

Anand Gnanadesikan

List of Publications by Year in descending order

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118
papers

13,075
citations

57758

44
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24258

110
g-index

139
all docs

139
docs citations

139
times ranked

12016
citing authors

#	ARTICLE	IF	CITATIONS
1	Isopycnal mixing. , 2022, , 215-256.		3
2	Characterizing the Roles of Biogeochemical Cycling and Ocean Circulation in Regulating Marine Copper Distributions. Journal of Geophysical Research: Oceans, 2022, 127, .	2.6	5
3	Using neural network ensembles to separate ocean biogeochemical and physical drivers of phytoplankton biogeography in Earth system models. Geoscientific Model Development, 2022, 15, 1595-1617.	3.6	0
4	Abundant and persistent sulfur-oxidizing microbial populations are responsive to hypoxia in the Chesapeake Bay. Environmental Microbiology, 2022, 24, 2315-2332.	3.8	10
5	Can machine learning extract the mechanisms controlling phytoplankton growth from large-scale observations? – A proof-of-concept study. Biogeosciences, 2021, 18, 1941-1970.	3.3	6
6	Interannual SAM Modulation of Antarctic Sea Ice Extent Does Not Account for Its Long-Term Trends, Pointing to a Limited Role for Ozone Depletion. Geophysical Research Letters, 2021, 48, e2021GL094871.	4.0	12
7	Scaling Global Warming Impacts on Ocean Ecosystems: Lessons From a Suite of Earth System Models. Frontiers in Marine Science, 2020, 7, .	2.5	10
8	Relationship between Age and Oxygen along Line W in the Northwest Atlantic Ocean. Ocean Science Journal, 2020, 55, 203-217.	1.3	1
9	Strength of Linkages Between Dust and Circulation Over North Africa: Results From a Coupled Modeling System With Active Dust. Journal of Geophysical Research D: Atmospheres, 2020, 125, e2019JD030961.	3.3	4
10	The Impact of Parameterized Lateral Mixing on the Antarctic Circumpolar Current in a Coupled Climate Model. Journal of Physical Oceanography, 2020, 50, 965-982.	1.7	8
11	Feedbacks Driving Interdecadal Variability in Southern Ocean Convection in Climate Models: A Coupled Oscillator Mechanism. Journal of Physical Oceanography, 2020, 50, 2227-2249.	1.7	7
12	The Southern Ocean Sea Surface Temperature Response to Ozone Depletion: A Multimodel Comparison. Journal of Climate, 2019, 32, 5107-5121.	3.2	22
13	Variations in Ocean Deoxygenation Across Earth System Models: Isolating the Role of Parameterized Lateral Mixing. Global Biogeochemical Cycles, 2019, 33, 703-724.	4.9	24
14	Impact of Colored Dissolved Materials on the Annual Cycle of Sea Surface Temperature: Potential Implications for Extreme Ocean Temperatures. Geophysical Research Letters, 2019, 46, 861-869.	4.0	13
15	Large Eddy Simulation of Heat Entrainment Under Arctic Sea Ice. Journal of Geophysical Research: Oceans, 2018, 123, 287-304.	2.6	10
16	Relationship between Ocean Carbon and Heat Multidecadal Variability. Journal of Climate, 2018, 31, 1467-1482.	3.2	9
17	Flux Correction and Overturning Stability: Insights from a Dynamical Box Model. Journal of Climate, 2018, 31, 9335-9350.	3.2	3
18	Simulated Dust Aerosol Impacts on Western Sahelian Rainfall: Importance of Ocean Coupling. Journal of Climate, 2018, 31, 9107-9124.	3.2	9

