

# Bernard P Boudreau

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/6103284/publications.pdf>

Version: 2024-02-01

96  
papers

6,419  
citations

81900

39  
h-index

76900

74  
g-index

105  
all docs

105  
docs citations

105  
times ranked

4459  
citing authors

#	ARTICLE	IF	CITATIONS
1	Diagenetic Models and Their Implementation. , 1997, , .		603
2	The diffusive tortuosity of fine-grained unlithified sediments. <i>Geochimica Et Cosmochimica Acta</i> , 1996, 60, 3139-3142.	3.9	588
3	The dependence of bacterial sulfate reduction on sulfate concentration in marine sediments. <i>Geochimica Et Cosmochimica Acta</i> , 1984, 48, 2503-2516.	3.9	240
4	A method-of-lines code for carbon and nutrient diagenesis in aquatic sediments. <i>Computers and Geosciences</i> , 1996, 22, 479-496.	4.2	236
5	Mean mixed depth of sediments: The wherefore and the why. <i>Limnology and Oceanography</i> , 1998, 43, 524-526.	3.1	234
6	Mathematics of tracer mixing in sediments; I, Spatially-dependent, diffusive mixing. <i>Numerische Mathematik</i> , 1986, 286, 161-198.	1.4	229
7	Bubble growth and rise in soft sediments. <i>Geology</i> , 2005, 33, 517.	4.4	221
8	Is burial velocity a master parameter for bioturbation?. <i>Geochimica Et Cosmochimica Acta</i> , 1994, 58, 1243-1249.	3.9	212
9	Burrow extension by crack propagation. <i>Nature</i> , 2005, 433, 475-475.	27.8	147
10	Relations between local, nonlocal, discrete and continuous models of bioturbation. <i>Journal of Marine Research</i> , 2003, 61, 391-410.	0.3	139
11	Mechanical response of sediments to bubble growth. <i>Marine Geology</i> , 2002, 187, 347-363.	2.1	134
12	On the equivalence of nonlocal and radial-diffusion models for porewater irrigation. <i>Journal of Marine Research</i> , 1984, 42, 731-735.	0.3	128
13	Plutonium and <sup>210</sup> Pb distributions in northeast Atlantic sediments: subsurface anomalies caused by non-local mixing. <i>Earth and Planetary Science Letters</i> , 1986, 81, 15-28.	4.4	120
14	The physics of bubbles in surficial, soft, cohesive sediments. <i>Marine and Petroleum Geology</i> , 2012, 38, 1-18.	3.3	116
15	A comparison of closed- and open-system models for porewater pH and calcite-saturation state. <i>Geochimica Et Cosmochimica Acta</i> , 1993, 57, 317-334.	3.9	103
16	A steady-state diagenetic model for dissolved carbonate species and pH in the porewaters of oxic and suboxic sediments. <i>Geochimica Et Cosmochimica Acta</i> , 1987, 51, 1985-1996.	3.9	90
17	A provisional diagenetic model for pH in anoxic porewaters: Application to the FOAM Site. <i>Journal of Marine Research</i> , 1988, 46, 429-455.	0.3	89
18	Bubble-induced porewater mixing: A 3-D model for deep porewater irrigation. <i>Geochimica Et Cosmochimica Acta</i> , 2007, 71, 5135-5154.	3.9	89

