

Brian D Wood

List of Publications by Year in descending order

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Version: 2024-02-01

80
papers

2,962
citations

136740

32
h-index

174990

52
g-index

85
all docs

85
docs citations

85
times ranked

2364
citing authors

#	ARTICLE	IF	CITATIONS
1	Processes in microbial transport in the natural subsurface. <i>Advances in Water Resources</i> , 2002, 25, 1017-1042.	1.7	258
2	A smoothed particle hydrodynamics model for reactive transport and mineral precipitation in porous and fractured porous media. <i>Water Resources Research</i> , 2007, 43, .	1.7	128
3	Homogenization via formal multiscale asymptotics and volume averaging: How do the two techniques compare?. <i>Advances in Water Resources</i> , 2013, 62, 178-206.	1.7	123
4	Diffusion and reaction in biofilms. <i>Chemical Engineering Science</i> , 1998, 53, 397-425.	1.9	105
5	Calculation of effective diffusivities for biofilms and tissues. <i>Biotechnology and Bioengineering</i> , 2002, 77, 495-516.	1.7	93
6	The role of scaling laws in upscaling. <i>Advances in Water Resources</i> , 2009, 32, 723-736.	1.7	93
7	Stochastic-Convective Transport with Nonlinear Reaction: Mathematical Framework. <i>Water Resources Research</i> , 1995, 31, 2675-2688.	1.7	88
8	In situ measurement of microbial activity and controls on microbial CO ₂ production in the unsaturated zone. <i>Water Resources Research</i> , 1993, 29, 647-659.	1.7	85
9	Increasing the performance of an anion-exchange membrane electrolyzer operating in pure water with a nickel-based microporous layer. <i>Joule</i> , 2021, 5, 1776-1799.	11.7	85
10	Stochastic-Convective Transport with Nonlinear Reaction: Biodegradation With Microbial Growth. <i>Water Resources Research</i> , 1995, 31, 2689-2700.	1.7	77
11	Modeling Turbulent Flows in Porous Media. <i>Annual Review of Fluid Mechanics</i> , 2020, 52, 171-203.	10.8	75
12	Imaging biofilm architecture within porous media using synchrotron-based X-ray computed microtomography. <i>Water Resources Research</i> , 2011, 47, .	1.7	68
13	Biofilms in porous media: Development of macroscopic transport equations via volume averaging with closure for local mass equilibrium conditions. <i>Advances in Water Resources</i> , 2009, 32, 463-485.	1.7	65
14	Effective reaction at a fluid-solid interface: Applications to biotransformation in porous media. <i>Advances in Water Resources</i> , 2007, 30, 1630-1647.	1.7	62
15	An Analysis Platform for Multiscale Hydrogeologic Modeling with Emphasis on Hybrid Multiscale Methods. <i>Ground Water</i> , 2015, 53, 38-56.	0.7	62
16	Possibility of chemical weathering before the advent of vascular land plants. <i>Nature</i> , 1993, 364, 223-225.	18.7	60
17	Occupation and local times for skew Brownian motion with applications to dispersion across an interface. <i>Annals of Applied Probability</i> , 2011, 21, .	0.6	60
18	Oxidative Remobilization of Biogenic Uranium(IV) Precipitates. <i>Journal of Environmental Quality</i> , 2005, 34, 1763-1771.	1.0	59