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19	Upper Ocean Cooling in a Coupled Climate Model Due to Light Attenuation by Yellowing Materials. <i>Geophysical Research Letters</i> , 2018, 45, 6134-6140.	4.0	14
20	Realistic Paleobathymetry of the Cenomanian–Turonian (94 Ma) Boundary Global Ocean. <i>Geosciences</i> (Switzerland), 2018, 8, 21.	2.2	3
21	Transient Response of the Southern Ocean to Changing Ozone: Regional Responses and Physical Mechanisms. <i>Journal of Climate</i> , 2017, 30, 2463-2480.	3.2	19
22	Are the Central Andes Mountains a Warming Hot Spot?. <i>Journal of Climate</i> , 2017, 30, 3589-3608.	3.2	19
23	Regional Responses to Black Carbon Aerosols: The Importance of Air–Sea Interaction. <i>Journal of Geophysical Research D: Atmospheres</i> , 2017, 122, 12,982.	3.3	4
24	Global Atmospheric Teleconnections and Multidecadal Climate Oscillations Driven by Southern Ocean Convection. <i>Journal of Climate</i> , 2017, 30, 8107-8126.	3.2	37
25	Impact of Lateral Mixing in the Ocean on El Nino in a Suite of Fully Coupled Climate Models. <i>Journal of Advances in Modeling Earth Systems</i> , 2017, 9, 2493-2513.	3.8	18
26	Increased Surface Ocean Heating by Colored Detrital Matter (CDM) Linked to Greater Northern Hemisphere Ice Formation in the GFDL CM2Mc ESM. <i>Journal of Climate</i> , 2016, 29, 9063-9076.	3.2	14
27	Challenges in modeling spatiotemporally varying phytoplankton blooms in the Northwestern Arabian Sea and Gulf of Oman. <i>Biogeosciences</i> , 2016, 13, 1049-1069.	3.3	7
28	Turbulent heat exchange between water and ice at an evolving ice–water interface. <i>Journal of Fluid Mechanics</i> , 2016, 798, 572-597.	3.4	11
29	Interdecadal <i>Trichodesmium</i> variability in cold North Atlantic waters. <i>Global Biogeochemical Cycles</i> , 2016, 30, 1620-1638.	4.9	12
30	The Transient Response of the Southern Ocean to Stratospheric Ozone Depletion. <i>Journal of Climate</i> , 2016, 29, 7383-7396.	3.2	25
31	Southern Hemisphere extratropical circulation: Recent trends and natural variability. <i>Geophysical Research Letters</i> , 2015, 42, 5508-5515.	4.0	42
32	Isopycnal mixing by mesoscale eddies significantly impacts oceanic anthropogenic carbon uptake. <i>Geophysical Research Letters</i> , 2015, 42, 4249-4255.	4.0	71
33	Complex functionality with minimal computation: Promise and pitfalls of reduced–tracer ocean biogeochemistry models. <i>Journal of Advances in Modeling Earth Systems</i> , 2015, 7, 2012-2028.	3.8	49
34	Scaling laws for perturbations in the ocean–atmosphere system following large CO ₂ emissions. <i>Climate of the Past</i> , 2015, 11, 991-1007.	3.4	1
35	Exploring the isopycnal mixing and helium–heat paradoxes in a suite of Earth system models. <i>Ocean Science</i> , 2015, 11, 591-605.	3.4	17
36	Quantifying the biological impact of surface ocean light attenuation by colored detrital matter in an ESM using a new optical parameterization. <i>Biogeosciences</i> , 2015, 12, 5119-5132.	3.3	22

