Andrew J Watson

List of Publications by Year
in descending order

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Version: 2024-02-01

129 papers	16,977 citations	28190 55 h-index	16127 124 g-index
135 all docs	135 docs citations	135 times ranked	13501 citing authors

#	Article	IF	Citations
1	Biological homeostasis of the global environment: the parable of Daisyworld. Tellus, Series B: Chemical and Physical Meteorology, 2022, 35, 284.	0.8	208
2	A comparison of multiple regression and neural network techniques for mapping in situ pCO₂ data. Tellus, Series B: Chemical and Physical Meteorology, 2022, 57, 375.	0.8	30
3	The Integrated Carbon Observation System in Europe. Bulletin of the American Meteorological Society, 2022, 103, E855-E872.	1.7	44
4	Tidal mixing of estuarine and coastal waters in the western English Channel is a control on spatial and temporal variability in seawater CO₂. Biogeosciences, 2022, 19, 1657-1674.	1.3	5
5	Global Carbon Budget 2021. Earth System Science Data, 2022, 14, 1917-2005.	3.7	663
6	The rise of angiosperms strengthened fire feedbacks and improved the regulation of atmospheric oxygen. Nature Communications, 2021, 12, 503.	5.8	18
7	Winter Airâ€Sea CO₂ Fluxes Constructed From Summer Observations of the Polar Southern Ocean Suggest Weak Outgassing. Journal of Geophysical Research: Oceans, 2021, 126, e2020JC016600.	1.0	10
8	Circulation-driven variability of Atlantic anthropogenic carbon transports and uptake. Nature Geoscience, 2021, 14, 571-577.	5.4	15
9	Variability of North Atlantic CO₂ fluxes for the 2000â€“2017 period estimated from atmospheric inverse analyses. Biogeosciences, 2021, 18, 4549-4570.	1.3	1
10	Revised estimates of ocean-atmosphere CO2 flux are consistent with ocean carbon inventory. Nature Communications, 2020, 11, 4422.	5.8	129
11	Tracking the spread of a passive tracer through Southern Ocean water masses. Ocean Science, 2020, 16, 323-336.	1.3	9
12	Meridional Overturning Circulation in a Multibasin Model. Part I: Dependence on Southern Ocean Buoyancy Forcing. Journal of Physical Oceanography, 2020, 50, 1159-1178.	0.7	10
13	Global Carbon Budget 2020. Earth System Science Data, 2020, 12, 3269-3340.	3.7	1,477
14	Reconciling Observation and Model Trends in North Atlantic Surface CO₂. Global Biogeochemical Cycles, 2019, 33, 1204-1222.	1.9	14
15	On the Future of Argo: A Global, Full-Depth, Multi-Disciplinary Array. Frontiers in Marine Science, 2019, 6, .	1.2	235
16	Key Uncertainties in the Recent Airâ€Sea Flux of CO₂. Global Biogeochemical Cycles, 2019, 33, 1548-1563.	1.9	54
17	Constraining the Oceanic Uptake and Fluxes of Greenhouse Gases by Building an Ocean Network of Certified Stations: The Ocean Component of the Integrated Carbon Observation System, ICOS-Oceans. Frontiers in Marine Science, 2019, 6, .	1.2	13
18	Diapycnal Mixing in the Southern Ocean Diagnosed Using the DIMES Tracer and Realistic Velocity Fields. Journal of Geophysical Research: Oceans, 2018, 123, 2615-2634.	1.0	2