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19	Modeling contaminant transport and biodegradation in a layered porous media system. <i>Water Resources Research</i> , 1994, 30, 1833-1845.	1.7	58
20	Volume averaging for determining the effective dispersion tensor: Closure using periodic unit cells and comparison with ensemble averaging. <i>Water Resources Research</i> , 2003, 39, .	1.7	58
21	Theory and Applications of Macroscale Models in Porous Media. <i>Transport in Porous Media</i> , 2019, 130, 5-76.	1.2	58
22	Volume averaging: Local and nonlocal closures using a Green's function approach. <i>Advances in Water Resources</i> , 2013, 51, 139-167.	1.7	56
23	Multi-species diffusion and reaction in biofilms and cellular media. <i>Chemical Engineering Science</i> , 2000, 55, 3397-3418.	1.9	52
24	Inertial effects in dispersion in porous media. <i>Water Resources Research</i> , 2007, 43, .	1.7	49
25	Multidimensional, multicomponent, subsurface reactive transport in nonuniform velocity fields: code verification using an advective reactive streamtube approach. <i>Journal of Contaminant Hydrology</i> , 1998, 30, 299-331.	1.6	47
26	A particle-based model of size or anion exclusion with application to microbial transport in porous media. <i>Water Resources Research</i> , 2003, 39, .	1.7	45
27	Cellular growth in biofilms. , 1999, 64, 656-670.		40
28	Upscaling microbial chemotaxis in porous media. <i>Advances in Water Resources</i> , 2009, 32, 1413-1428.	1.7	40
29	A Generalized Taylor-Aris Formula and Skew Diffusion. <i>Multiscale Modeling and Simulation</i> , 2006, 5, 786-801.	0.6	36
30	The Role of Tortuosity in Upscaling. <i>Transport in Porous Media</i> , 2011, 88, 1-30.	1.2	36
31	A comparison of measured and modeled velocity fields for a laminar flow in a porous medium. <i>Advances in Water Resources</i> , 2015, 85, 45-63.	1.7	36
32	Effects of Microbial Metabolic Lag in Contaminant Transport and Biodegradation Modeling. <i>Water Resources Research</i> , 1995, 31, 553-563.	1.7	35
33	A note on the theoretical foundations of particle tracking methods in heterogeneous porous media. <i>Water Resources Research</i> , 2008, 44, .	1.7	32
34	Modeling non-equilibrium mass transport in biologically reactive porous media. <i>Advances in Water Resources</i> , 2010, 33, 1075-1093.	1.7	32
35	Jump conditions at non-uniform boundaries: the catalytic surface. <i>Chemical Engineering Science</i> , 2000, 55, 5231-5245.	1.9	31
36	Solute transport across an interface: A Fickian theory for skewness in breakthrough curves. <i>Water Resources Research</i> , 2010, 46, .	1.7	30

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37	Upscaling Diffusion and Nonlinear Reactive Mass Transport in Homogeneous Porous Media. <i>Transport in Porous Media</i> , 2015, 107, 683-716.	1.2	30
38	Comparison of theory and experiment for solute transport in highly heterogeneous porous medium. <i>Advances in Water Resources</i> , 2007, 30, 2235-2261.	1.7	28
39	Correspondence Between One- and Two-Equation Models for Solute Transport in Two-Region Heterogeneous Porous Media. <i>Transport in Porous Media</i> , 2012, 95, 213-238.	1.2	24
40	Metabolic uncoupling of <i>Shewanella oneidensis</i> MR4, under the influence of excess substrate and 3, 3', 4, 4'-tetrachlorosalicylanilide (TCS). <i>Biotechnology and Bioengineering</i> , 2008, 99, 1352-1360.	1.7	23
41	Ensemble-averaged equations for reactive transport in porous media under unsteady flow conditions. <i>Water Resources Research</i> , 1999, 35, 2053-2068.	1.7	22
42	Technical note: Revisiting the geometric theorems for volume averaging. <i>Advances in Water Resources</i> , 2013, 62, 340-352.	1.7	21
43	Preasymptotic Taylor dispersion: evolution from the initial condition. <i>Journal of Fluid Mechanics</i> , 2020, 889, .	1.4	21
44	Hydrogeologic parameters affecting vadose zone microbial distributions. <i>Geomicrobiology Journal</i> , 1991, 9, 197-216.	1.0	20
45	Transport and biodegradation of quinoline in horizontally stratified porous media. <i>Journal of Contaminant Hydrology</i> , 1994, 15, 277-304.	1.6	20
46	Stochastic solute transport under unsteady flow conditions: Comparison of theory, Monte Carlo Simulations, and field data. <i>Water Resources Research</i> , 1999, 35, 2069-2084.	1.7	20
47	Mass transfer process in a two-region medium. <i>Water Resources Research</i> , 2008, 44, .	1.7	20
48	Comparison of theory and experiments for dispersion in homogeneous porous media. <i>Advances in Water Resources</i> , 2010, 33, 1043-1052.	1.7	19
49	Multiscale Model Describing Bacterial Adhesion and Detachment. <i>Langmuir</i> , 2016, 32, 5213-5222.	1.6	19
50	Characteristics of turbulence in a face-centred cubic porous unit cell. <i>Journal of Fluid Mechanics</i> , 2019, 873, 608-645.	1.4	19
51	Flow and axial dispersion in a sinusoidal-walled tube: Effects of inertial and unsteady flows. <i>Advances in Water Resources</i> , 2013, 62, 215-226.	1.7	18
52	A multiscale model for carbon adsorption of BTX compounds: Comparison of volume averaging theory and experimental measurements. <i>Chemical Engineering Science</i> , 2018, 184, 285-308.	1.9	18
53	Estimation of adsorption rate coefficients based on the Smoluchowski equation. <i>Chemical Engineering Science</i> , 2004, 59, 1905-1921.	1.9	16
54	Comparison of theory and experiment for solute transport in weakly heterogeneous bimodal porous media. <i>Advances in Water Resources</i> , 2011, 34, 899-914.	1.7	16