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37	OESbathy version 1.0: a method for reconstructing ocean bathymetry with generalized continental shelf-slope-rise structures. <i>Geoscientific Model Development</i> , 2015, 8, 2735-2748.	3.6	6
38	Regional Atmospheric Circulation and Rainfall Variability in South Equatorial Africa. <i>Journal of Climate</i> , 2015, 28, 809-818.	3.2	44
39	Multidecadal increase in North Atlantic coccolithophores and the potential role of rising CO ₂ . <i>Science</i> , 2015, 350, 1533-1537.	12.6	112
40	Understanding Multidecadal Variability in ENSO Amplitude. <i>Journal of Climate</i> , 2014, 27, 4037-4051.	3.2	14
41	The Deep Ocean Buoyancy Budget and Its Temporal Variability. <i>Journal of Climate</i> , 2014, 27, 551-573.	3.2	29
42	How does the Redi parameter for mesoscale mixing impact global climate in an Earth System Model?. <i>Journal of Advances in Modeling Earth Systems</i> , 2014, 6, 586-601.	3.8	35
43	Connecting Atlantic temperature variability and biological cycling in two earth system models. <i>Journal of Marine Systems</i> , 2014, 133, 39-54.	2.1	12
44	Impact of climate warming on upper layer of the Bering Sea. <i>Climate Dynamics</i> , 2013, 40, 327-340.	3.8	11
45	Critical role for mesoscale eddy diffusion in supplying oxygen to hypoxic ocean waters. <i>Geophysical Research Letters</i> , 2013, 40, 5194-5198.	4.0	51
46	Investigation of the Surface and Circulation Impacts of Cloud-Brightening Geoengineering. <i>Journal of Climate</i> , 2012, 25, 7527-7543.	3.2	8
47	Investigation of land ice-ocean interaction with a fully coupled ice-ocean model: 1. Model description and behavior. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	33
48	Investigation of land ice-ocean interaction with a fully coupled ice-ocean model: 2. Sensitivity to external forcings. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	22
49	On the coupled response to ice-shelf basal melting. <i>Journal of Glaciology</i> , 2012, 58, 203-215.	2.2	16
50	Understanding why the volume of suboxic waters does not increase over centuries of global warming in an Earth System Model. <i>Biogeosciences</i> , 2012, 9, 1159-1172.	3.3	62
51	The impacts of changing transport and precipitation on pollutant distributions in a future climate. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	47
52	Changes in ocean circulation and carbon storage are decoupled from air-sea CO ₂ fluxes. <i>Biogeosciences</i> , 2011, 8, 505-513.	3.3	8
53	What ocean biogeochemical models can tell us about bottom-up control of ecosystem variability. <i>ICES Journal of Marine Science</i> , 2011, 68, 1030-1044.	2.5	24
54	Interhemispheric gradient of atmospheric radiocarbon reveals natural variability of Southern Ocean winds. <i>Climate of the Past</i> , 2011, 7, 1123-1138.	3.4	37

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55	The GFDL CM3 Coupled Climate Model: Characteristics of the Ocean and Sea Ice Simulations. Journal of Climate, 2011, 24, 3520-3544.	3.2	288
56	Water Mass Exchange in the Southern Ocean in Coupled Climate Models. Journal of Physical Oceanography, 2011, 41, 1756-1771.	1.7	46
57	Climate Variability and Radiocarbon in the CM2Mc Earth System Model. Journal of Climate, 2011, 24, 4230-4254.	3.2	88
58	Meridional Density Gradients Do Not Control the Atlantic Overturning Circulation. Journal of Physical Oceanography, 2010, 40, 368-380.	1.7	54
59	Fueling export production: nutrient return pathways from the deep ocean and their dependence on the Meridional Overturning Circulation. Biogeosciences, 2010, 7, 3549-3568.	3.3	68
60	Regional impacts of iron-light colimitation in a global biogeochemical model. Biogeosciences, 2010, 7, 1043-1064.	3.3	152
61	Efficiency of small scale carbon mitigation by patch iron fertilization. Biogeosciences, 2010, 7, 3593-3624.	3.3	64
62	How ocean color can steer Pacific tropical cyclones. Geophysical Research Letters, 2010, 37, .	4.0	35
63	Low helium flux from the mantle inferred from simulations of oceanic helium isotope data. Earth and Planetary Science Letters, 2010, 297, 379-386.	4.4	64
64	Regional impacts of ocean color on tropical Pacific variability. Ocean Science, 2009, 5, 313-327.	3.4	37
65	Correction to "Using altimetry to help explain patchy changes in hydrographic carbon measurements". Journal of Geophysical Research, 2009, 114, .	3.3	0
66	Using altimetry to help explain patchy changes in hydrographic carbon measurements. Journal of Geophysical Research, 2009, 114, .	3.3	14
67	How ice shelf morphology controls basal melting. Journal of Geophysical Research, 2009, 114, .	3.3	63
68	Estimating the contribution of strong daily export events to total pollutant export from the United States in summer. Journal of Geophysical Research, 2009, 114, .	3.3	13
69	Ocean Water Clarity and the Ocean General Circulation in a Coupled Climate Model. Journal of Physical Oceanography, 2009, 39, 314-332.	1.7	71
70	Impact of oceanic circulation on biological carbon storage in the ocean and atmospheric CO_2 . Global Biogeochemical Cycles, 2008, 22, .	4.9	118
71	How does ocean biology affect atmospheric CO_2 ? Theory and models. Journal of Geophysical Research, 2008, 113, .	3.3	70
72	Large-Scale Oceanographic Constraints on the Distribution of Melting and Freezing under Ice Shelves. Journal of Physical Oceanography, 2008, 38, 2242-2255.	1.7	22

