Richard E Zeebe

List of Publications by Year
in descending order

94 papers	13,043 citations	44069 48 h-index	39675 94 g-index
97 all docs	97 docs citations	97 times ranked	11202 citing authors

#	Article	IF	Citations
1	An early Cenozoic perspective on greenhouse warming and carbon-cycle dynamics. Nature, 2008, 451, 279-283.	27.8	2,725
2	Reduced calcification of marine plankton in response to increased atmospheric CO2. Nature, 2000, 407, 364-367.	27.8	1,276
3	The Geological Record of Ocean Acidification. Science, 2012, 335, 1058-1063.	12.6	828
4	Total alkalinity: The explicit conservative expression and its application to biogeochemical processes. Marine Chemistry, 2007, 106, 287-300.	2.3	477
5	The role of the global carbonate cycle in the regulation and evolution of the Earth system. Earth and Planetary Science Letters, 2005, 234, 299-315.	4.4	460
6	Carbon dioxide forcing alone insufficient to explain Palaeoceneâ€“Eocene Thermal Maximum warming. Nature Geoscience, 2009, 2, 576-580.	12.9	367
7	A Cenozoic record of the equatorial Pacific carbonate compensation depth. Nature, 2012, 488, 609-614.	27.8	342
8	History of Seawater Carbonate Chemistry, Atmospheric CO₂, and Ocean Acidification. Annual Review of Earth and Planetary Sciences, 2012, 40, 141-165.	11.0	321
9	An explanation of the effect of seawater carbonate concentration on foraminiferal oxygen isotopes. Geochimica Et Cosmochimica Acta, 1999, 63, 2001-2007.	3.9	306
10	Anthropogenic carbon release rate unprecedented during the past 66 million years. Nature Geoscience, 2016, 9, 325-329.	12.9	295
11	Decreasing marine biogenic calcification: A negative feedback on rising atmosphericpCO2. Global Biogeochemical Cycles, 2001, 15, 507-516.	4.9	289
12	Carbon Emissions and Acidification. Science, 2008, 321, 51-52.	12.6	233
13	Atmospheric CO₂ decline during the Pliocene intensification of Northern Hemisphere glaciations. Paleoceanography, 2011, 26, .	3.0	218
14	On the molecular diffusion coefficients of dissolved , and and their dependence on isotopic mass. Geochimica Et Cosmochimica Acta, 2011, 75, 2483-2498.	3.9	218
15	History of carbonate ion concentration over the last 100 million years. Geochimica Et Cosmochimica Acta, 2004, 68, 3521-3530.	3.9	204
16	Rapid and sustained surface ocean acidification during the Paleoceneâ€Eocene Thermal Maximum. Paleoceanography, 2014, 29, 357-369.	3.0	176
17	A simple model for the CaCO3saturation state of the ocean: The â€œStrangelove,â€•the â€œNeritan,â€•and the â€œCretanâ€•Ocean. Geochemistry, Geophysics, Geosystems, 2003, 4, .	2.5	172
18	Stable boron isotope fractionation between dissolved B(OH)3 and B(OH)4âˆ’. Geochimica Et Cosmochimica Acta, 2005, 69, 2753-2766.	3.9	151