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19	Long-Term Planetary Habitability and the Carbonate-Silicate Cycle. Astrobiology, 2018, 18, 469-480.	1.5	20
20	Global Carbon Budget 2017. Earth System Science Data, 2018, 10, 405-448.	3.7	801
21	Ocean ventilation and deoxygenation in a warming world: posters. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20170241.	1.6	1
22	Ocean deoxygenation, the global phosphorus cycle and the possibility of human-caused large-scale ocean anoxia. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160318.	1.6	43
23	Ocean ventilation and deoxygenation in a warming world: introduction and overview. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20170240.	1.6	34
24	A measurement system for vertical seawater profiles close to the airâ€“sea interface. Ocean Science, 2017, 13, 649-660.	1.3	9
25	Oceans on the edge of anoxia. Science, 2016, 354, 1529-1530.	6.0	31
26	A multi-decade record of high-quality <i>f</i>CO₂ data in version 3 of the Surface Ocean CO₂ Atlas (SOCAT). Earth System Science Data, 2016, 8, 383-413.	3.7	413
27	Carbon dynamics of the Weddell Gyre, Southern Ocean. Global Biogeochemical Cycles, 2015, 29, 288-306.	1.9	24
28	Estimating a Submesoscale Diffusivity Using a Roughness Measure Applied to a Tracer Release Experiment in the Southern Ocean. Journal of Physical Oceanography, 2015, 45, 1610-1631.	0.7	11
29	Southern Ocean buoyancy forcing of ocean ventilation and glacial atmospheric CO2. Nature Geoscience, 2015, 8, 861-864.	5.4	99
30	Trends in anthropogenic CO2 in water masses of the Subtropical North Atlantic Ocean. Progress in Oceanography, 2015, 131, 21-32.	1.5	15
31	Proterozoic oxygen rise linked to shifting balance between seafloor and terrestrial weathering. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 9073-9078.	3.3	66
32	Direct Estimate of Lateral Eddy Diffusivity Upstream of Drake Passage. Journal of Physical Oceanography, 2014, 44, 2593-2616.	0.7	68
33	Rapid cross-density ocean mixing at mid-depths in the Drake Passage measured by tracer release. Nature, 2013, 501, 408-411.	13.7	61
34	Habitable Zone Lifetimes of Exoplanets around Main Sequence Stars. Astrobiology, 2013, 13, 833-849.	1.5	92
35	Dynamic seasonal cycling of inorganic carbon downstream of South Georgia, Southern Ocean. Deep-Sea Research Part II: Topical Studies in Oceanography, 2012, 59-60, 25-35.	0.6	31
36	The runaway greenhouse: implications for future climate change, geoengineering and planetary atmospheres. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2012, 370, 4197-4216.	1.6	84

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37	Diapycnal diffusivities from a tracer release experiment in the deep sea, integrated over 13 years. Geophysical Research Letters, 2012, 39, .	1.5	8
38	Monitoring and interpreting the ocean uptake of atmospheric CO ₂. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2011, 369, 1997-2008.	1.6	8
39	Symbiotic physiology promotes homeostasis in Daisyworld. Journal of Theoretical Biology, 2011, 274, 170-182.	0.8	18
40	Timing of Neoproterozoic glaciations linked to transport-limited global weathering. Nature Geoscience, 2011, 4, 861-864.	5.4	83
41	Meridional Density Gradients Do Not Control the Atlantic Overturning Circulation. Journal of Physical Oceanography, 2010, 40, 368-380.	0.7	54
42	Rapid changes in surface water carbonate chemistry during Antarctic sea ice melt. Tellus, Series B: Chemical and Physical Meteorology, 2010, 62, 621-635.	0.8	18
43	Anthropogenic carbon accumulation in the subtropical North Atlantic. Journal of Geophysical Research, 2010, 115, .	3.3	26
44	Tracking the Variable North Atlantic Sink for Atmospheric CO ₂. Science, 2009, 326, 1391-1393.	6.0	173
45	Nitrogen-enhanced greenhouse warming on earlyÂEarth. Nature Geoscience, 2009, 2, 891-896.	5.4	247
46	Climatological mean and decadal change in surface ocean pCO2, and net seaâ€“air CO2 flux over the global oceans. Deep-Sea Research Part II: Topical Studies in Oceanography, 2009, 56, 554-577.	0.6	1,540
47	Trends in North Atlantic sea-surface fCO2 from 1990 to 2006. Deep-Sea Research Part II: Topical Studies in Oceanography, 2009, 56, 620-629.	0.6	119
48	Transports of Nordic Seas water masses and excess SF6 through Fram Strait to the Arctic Ocean. Progress in Oceanography, 2008, 78, 1-11.	1.5	32
49	The Greenland Sea tracer experiment 1996â€“2002: Horizontal mixing and transport of Greenland Sea Intermediate Water. Progress in Oceanography, 2008, 78, 85-105.	1.5	32
50	Ocean biogeochemical response to phytoplanktonâ€light feedback in a global model. Journal of Geophysical Research, 2008, 113, .	3.3	33
51	Implications of an Anthropic Model of Evolution for Emergence of Complex Life and Intelligence. Astrobiology, 2008, 8, 175-185.	1.5	42
52	An operational monitoring system to provide indicators of CO2-related variables in the ocean. ICES Journal of Marine Science, 2008, 65, 1498-1503.	1.2	27
53	The island mass effect and biological carbon uptake for the subantarctic Crozet Archipelago. Deep-Sea Research Part II: Topical Studies in Oceanography, 2007, 54, 2174-2190.	0.6	50
54	A variable and decreasing sink for atmospheric CO₂ in the North Atlantic. Journal of Geophysical Research, 2007, 112, .	3.3	195