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73	Export is not enough: nutrient cycling and carbon sequestration. Marine Ecology - Progress Series, 2008, 364, 289-294.	1.9	32
74	A simple theory of the pycnocline and overturning revisited. Geophysical Monograph Series, 2007, , 19-32.	0.1	14
75	Effects in a climate model of slope tapering in neutral physics schemes. Ocean Modelling, 2007, 16, 1-16.	2.4	44
76	Deep ocean biogeochemistry of silicic acid and nitrate. Global Biogeochemical Cycles, 2007, 21, .	4.9	85
77	A synthesis of global particle export from the surface ocean and cycling through the ocean interior and on the seafloor. Global Biogeochemical Cycles, 2007, 21, .	4.9	464
78	Impact of ocean color on the maintenance of the Pacific Cold Tongue. Geophysical Research Letters, 2007, 34, .	4.0	53
79	How does ocean ventilation change under global warming?. Ocean Science, 2007, 3, 43-53.	3.4	55
80	Central role of Southern Hemisphere winds and eddies in modulating the oceanic uptake of anthropogenic carbon. Geophysical Research Letters, 2006, 33, n/a-n/a.	4.0	45
81	Diagnosing atmosphere-ocean general circulation model errors relevant to the terrestrial biosphere using the Köppen climate classification. Geophysical Research Letters, 2006, 33, .	4.0	46
82	GFDL's CM2 Global Coupled Climate Models. Part II: The Baseline Ocean Simulation. Journal of Climate, 2006, 19, 675-697.	3.2	269
83	The Southern Hemisphere Westerlies in a Warming World: Propping Open the Door to the Deep Ocean. Journal of Climate, 2006, 19, 6382-6390.	3.2	255
84	The Southern Ocean biogeochemical divide. Nature, 2006, 441, 964-967.	27.8	268
85	The Role of Eddies in Determining the Structure and Response of the Wind-Driven Southern Hemisphere Overturning: Results from the Modeling Eddies in the Southern Ocean (MESO) Project. Journal of Physical Oceanography, 2006, 36, 2232-2252.	1.7	402
86	GFDL's CM2 Global Coupled Climate Models. Part I: Formulation and Simulation Characteristics. Journal of Climate, 2006, 19, 643-674.	3.2	1,431
87	The Energetics of Ocean Heat Transport. Journal of Climate, 2005, 18, 2604-2616.	3.2	80
88	Anthropogenic ocean acidification over the twenty-first century and its impact on calcifying organisms. Nature, 2005, 437, 681-686.	27.8	3,772
89	Formulation of an ocean model for global climate simulations. Ocean Science, 2005, 1, 45-79.	3.4	343
90	Impacts of Shortwave Penetration Depth on Large-Scale Ocean Circulation and Heat Transport. Journal of Physical Oceanography, 2005, 35, 1103-1119.	1.7	154