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19	Determination of the rate constants for the carbon dioxide to bicarbonate inter-conversion in pH-buffered seawater systems. Marine Chemistry, 2006, 100, 53-65.	2.3	143
20	Model simulation of the carbonate chemistry in the microenvironment of symbiont bearing foraminifera. Marine Chemistry, 1999, 64, 181-198.	2.3	128
21	Quantitative interpretation of atmospheric carbon records over the last glacial termination. Global Biogeochemical Cycles, 2005, 19, n/a-n/a.	4.9	124
22	The influence of symbiont photosynthesis on the boron isotopic composition of foraminifera shells. Marine Micropaleontology, 2003, 49, 87-96.	1.2	122
23	Plate tectonic controls on atmospheric CO ₂ levels since the Triassic. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 4380-4385.	7.1	122
24	Solar System chaos and the Paleoceneâ€"Eocene boundary age constrained by geology and astronomy. Science, 2019, 365, 926-929.	12.6	118
25	Seawater pH and isotopic paleotemperatures of Cretaceous oceans. Palaeogeography, Palaeoclimatology, Palaeoecology, 2001, 170, 49-57.	2.3	115
26	Reversed deepâ€sea carbonate ion basin gradient during Paleoceneâ€Eocene thermal maximum. Paleoceanography, 2007, 22, .	3.0	111
27	LOSCAR: Long-term Ocean-atmosphere-Sediment CArbon cycle Reservoir Model v2.0.4. Geoscientific Model Development, 2012, 5, 149-166.	3.6	111
28	Comparison of two potential strategies of planktonic foraminifera for house building: Mg 2+ or H + removal?. Geochimica Et Cosmochimica Acta, 2002, 66, 1159-1169.	3.9	106
29	Beyond temperature: Clumped isotope signatures in dissolved inorganic carbon species and the influence of solution chemistry on carbonate mineral composition. Geochimica Et Cosmochimica Acta, 2015, 166, 344-371.	3.9	104
30	Planktic foraminiferal shell thinning in the Arabian Sea due to anthropogenic ocean acidification?. Biogeosciences, 2009, 6, 1917-1925.	3.3	101
31	A new value for the stable oxygen isotope fractionation between dissolved sulfate ion and water. Geochimica Et Cosmochimica Acta, 2010, 74, 818-828.	3.9	97
32	A diffusion-reaction model of carbon isotope fractionation in foraminifera. Marine Chemistry, 1999, 64, 199-227.	2.3	96
33	Close mass balance of long-term carbon fluxes from ice-core CO2 and ocean chemistry records. Nature Geoscience, 2008, 1, 312-315.	12.9	94
34	CO₂ perturbation experiments: similarities and differences between dissolved inorganic carbon and total alkalinity manipulations. Biogeosciences, 2009, 6, 2145-2153.	3.3	93
35	The effect of carbonic anhydrase on the kinetics and equilibrium of the oxygen isotope exchange in the CO2â€"H2O system: Implications for Î´18O vital effects in biogenic carbonates. Geochimica Et Cosmochimica Acta, 2012, 95, 15-34.	3.9	92
36	The DeepMIP contribution to PMIP4: experimental design for model simulations of the EECO, PETM, and pre-PETM (version 1.0). Geoscientific Model Development, 2017, 10, 889-901.	3.6	90

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37	A theoretical study of the kinetics of the boric acidâ€"borate equilibrium in seawater. Marine Chemistry, 2001, 73, 113-124.	2.3	88
38	On the time required to establish chemical and isotopic equilibrium in the carbon dioxide system in seawater. Marine Chemistry, 1999, 65, 135-153.	2.3	87
39	Modeling the dissolution of settling CaCO3in the ocean. Global Biogeochemical Cycles, 2002, 16, 11-1-11-16.	4.9	73
40	Long-term legacy of massive carbon input to the Earth system: Anthropocene versus Eocene. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2013, 371, 20120006.	3.4	73
41	An abyssal carbonate compensation depth overshoot in the aftermath of the Palaeoceneâ€"Eocene Thermal Maximum. Nature Geoscience, 2016, 9, 575-580.	12.9	73
42	Vital effects in foraminifera do not compromise the use of Î´11B as a paleo-pH indicator: Evidence from modeling. Paleoceanography, 2003, 18, n/a-n/a.	3.0	71
43	Experimental evidence for kinetic effects on B/Ca in synthetic calcite: Implications for potential B(OH)4â^' and B(OH)3 incorporation. Geochimica Et Cosmochimica Acta, 2015, 150, 171-191.	3.9	71
44	A middle Eocene carbon cycle conundrum. Nature Geoscience, 2013, 6, 429-434.	12.9	68
45	Feasibility of ocean fertilization and its impact on future atmospheric CO2levels. Geophysical Research Letters, 2005, 32, .	4.0	61
46	Early detection of ocean acidification effects on marine calcification. Global Biogeochemical Cycles, 2009, 23, .	4.9	60
47	An expression for the overall oxygen isotope fractionation between the sum of dissolved inorganic carbon and water. Geochemistry, Geophysics, Geosystems, 2007, 8, .	2.5	57
48	Examining possible effects of seawater pH decline on foraminiferal stable isotopes during the Paleocene-Eocene Thermal Maximum. Paleoceanography, 2010, 25, .	3.0	56
49	Understanding long-term carbon cycle trends: The late Paleocene through the early Eocene. Paleoceanography, 2013, 28, 650-662.	3.0	52
50	History of carbonate ion concentration over the last 100 million years II: Revised calculations and new data. Geochimica Et Cosmochimica Acta, 2019, 257, 373-392.	3.9	51
51	Kinetic fractionation of carbon and oxygen isotopes during hydration of carbon dioxide. Geochimica Et Cosmochimica Acta, 2014, 139, 540-552.	3.9	49
52	What caused the long duration of the Paleoceneâ€Eocene Thermal Maximum?. Paleoceanography, 2013, 28, 440-452.	3.0	48
53	Future ocean increasingly transparent to low-frequency sound owing to carbon dioxideÂemissions. Nature Geoscience, 2010, 3, 18-22.	12.9	47
54	Orbital forcing of the Paleocene and Eocene carbon cycle. Paleoceanography, 2017, 32, 440-465.	3.0	45