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55	Short-circuiting of the overturning circulation in the Antarctic Circumpolar Current. Nature, 2007, 447, 194-197.	13.7	81
56	Matching carbon pools and fluxes for the Southern Ocean Iron Release Experiment (SOIREE). Deep-Sea Research Part I: Oceanographic Research Papers, 2006, 53, 1941-1960.	0.6	7
57	The role of Southern Ocean mixing and upwelling in glacial-interglacial atmospheric CO2 change. Tellus, Series B: Chemical and Physical Meteorology, 2006, 58, 73-87.	0.8	167
58	Bistability of atmospheric oxygen and the Great Oxidation. Nature, 2006, 443, 683-686.	13.7	243
59	The CO2 system in a Redfield context during an iron enrichment experiment in the Southern Ocean. Marine Chemistry, 2005, 95, 89-105.	0.9	23
60	Seasonal sea-surface carbon dioxide in the Azores area. Marine Chemistry, 2005, 96, 35-51.	0.9	15
61	Can limited ocean mixing buffer rapid climate change?. Tellus, Series A: Dynamic Meteorology and Oceanography, 2005, 57, 676-690.	0.8	5
62	Intermediate water from the Greenland Sea in the Faroe Bank Channel: spreading of released sulphur hexafluoride. Deep-Sea Research Part I: Oceanographic Research Papers, 2005, 52, 279-294.	0.6	18
63	Iron and mixing affect biological carbon uptake in SOIREE and EisenEx, two Southern Ocean iron fertilisation experiments. Deep-Sea Research Part I: Oceanographic Research Papers, 2005, 52, 1001-1019.	0.6	38
64	Bio-optical feedbacks among phytoplankton, upper ocean physics and sea-ice in a global model. Geophysical Research Letters, 2005, 32, .	1.5	162
65	Air-sea gas exchange in Antarctic waters. Antarctic Science, 2004, 16, 517-529.	0.5	18
66	Biotic enhancement of weathering, atmospheric oxygen and carbon dioxide in the Neoproterozoic. Geophysical Research Letters, 2004, 31, n/a-n/a.	1.5	96
67	A decrease in the sink for atmospheric CO2in the North Atlantic. Geophysical Research Letters, 2004, 31, n/a-n/a.	1.5	92
68	Turbulent diapycnal mixing in the Nordic seas. Journal of Geophysical Research, 2004, 109, .	3.3	37
69	Carbon Dioxide Fluxes in the Global Ocean. , 2003, , 123-143.		36
70	Implications of coral reef buildup for the controls on atmospheric CO2since the Last Glacial Maximum. Paleoceanography, 2003, 18, n/a-n/a.	3.0	90
71	Modeling the response of the oceanic Si inventory to perturbation, and consequences for atmospheric CO2. Global Biogeochemical Cycles, 2002, 16, 19-1-19-25.	1.9	50
72	Long-lived vortices as a mode of deep ventilation in the Greenland Sea. Nature, 2002, 416, 525-527.	13.7	89