#	ARTICLE	IF	CITATIONS
19	The Early Diagenetic Formation of Organic Sulfur in the Sediments of Mangrove Lake, Bermuda. <i>Geochimica Et Cosmochimica Acta</i> , 1998, 62, 767-781.	3.9	86
20	Current CaCO <sub>3</sub> dissolution at the seafloor caused by anthropogenic CO <sub>2</sub> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 11700-11705.	7.1	83
21	Modeling reactive transport in sediments subject to bioturbation and compaction. <i>Geochimica Et Cosmochimica Acta</i> , 2005, 69, 3601-3617.	3.9	77
22	Modelling the sulfide-oxygen reaction and associated pH gradients in porewaters. <i>Geochimica Et Cosmochimica Acta</i> , 1991, 55, 145-159.	3.9	70
23	A modelling study of discontinuous biological irrigation. <i>Journal of Marine Research</i> , 1994, 52, 947-968.	0.3	66
24	Metals and models: Diagenic modelling in freshwater lacustrine sediments. <i>Journal of Paleolimnology</i> , 1999, 22, 227-251.	1.6	61
25	Multicomponent ionic diffusion in porewaters: Coulombic effects revisited. <i>Earth and Planetary Science Letters</i> , 2004, 222, 653-666.	4.4	60
26	The mathematics of early diagenesis: From worms to waves. <i>Reviews of Geophysics</i> , 2000, 38, 389-416.	23.0	56
27	Predicted tortuosity of muds. <i>Geology</i> , 2006, 34, 693.	4.4	50
28	Carbonate compensation dynamics. <i>Geophysical Research Letters</i> , 2010, 37, .	4.0	50
29	The role of calcification in carbonate compensation. <i>Nature Geoscience</i> , 2018, 11, 894-900.	12.9	50
30	Growth of disk-shaped bubbles in sediments. <i>Geochimica Et Cosmochimica Acta</i> , 2003, 67, 1485-1494.	3.9	47
31	Transient growth of an isolated bubble in muddy, fine-grained sediments. <i>Geochimica Et Cosmochimica Acta</i> , 2009, 73, 2581-2591.	3.9	47
32	Macrofaunal Burrowing. <i>Oceanography and Marine Biology</i> , 2006, , 85-122.	1.0	47
33	Rate of growth of isolated bubbles in sediments with a diagenetic source of methane. <i>Limnology and Oceanography</i> , 2001, 46, 616-622.	3.1	46
34	The effect of resuspension on chemical exchanges at the sediment-water interface in the deep sea – A modelling and natural radiotracer approach. <i>Journal of Marine Systems</i> , 1997, 11, 305-342.	2.1	45
35	Shallow seabed methane gas could pose coastal hazard. <i>Eos</i> , 2006, 87, 213.	0.1	43
36	A one-dimensional model for bed-boundary layer particle exchange. <i>Journal of Marine Systems</i> , 1997, 11, 279-303.	2.1	41

#	ARTICLE	IF	CITATIONS
37	Comparative diagenesis at three sites on the Canadian continental margin. <i>Journal of Marine Research</i> , 1998, 56, 1259-1284.	0.3	41
38	Diagenetic mobility of trace elements in sediments covered by a flash flood deposit: Mn, Fe and As. <i>Applied Geochemistry</i> , 2003, 18, 1011-1026.	3.0	40
39	In situ tensile fracture toughness of surficial cohesive marine sediments. <i>Geo-Marine Letters</i> , 2012, 32, 39-48.	1.1	38
40	Lattice-automaton bioturbation simulator (LABS): implementation for small deposit feeders. <i>Computers and Geosciences</i> , 2002, 28, 213-222.	4.2	36
41	Comment on "Physical Model for the Decay and Preservation of Marine Organic Carbon". <i>Science</i> , 2008, 319, 1616-1616.	12.6	36
42	When and why does bioturbation lead to diffusive mixing?. <i>Journal of Marine Research</i> , 2010, 68, 881-920.	0.3	36
43	A simple evolutionary model for water and salt in the Black Sea. <i>Paleoceanography</i> , 1989, 4, 157-166.	3.0	35
44	An experimental and modeling study of pH and related solutes in an irrigated anoxic coastal sediment. <i>Journal of Marine Research</i> , 1996, 54, 939-966.	0.3	35
45	Steady-state tracer dynamics in a lattice-automaton model of bioturbation. <i>Geochimica Et Cosmochimica Acta</i> , 2006, 70, 5855-5867.	3.9	35
46	A generalized stochastic approach to particle dispersal in soils and sediments. <i>Geochimica Et Cosmochimica Acta</i> , 2008, 72, 3460-3478.	3.9	35
47	Release of multiple bubbles from cohesive sediments. <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	4.0	35
48	Asymptotic forms and solutions of the model for silicaopal diagenesis in bioturbated sediments. <i>Journal of Geophysical Research</i> , 1990, 95, 7367-7379.	3.3	33
49	A kinetic model for microbic organic-matter decomposition in marine sediments. <i>FEMS Microbiology Letters</i> , 1992, 102, 1-14.	1.8	33
50	Diffusion in a lattice-automaton model of bioturbation by small deposit feeders. <i>Journal of Marine Research</i> , 2001, 59, 749-768.	0.3	33
51	Ongoing transients in carbonate compensation. <i>Global Biogeochemical Cycles</i> , 2010, 24, .	4.9	32
52	Gas domes in soft cohesive sediments. <i>Geology</i> , 2012, 40, 379-382.	4.4	32
53	Carbonate dissolution rates at the deep ocean floor. <i>Geophysical Research Letters</i> , 2013, 40, 744-748.	4.0	32
54	Gas hydrate dissociation prolongs acidification of the Anthropocene oceans. <i>Geophysical Research Letters</i> , 2015, 42, 9337.	4.0	32