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55	Modeling CO2 chemistry, Î´13C, and oxidation of organic carbon and methane in sediment porewater: Implications for paleo-proxies in benthic foraminifera. Geochimica Et Cosmochimica Acta, 2007, 71, 3238-3256.	3.9	44
56	Onset of carbon isotope excursion at the Paleocene-Eocene thermal maximum took millennia, not 13 years. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, E1062-3.	7.1	44
57	Hydration in solution is critical for stable oxygen isotope fractionation between carbonate ion and water. Geochimica Et Cosmochimica Acta, 2009, 73, 5283-5291.	3.9	40
58	Influence of terrestrial weathering on ocean acidification and the next glacial inception. Geophysical Research Letters, 2008, 35, .	4.0	38
59	Vital effects and beyond: a modelling perspective on developing palaeoceanographical proxy relationships in foraminifera. Geological Society Special Publication, 2008, 303, 45-58.	1.3	37
60	Comment on â€œModernâ€age buildup of CO₂ and its effects on seawater acidity and salinityâ€• by Hugo A. LoÃ¡iciga. Geophysical Research Letters, 2007, 34, .	4.0	36
61	Time-dependent climate sensitivity and the legacy of anthropogenic greenhouse gas emissions. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 13739-13744.	7.1	36
62	Calcium and calcium isotope changes during carbon cycle perturbations at the end-Permian. Paleoceanography, 2016, 31, 115-130.	3.0	35
63	Drivers of future seasonal cycle changes in oceanic <i>p</i>CO₂. Biogeosciences, 2018, 15, 5315-5327.	3.3	35
64	Numerical Solutions for the Orbital Motion of the Solar System over the Past 100 Myr: Limits and New Results*. Astronomical Journal, 2017, 154, 193.	4.7	33
65	Boric acid and borate incorporation in inorganic calcite inferred from B/Ca, boron isotopes and surface kinetic modeling. Geochimica Et Cosmochimica Acta, 2019, 244, 229-247.	3.9	31
66	Detection and projection of carbonate dissolution in the water column and deepâ€sea sediments due to ocean acidification. Geophysical Research Letters, 2012, 39, .	4.0	30
67	The Magnitude of Surface Ocean Acidification and Carbon Release During Eocene Thermal Maximum 2 (ETMâ€2) and the Paleoceneâ€Eocene Thermal Maximum (PETM). Paleoceanography and Paleoclimatology, 2020, 35, e2019PA003699.	2.9	30
68	Late Lutetian Thermal Maximumâ€"Crossing a Thermal Threshold in Earth's Climate System?. Geochemistry, Geophysics, Geosystems, 2018, 19, 73-82.	2.5	29
69	Influence of solution chemistry on the boron content in inorganic calcite grown in artificial seawater. Geochimica Et Cosmochimica Acta, 2017, 218, 291-307.	3.9	26
70	Constraints on hyperthermals. Nature Geoscience, 2012, 5, 231-231.	12.9	24
71	DYNAMIC STABILITY OF THE SOLAR SYSTEM: STATISTICALLY INCONCLUSIVE RESULTS FROM ENSEMBLE INTEGRATIONS. Astrophysical Journal, 2015, 798, 8.	4.5	24
72	Oceanic calcium changes from enhanced weathering during the Paleoceneâ€Eocene thermal maximum: No effect on calciumâ€based proxies. Paleoceanography, 2011, 26, .	3.0	23