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73	Determination of Persian Gulf Water Transport and oxygen utilisation rates using SF6as a novel transient tracer. Geophysical Research Letters, 2001, 28, 815-818.	1.5	29
74	Chlorofluorocarbon-derived formation rates of the deep and bottom waters of the Weddell Sea. Journal of Geophysical Research, 2001, 106, 2899-2919.	3.3	22
75	A Lagrangian SF6 tracer study of an anticyclonic eddy in the North Atlantic: patch evolution, vertical mixing and nutrient supply to the mixed layer. Deep-Sea Research Part II: Topical Studies in Oceanography, 2001, 48, 705-724.	0.6	92
76	Southern Ocean iron enrichment promotes inorganic carbon drawdown. Deep-Sea Research Part II: Topical Studies in Oceanography, 2001, 48, 2483-2507.	0.6	59
77	Tracer Release Experiments. , 2001, , 333-339.		0
78	Tracer Release Experiments. , 2001, , 3004-3009.		0
79	Tracer Release Experiments. , 2001, , 87-92.		0
80	A mesoscale phytoplankton bloom in the polar Southern Ocean stimulated by iron fertilization. Nature, 2000, 407, 695-702.	13.7	1,417
81	Redfield revisited: 1. Regulation of nitrate, phosphate, and oxygen in the ocean. Global Biogeochemical Cycles, 2000, 14, 225-248.	1.9	182
82	Redfield revisited: 2. What regulates the oxygen content of the atmosphere?. Global Biogeochemical Cycles, 2000, 14, 249-268.	1.9	144
83	In situ evaluation of air-sea gas exchange parameterizations using novel conservative and volatile tracers. Global Biogeochemical Cycles, 2000, 14, 373-387.	1.9	1,177
84	On the sources of Weddell Gyre Antarctic Bottom Water. Journal of Geophysical Research, 2000, 105, 1093-1104.	3.3	81
85	Oceanographic tracer release experiments using sulphur hexafluoride. Journal of Geophysical Research, 2000, 105, 14325-14337.	3.3	37
86	The sensitivity of atmospheric CO2 concentrations to input of iron to the oceans. Tellus, Series B: Chemical and Physical Meteorology, 1999, 51, 453-460.	0.8	10
87	Coevolution of the Earthâ€™s environment and life: Goldilocks, Gaia and the anthropic principle. Geological Society Special Publication, 1999, 150, 75-88.	0.8	31
88	Assessing the seasonality of the oceanic sink for CO2in the northern hemisphere. Global Biogeochemical Cycles, 1999, 13, 273-286.	1.9	20
89	Modeling the geochemical cycle of iron in the oceans and its impact on atmospheric CO2concentrations. Global Biogeochemical Cycles, 1999, 13, 727-736.	1.9	107
90	Variation of pCO2 along a North Atlantic shipping route (U.K. to the Caribbean): A year of automated observations. Marine Chemistry, 1998, 60, 147-164.	0.9	89

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91	Mixing of a tracer in the pycnocline. Journal of Geophysical Research, 1998, 103, 21499-21529.	3.3	488
92	Physical evolution of the IronEx-I open ocean tracer patch. Deep-Sea Research Part II: Topical Studies in Oceanography, 1998, 45, 947-975.	0.6	24
93	Sulphur hexafluoride as a tracer of biogeochemical and physical processes in an open-ocean iron fertilisation experiment. Deep-Sea Research Part II: Topical Studies in Oceanography, 1998, 45, 977-994.	0.6	72
94	Marine biological controls on climate via the carbon and sulphur geochemical cycles. Philosophical Transactions of the Royal Society B: Biological Sciences, 1998, 353, 41-51.	1.8	60
95	Variability ofpCO2in the tropical Atlantic in 1995. Journal of Geophysical Research, 1998, 103, 5623-5634.	3.3	47
96	The flow of Antarctic bottom water to the southwest Indian Ocean estimated using CFCs. Journal of Geophysical Research, 1998, 103, 27637-27653.	3.3	62
97	Volcanic iron, CO2, ocean productivity and climate. Nature, 1997, 385, 587-588.	13.7	110
98	On the use of carbon tetrachloride as a transient tracer of Weddell Sea deep and bottom waters. Geophysical Research Letters, 1996, 23, 2943-2946.	1.5	22
99	A summer-time sink for atmospheric carbon dioxide in the Southern Ocean between 88Â°W and 80Â°E. Deep-Sea Research Part II: Topical Studies in Oceanography, 1995, 42, 1081-1091.	0.6	55
100	Thermal skin effect and the air-sea flux of carbon dioxide: A seasonal high-resolution estimate. Global Biogeochemical Cycles, 1995, 9, 253-262.	1.9	49
101	Chlorofluorocarbon-113 in the northeast Atlantic. Journal of Geophysical Research, 1995, 100, 10745.	3.3	21
102	Automated vacuum analysis of sulphur hexafluoride in seawater: derivation of the atmospheric trend (1970â€“1993) and potential as a transient tracer. Marine Chemistry, 1994, 48, 57-69.	0.9	86
103	The impact of a coccolithophore bloom on oceanic carbon uptake in the northeast Atlantic during summer 1991. Deep-Sea Research Part I: Oceanographic Research Papers, 1994, 41, 297-314.	0.6	146
104	Evidence for slow mixing across the pycnocline from an open-ocean tracer-release experiment. Nature, 1993, 364, 701-703.	13.7	903
105	Diurnal variation in surface pCO2 and O2 at 60Â°N, 20Â°W in the North Atlantic. Deep-Sea Research Part II: Topical Studies in Oceanography, 1993, 40, 409-422.	0.6	55
106	The influence of the spring phytoplankton bloom on carbon dioxide and oxygen concentrations in the surface waters of the northeast Atlantic during 1989. Deep-sea Research Part A, Oceanographic Research Papers, 1992, 39, 137-152.	1.6	33
107	The BOFS 1990 spring bloom experiment: Temporal evolution and spatial variability of the hydrographic field. Progress in Oceanography, 1992, 29, 235-281.	1.5	58
108	The Santa Monica Basin tracer experiment: A study of diapycnal and isopycnal mixing. Journal of Geophysical Research, 1991, 96, 8695-8718.	3.3	72