#	ARTICLE	IF	CITATIONS
55	Bioturbation and porosity gradients. <i>Limnology and Oceanography</i> , 1998, 43, 1-9.	3.1	32
56	Early diagenesis in a marine sapropel, Mangrove Lake, Bermuda. <i>Limnology and Oceanography</i> , 1992, 37, 1738-1753.	3.1	29
57	Bioturbation and porosity gradients. <i>Limnology and Oceanography</i> , 1998, 43, 1-9.	3.1	29
58	Calcite dissolution kinetics at the sediment-water interface in natural seawater. <i>Marine Chemistry</i> , 2017, 195, 70-83.	2.3	27
59	Modelling the distribution of stable carbon isotopes in porewaters of deep-sea sediments. <i>Geochimica Et Cosmochimica Acta</i> , 1999, 63, 2763-2773.	3.9	23
60	Quantifying particle dispersal in aquatic sediments at short time scales: model selection. <i>Aquatic Biology</i> , 2008, 2, 239-254.	1.4	22
61	The diffusion and telegraph equations in diagenetic modelling. <i>Geochimica Et Cosmochimica Acta</i> , 1989, 53, 1857-1866.	3.9	21
62	Sedimentary and geo-mechanical properties of Willapa Bay tidal flats. <i>Continental Shelf Research</i> , 2013, 60, S198-S207.	1.8	20
63	An alternative model for CaCO <sub>3</sub> over-shooting during the PETM: Biological carbonate compensation. <i>Earth and Planetary Science Letters</i> , 2016, 453, 223-233.	4.4	19
64	Secular variations in the carbonate chemistry of the oceans over the Cenozoic. <i>Earth and Planetary Science Letters</i> , 2019, 512, 194-206.	4.4	18
65	A theoretical investigation of the organic carbon-microbial biomass relation in muddy sediments. <i>Aquatic Microbial Ecology</i> , 1999, 17, 181-189.	1.8	18
66	A new instrument for high-resolution in situ assessment of Young's modulus in shallow cohesive sediments. <i>Geo-Marine Letters</i> , 2012, 32, 349-357.	1.1	16
67	Disparate acidification and calcium carbonate desaturation of deep and shallow waters of the Arctic Ocean. <i>Nature Communications</i> , 2016, 7, 12821.	12.8	16
68	Simulated fiddler-crab sediment mixing. <i>Journal of Marine Research</i> , 2007, 65, 491-522.	0.3	14
69	Small-scale, high-precision and high-accuracy determination of Poisson's ratios in cohesive marine sediments. <i>Geo-Marine Letters</i> , 2013, 33, 75-81.	1.1	14
70	Control of CaCO <sub>3</sub> dissolution at the deep seafloor and its consequences. <i>Geochimica Et Cosmochimica Acta</i> , 2020, 268, 90-106.	3.9	14
71	The nonlocal model of porewater irrigation: Limits to its equivalence with a cylinder diffusion model. <i>Journal of Marine Research</i> , 2005, 63, 437-455.	0.3	13
72	Material Constraints on Infaunal Lifestyles: May the Persistent and Strong Forces be with You. , 2007, , 442-457.		13