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73	Quantifying the volcanic emissions which triggered Oceanic Anoxic Event 1a and their effect on ocean acidification. Sedimentology, 2017, 64, 204-214.	3.1	22
74	Assessing possible consequences of ocean liming on ocean pH, atmospheric CO2 concentration and associated costs. International Journal of Greenhouse Gas Control, 2013, 17, 183-188.	4.6	21
75	Redox-controlled carbon and phosphorus burial: A mechanism for enhanced organic carbon sequestration during the PETM. Earth and Planetary Science Letters, 2017, 479, 71-82.	4.4	21
76	Kinetic isotope effects during CO2 hydration: Experimental results for carbon and oxygen fractionation. Geochimica Et Cosmochimica Acta, 2020, 279, 189-203.	3.9	18
77	The 405â€‰kyr and 2.4â€‰Myr eccentricity components in Cenozoic carbon isotope records. Climate of the Past, 2019, 15, 91-104.	3.4	17
78	Equilibria, kinetics, and boron isotope partitioning in the aqueous boric acidâ€"hydrofluoric acid system. Chemical Geology, 2020, 550, 119693.	3.3	17
79	Atmosphere and ocean chemistry. Nature Geoscience, 2010, 3, 386-387.	12.9	16
80	Where are you heading Earth?. Nature Geoscience, 2011, 4, 416-417.	12.9	16
81	HIGHLY STABLE EVOLUTION OF EARTH'S FUTURE ORBIT DESPITE CHAOTIC BEHAVIOR OF THE SOLAR SYSTEM. Astrophysical Journal, 2015, 811, 9.	4.5	16
82	No discernible effect of Mg2+ ions on the equilibrium oxygen isotope fractionation in the CO2â€"H2O system. Chemical Geology, 2013, 343, 1-11.	3.3	15
83	Subtropical sea-surface warming and increased salinity during Eocene Thermal Maximum 2. Geology, 2018, 46, 187-190.	4.4	13
84	Reconciling atmospheric CO ₂ , weathering, and calcite compensation depth across the Cenozoic. Science Advances, 2021, 7, .	10.3	13
85	Ocean chemistry and atmospheric CO₂sensitivity to carbon perturbations throughout the Cenozoic. Geophysical Research Letters, 2010, 37, .	4.0	12
86	Trajectory and timescale of oxygen and clumped isotope equilibration in the dissolved carbonate system under normal and enzymatically-catalyzed conditions at 25ÂÂ°C. Geochimica Et Cosmochimica Acta, 2021, 314, 313-333.	3.9	12
87	Oxygen isotope fractionation between water and the aqueous hydroxide ion. Geochimica Et Cosmochimica Acta, 2020, 289, 182-195.	3.9	11
88	Reply to the comment by P. Deines on â€œAn explanation of the effect of seawater carbonate concentration on foraminiferal oxygen isotopes,â€•by R. E. Zeebe (1999). Geochimica Et Cosmochimica Acta, 2005, 69, 789-790.	3.9	9
89	Geologically constrained astronomical solutions for the Cenozoic era. Earth and Planetary Science Letters, 2022, 592, 117595.	4.4	9
90	Comment on â€œ Scrutinizing the carbon cycle and CO 2 residence time in the atmosphere â€•by H. Harde. Global and Planetary Change, 2018, 164, 67-71.	3.5	8

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91	Anthropogenic Intensification of Surface Ocean Interannual pCO₂ Variability. Geophysical Research Letters, 2020, 47, e2020GL087104.	4.0	8
92	A Deepâ€Time Dating Tool for Paleoâ€Applications Utilizing Obliquity and Precession Cycles: The Role of Dynamical Ellipticity and Tidal Dissipation. Paleoceanography and Paleoclimatology, 2022, 37, .	2.9	7
93	Comment on â€œThe Effects of Secular Calcium and Magnesium Concentration Changes on the Thermodynamics of Seawater Acid/Base Chemistry: Implications for Eocene and Cretaceous Ocean Carbon Chemistry and Bufferingâ€•by Hain et al. (2015). Global Biogeochemical Cycles, 2018, 32, 895-897.	4.9	5
94	Stepsize errors in the <i>N</i>-body problem: discerning Mercuryâ€™s true possible long-term orbits. Monthly Notices of the Royal Astronomical Society, 2022, 510, 4302-4307.	4.4	4