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109	Integrating samplers for the deep sea. Journal of Geophysical Research, 1991, 96, 8727-8732.	3.3	9
110	Analysis of sulfur hexafluoride in seawater. Journal of Geophysical Research, 1991, 96, 8733-8740.	3.3	71
111	The Santa Monica Basin tracer experiment: Comparison of release methods and performance of perfluorodecalin and sulfur hexafluoride. Journal of Geophysical Research, 1991, 96, 8719-8725.	3.3	20
112	Design of a small-scale in situ iron fertilization experiment. Limnology and Oceanography, 1991, 36, 1960-1965.	1.6	49
113	Airâ€“sea gas exchange in rough and stormy seas measured by a dual-tracer technique. Nature, 1991, 349, 145-147.	13.7	280
114	Spatial variability in the sink for atmospheric carbon dioxide in the North Atlantic. Nature, 1991, 350, 50-53.	13.7	191
115	Sulphur hexafluoride and helium-3 as sea-water tracers: deployment techniques and continuous underway analysis for sulphur hexafluoride. Analytica Chimica Acta, 1991, 249, 555-562.	2.6	42
116	The use of Deliberately Injected Tracers for the Study of Diapycnal Mixing in the Ocean. Elsevier Oceanography Series, 1988, 46, 11-20.	0.1	3
117	Reply to â€œls gullying associated with highly sodic colluvium? Further comment to the environmental interpretation of southern African dongasâ€• Palaeogeography, Palaeoclimatology, Palaeoecology, 1987, 58, 123-128.	1.0	7
118	Perfluorodecalin and sulphur hexafluoride as purposeful marine tracers: some deployment and analysis techniques. Deep-sea Research Part A, Oceanographic Research Papers, 1987, 34, 19-31.	1.6	32
119	A deliberate tracer experiment in Santa Monica Basin. Nature, 1986, 323, 322-324.	13.7	52
120	Recent history of atmospheric trace gas concentrations deduced from measurements in the deep sea: Application to sulphur hexafluoride and carbon tetrachloride. Atmospheric Environment, 1985, 19, 1477-1484.	1.1	33
121	Composition of particles in the global ocean. Deep-sea Research Part A, Oceanographic Research Papers, 1985, 32, 1023-1039.	1.6	27
122	Temperatures in a runaway greenhouse on the evolving Venus: implications for water loss. Earth and Planetary Science Letters, 1984, 68, 1-6.	1.8	28
123	Biological homeostasis of the global environment: the parable of Daisyworld. Tellus, Series B: Chemical and Physical Meteorology, 1983, 35B, 284-289.	0.8	223
124	New observations on the prehistory and palaeoclimate of the Late Pleistocene in southern Africa. World Archaeology, 1982, 13, 372-381.	0.5	8
125	The regulation of carbon dioxide and climate: Gaia or geochemistry. Planetary and Space Science, 1982, 30, 795-802.	0.9	86
126	Stability of Pluto's atmosphere. Icarus, 1982, 51, 665-667.	1.1	107

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127	The dynamics of a rapidly escaping atmosphere: Applications to the evolution of Earth and Venus. Icarus, 1981, 48, 150-166.	1.1	473
128	Methanogenesis, fires and the regulation of atmospheric oxygen. BioSystems, 1978, 10, 293-298.	0.9	170
129	Electron-capture detector. Journal of Chromatography A, 1978, 158, 123-138.	1.8	71