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55	Investigating the influence of flow rate on biofilm growth in three dimensions using microimaging. <i>Advances in Water Resources</i> , 2018, 117, 1-13.	1.7	16
56	A connection between the Lagrangian stochastic convective and cumulant expansion approaches for describing solute transport in heterogeneous porous media. <i>Advances in Water Resources</i> , 1998, 22, 319-332.	1.7	12
57	Modeling Transport of Chemotactic Bacteria in Granular Media with Distributed Contaminant Sources. <i>Environmental Science & Technology</i> , 2017, 51, 14192-14198.	4.6	11
58	Dispersive transport in porous media with biofilms: local mass equilibrium in simple unit cells. <i>International Journal of Environment and Waste Management</i> , 2011, 7, 24.	0.2	10
59	A Priori Parameter Estimation for the Thermodynamically Constrained Averaging Theory: Species Transport in a Saturated Porous Medium. <i>Transport in Porous Media</i> , 2018, 122, 611-632.	1.2	9
60	The use of geochemical mass-balance and mixing models to determine groundwater sources. <i>Applied Geochemistry</i> , 1996, 11, 523-539.	1.4	8
61	Biological processes in porous media: From the pore scale to the field. <i>Advances in Water Resources</i> , 2007, 30, 1387-1391.	1.7	8
62	Multiscale modeling of chemotaxis in homogeneous porous media. <i>Water Resources Research</i> , 2011, 47, .	1.7	8
63	Implications of Growth and Starvation Conditions in Bacterial Adhesion and Transport. <i>Journal of Adhesion Science and Technology</i> , 2011, 25, 2281-2297.	1.4	8
64	A Pedagogical Approach to the Thermodynamically Constrained Averaging Theory. <i>Transport in Porous Media</i> , 2017, 119, 585-609.	1.2	8
65	A non-scale-invariant form for coarse-grained diffusion-reaction equations. <i>Journal of Chemical Physics</i> , 2016, 145, 114105.	1.2	6
66	A hierarchy of models for simulating experimental results from a 3D heterogeneous porous medium. <i>Advances in Water Resources</i> , 2018, 114, 149-163.	1.7	6
67	Editorial: Recent developments in upscaling and characterization of flow and transport in porous media. <i>Advances in Water Resources</i> , 2021, 150, 103886.	1.7	6
68	Corrections: Occupation and local times for skew Brownian motion with applications to dispersion across an interface. <i>Annals of Applied Probability</i> , 2011, 21, .	0.6	5
69	Application of Salting-Out Agent to Enhance the Hydrophobicity of Weakly Hydrophobic Bacterial Strains. <i>Journal of Adhesion Science and Technology</i> , 2011, 25, 2169-2182.	1.4	5
70	Characteristics of Porescale Vortical Structures in Random and Arranged Packed Beds of Spheres. , 2012, , .		5
71	Explicit physics-informed neural networks for nonlinear closure: The case of transport in tissues. <i>Journal of Computational Physics</i> , 2022, 449, 110781.	1.9	5
72	Reply to comment by Philippe Baveye on "The role of scaling laws in upscaling". <i>Advances in Water Resources</i> , 2010, 33, 125-127.	1.7	4

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73	Editorial: A tribute to Stephen Whitaker. <i>Advances in Water Resources</i> , 2013, 62, 173-177.	1.7	3
74	Skew Dispersion and Continuity of Local Time. <i>Journal of Statistical Physics</i> , 2014, 156, 384-394.	0.5	3
75	A primer on information processing in upscaling. <i>Advances in Water Resources</i> , 2020, 146, 103760.	1.7	3
76	Transport of chemotactic bacteria in granular media with randomly distributed chemoattractant-containing NAPL ganglia: Modeling and simulation. <i>Advances in Water Resources</i> , 2021, , 104065.	1.7	3
77	Processes in Microbial Transport in the Natural Subsurface. <i>ChemInform</i> , 2003, 34, no.	0.1	2
78	Kinetic parameter estimation in <i>N. europaea</i> biofilms using a 2D reactive transport model. <i>Biotechnology and Bioengineering</i> , 2015, 112, 1122-1131.	1.7	2
79	Bacterial Chemotaxis in Porous Media: Theory Derivation and Comparison with Experiments. , 2010, , .		1
80	Experimental Versus Computational Methods in the Study of Flow in Porous Media. , 2014, , .		0