.1	95
87	PHREEQC Modelling of Leaching of Major Elements and Heavy Metals From Cementitious Waste Forms. Materials Research Society Symposia Proceedings, 2008, 1107, 1.	0.1	4
88	Modelling Multi-Phase Flow Phenomena in Concrete Barriers Used for Geological Disposal of Radioactive Waste. , 2007, , .		3
89	Information content and complexity of simulated soil water fluxes. Geoderma, 2006, 134, 253-266.	5.1	49
90	MULTICOMPONENT GEOCHEMICAL TRANSPORT MODELING USING HYDRUSâ€1D AND HP1¹. Journal of the American Water Resources Association, 2006, 42, 1537-1547.	2.4	70

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91	Verification and intercomparison of reactive transport codes to describe root-uptake. Plant and Soil, 2006, 285, 305-321.	3.7	45
92	Operator-splitting errors in coupled reactive transport codes for transient variably saturated flow and contaminant transport in layered soil profiles. Journal of Contaminant Hydrology, 2006, 88, 197-218.	3.3	57
93	Fieldâ€Scale Water Flow Simulations Using Ensembles of Pedotransfer Functions for Soil Water Retention. Vadose Zone Journal, 2006, 5, 234-247.	2.2	71
94	Modelling uranium leaching from agricultural soils to groundwater as a criterion for comparison with complementary safety indicators. Materials Research Society Symposia Proceedings, 2006, 932, 1.	0.1	5
95	TEMPORAL PERSISTENCE IN VERTICAL DISTRIBUTIONS OF SOIL MOISTURE CONTENTS. Soil Science Society of America Journal, 2005, 69, 347-352.	2.2	99
96	Sensitivity of soil parameters in unsaturated zone modelling and the relation between effective, laboratory andin situ estimates. Hydrological Processes, 2005, 19, 1611-1633.	2.6	94
97	Including prior information in the estimation of effective soil parameters in unsaturated zone modelling. Journal of Hydrology, 2004, 294, 251-269.	5.4	79
98	Modelling 226Ra, 222Rn, and 210Pb Migration in a Proposed Surface Repository of Very Low-Level Long-Lived Radioactive Waste. , 2003, , 823.		1
99	INVERSE ESTIMATION OF SOIL HYDRAULIC AND SOLUTE TRANSPORT PARAMETERS FROM TRANSIENT FIELD EXPERIMENTS: HETEROGENEOUS SOIL. Transactions of the American Society of Agricultural Engineers, 2003, 46, 1097.	0.9	26
100	Multicomponent transport model for variably-saturated porous media: application to the transport of heavy metals in soils. Developments in Water Science, 2002, 47, 555-562.	0.1	3
101	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
102	Indirect estimation of near-saturated hydraulic conductivity from readily available soil information. Geoderma, 2002, 108, 1-17.	5.1	91
103	Calibration of Richards' and convectionâ€“dispersion equations to field-scale water flow and solute transport under rainfall conditions. Journal of Hydrology, 2002, 259, 15-31.	5.4	91
104	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
105	Sensitivity analysis of physical and chemical properties affecting field-scale cadmium transport in a heterogeneous soil profile. Journal of Hydrology, 2002, 264, 185-200.	5.4	41
106	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
107	Effect of spatial variation of textural layers on regional field water balance. Water Resources Research, 2001, 37, 1209-1219.	4.2	8
108	Study of time dependency of factors affecting the spatial distribution of soil water content in a field-plot. Physics and Chemistry of the Earth, 2001, 26, 629-634.	0.3	16

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109	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
110	Spatial variability of atrazine sorption parameters and other soil properties in a podzoluvisol. Journal of Contaminant Hydrology, 1999, 36, 31-52.	3.3	32
111	Modelling Water Flow and Solute Transport in Heterogeneous Soils: A Review of Recent Approaches. Biosystems Engineering, 1998, 70, 231-256.	0.4	93
112	Analysis of steady state chloride transport through two heterogeneous field soils. Water Resources Research, 1998, 34, 2539-2550.	4.2	40
113	Comparison of three hydraulic property measurement methods. Journal of Hydrology, 1997, 199, 295-318.	5.4	39
114	Comparison of three stream tube models predicting field-scale solute transport. Hydrology and Earth System Sciences, 1997, 1, 873-893.	4.9	9
115	Comparison between field measurements and numerical simulation of steady-state solute transport in a heterogeneous soil profile. Hydrology and Earth System Sciences, 1997, 1, 853-871.	4.9	8
116	Analysis of Solute Redistribution in Heterogeneous Soil. Quantitative Geology and Geostatistics, 1997, , 271-282.	0.1	3
117	A stochastic approach to simulate water flow in a macroporous soil. Geoderma, 1996, 70, 299-324.	5.1	50
118	SPATIAL VARIABILITY OF HYDRAULIC PROPERTIES IN A MULTI-LAYERED SOIL PROFILE. Soil Science, 1996, 161, 167-181.	0.9	142
119	Effect of Limestone Fillers on Ca-Leaching and Carbonation of Cement Pastes. Key Engineering Materials, 0, 711, 269-276.	0.4	4
120	6.6 Solute Transport During Variably Saturated Flow-Inverse Methods. Soil Science Society of America Book Series, 0, , 1435-1449.	0.3	7