#	ARTICLE	IF	CITATIONS
73	Retrodiction of secular variations in deep-sea CaCO <sub>3</sub> burial during the Cenozoic. <i>Earth and Planetary Science Letters</i> , 2017, 474, 1-12.	4.4	13
74	Modelling early diagenesis of silica in non-mixed sediments. <i>Deep-sea Research Part A, Oceanographic Research Papers</i> , 1990, 37, 1543-1567.	1.5	12
75	Invariance of the carbonate chemistry of the South China Sea from the glacial period to the Holocene and its implications to the Pacific Ocean carbonate system. <i>Earth and Planetary Science Letters</i> , 2018, 492, 112-120.	4.4	11
76	Transient tracer dynamics in a lattice-automaton model of bioturbation. <i>Journal of Marine Research</i> , 2007, 65, 813-833.	0.3	10
77	The influence of porosity gradients on mixing coefficients in sediments. <i>Geochimica Et Cosmochimica Acta</i> , 2007, 71, 961-973.	3.9	10
78	Cenozoic carbonate burial along continental margins. <i>Geology</i> , 2019, 47, 1025-1028.	4.4	9
79	Future acidification of marginal seas: A comparative study of the Japan/East Sea and the South China Sea. <i>Geophysical Research Letters</i> , 2016, 43, 6393-6401.	4.0	8
80	A theoretical study of diagenetic concentration fields near manganese nodules at the sediment-water interface. <i>Journal of Geophysical Research</i> , 1989, 94, 2124-2136.	3.3	7
81	Controlling the diffusive boundary layer thickness above the sediment-water interface in a thermostated rotating-disk reactor. <i>Limnology and Oceanography: Methods</i> , 2019, 17, 241-253.	2.0	7
82	Rouse revisited: The bottom boundary condition for suspended sediment profiles. <i>Marine Geology</i> , 2020, 419, 106066.	2.1	7
83	What controls the mixed-layer depth in deep-sea sediments? The importance of particulate organic carbon flux. <i>Limnology and Oceanography</i> , 2004, 49, 620-622.	3.1	5
84	Slow growth of an isolated disk-shaped bubble of constant eccentricity in the presence of a distributed gas source. <i>Applied Mathematical Modelling</i> , 2003, 27, 817-829.	4.2	4
85	Modelling mixing and diagenesis. <i>Coastal and Estuarine Studies</i> , 2005, , 323-340.	0.4	4
86	A lattice-automaton bioturbation simulator with coupled physics, chemistry, and biology in marine sediments (eLABS v0.2). <i>Geoscientific Model Development</i> , 2019, 12, 4469-4496.	3.6	4
87	Effects of discontinuous vs. continuous irrigation on dissolved silica fluxes from marine sediments. <i>Chemical Geology</i> , 1993, 107, 439-441.	3.3	3
88	Effects of Deep Circulation on CaCO <sub>3</sub> Dissolution and Accumulation in the Southwestern Atlantic Ocean. <i>Geophysical Research Letters</i> , 2022, 49, .	4.0	3
89	Inverse Modeling of the Net Water Balance of the Black Sea From the Last Glacial Maximum to the Present. <i>Paleoceanography and Paleoclimatology</i> , 2021, 36, e2021PA004242.	2.9	2
90	Nodule morphology and growth model. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2008, 105, E21; author reply E22.	7.1	1

#	ARTICLE	IF	CITATIONS
91	Reduced CaCO <sub>3</sub> Flux to the Seafloor and Weaker Bottom Current Speeds Curtail Benthic CaCO <sub>3</sub> Dissolution Over the 21st Century. <i>Global Biogeochemical Cycles</i> , 2019, 33, 1654-1673.	4.9	1
92	The Mechanics of Soft Cohesive Sediments During Early Diagenesis. <i>SERDP and ESTCP Remediation Technology Monograph Series</i> , 2014, , 81-105.	0.3	1
93	A kinetic model for microbic organic-matter decomposition in marine sediments. <i>FEMS Microbiology Letters</i> , 1992, 102, 1-14.	1.8	1
94	Memory Effects in Salinity Profiles From Black Sea Sediments. <i>Paleoceanography and Paleoclimatology</i> , 2022, 37, .	2.9	1
95	Flow and reactions in permeable rocks. <i>Geochimica Et Cosmochimica Acta</i> , 1992, 56, 1771-1772.	3.9	0
96	Memory Effects in Salinity Profiles from Black Sea Sediments. <i>Paleoceanography and Paleoclimatology</i> , 0, , .	2.9	0