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91	Empirical and mechanistic models for the particle export ratio. Global Biogeochemical Cycles, 2005, 19, n/a-n/a.	4.9	353
92	Sensitivity of sequestration efficiency to mixing processes in the global ocean. Energy, 2004, 29, 1467-1478.	8.8	6
93	Oceanic ventilation and biogeochemical cycling: Understanding the physical mechanisms that produce realistic distributions of tracers and productivity. Global Biogeochemical Cycles, 2004, 18, n/a-n/a.	4.9	108
94	Evaluating global ocean carbon models: The importance of realistic physics. Global Biogeochemical Cycles, 2004, 18, n/a-n/a.	4.9	210
95	Evaluation of ocean carbon cycle models with data-based metrics. Geophysical Research Letters, 2004, 31, n/a-n/a.	4.0	168
96	Effects of patchy ocean fertilization on atmospheric carbon dioxide and biological production. Global Biogeochemical Cycles, 2003, 17, n/a-n/a.	4.9	86
97	Sensitivity of water mass transformation and heat transport to subgridscale mixing in coarse-resolution ocean models. Geophysical Research Letters, 2003, 30, .	4.0	24
98	Representation of the carbon cycle in box models and GCMs: 1. Solubility pump. Global Biogeochemical Cycles, 2003, 17, .	4.9	41
99	Representation of the carbon cycle in box models and GCMs, 2. Organic pump. Global Biogeochemical Cycles, 2003, 17, .	4.9	43
100	Physical Oceanography, Thermal Structure and General Circulation. , 2003, , 189-210.		3
101	A new estimate of the CaCO ₃ to organic carbon export ratio. Global Biogeochemical Cycles, 2002, 16, 54-154-12.	4.9	175
102	Oceanic vertical exchange and new production: a comparison between models and observations. Deep-Sea Research Part II: Topical Studies in Oceanography, 2001, 49, 363-401.	1.4	107
103	An Exploration of the Role of Transient Eddies in Determining the Transport of a Zonally Reentrant Current. Journal of Physical Oceanography, 2001, 31, 3312-3330.	1.7	96
104	On the Relationship of the Circumpolar Current to Southern Hemisphere Winds in Coarse-Resolution Ocean Models. Journal of Physical Oceanography, 2000, 30, 2013-2034.	1.7	111
105	A Simple Predictive Model for the Structure of the Oceanic Pycnocline. Science, 1999, 283, 2077-2079.	12.6	460
106	Numerical issues for coupling biological models with isopycnal mixing schemes. Ocean Modelling, 1999, 1, 1-15.	2.4	12
107	A global model of silicon cycling: Sensitivity to eddy parameterization and dissolution. Global Biogeochemical Cycles, 1999, 13, 199-220.	4.9	78
108	Constraints placed by silicon cycling on vertical exchange in general circulation models. Geophysical Research Letters, 1999, 26, 1865-1868.	4.0	36

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109	Tracking storm-generated waves in the northeast Pacific Ocean with ERS-1 synthetic aperture radar imagery and buoys. <i>Journal of Geophysical Research</i> , 1998, 103, 7917-7929.	3.3	22
110	Transient Response in aZ-Level Ocean Model That Resolves Topography with Partial Cells. <i>Monthly Weather Review</i> , 1998, 126, 3248-3270.	1.4	157
111	Simulation of Density-Driven Frictional Downslope Flow inZ-Coordinate Ocean Models. <i>Journal of Physical Oceanography</i> , 1998, 28, 2163-2174.	1.7	127
112	Isoneutral Diffusion in az-Coordinate Ocean Model. <i>Journal of Physical Oceanography</i> , 1998, 28, 805-830.	1.7	216
113	Mixing driven by vertically variable forcing: an application to the case of Langmuir circulation. <i>Journal of Fluid Mechanics</i> , 1996, 322, 81-107.	3.4	11
114	Structure and variability of Langmuir circulation during the Surface Waves Processes Program. <i>Journal of Geophysical Research</i> , 1996, 101, 3525-3543.	3.3	116
115	Modeling the diurnal cycle of carbon monoxide: Sensitivity to physics, chemistry, biology, and optics. <i>Journal of Geophysical Research</i> , 1996, 101, 12177-12191.	3.3	27
116	Structure and Instability of the Ekman Spiral in the Presence of Surface Gravity Waves. <i>Journal of Physical Oceanography</i> , 1995, 25, 3148-3171.	1.7	39
117	[Report on Statistics and Physical Oceanography]: Comment. <i>Statistical Science</i> , 1994, 9, 208.	2.8	0
118	Effects of Saturated and Dry Land Surfaces on the Tropical Circulation and Precipitation in a General Circulation Model. <i>Journal of Climate</i> , 1991, 4, 873-889.	3.2	15