M M Holland

List of Publications by Year
in descending order

144 papers	25,475 citations	18479 62 h-index	9860 141 g-index
164 all docs	164 docs citations	164 times ranked	18533 citing authors

#	Article	IF	Citations
1	The Community Climate System Model Version 4. Journal of Climate, 2011, 24, 4973-4991.	3.2	2,428
2	The Community Earth System Model: A Framework for Collaborative Research. Bulletin of the American Meteorological Society, 2013, 94, 1339-1360.	3.3	1,848
3	The Community Earth System Model (CESM) Large Ensemble Project: A Community Resource for Studying Climate Change in the Presence of Internal Climate Variability. Bulletin of the American Meteorological Society, 2015, 96, 1333-1349.	3.3	1,723
4	Arctic sea ice decline: Faster than forecast. Geophysical Research Letters, 2007, 34, .	4.0	1,459
5	The Arcticâ€™s rapidly shrinking sea ice cover: a research synthesis. Climatic Change, 2012, 110, 1005-1027.	3.6	1,277
6	Perspectives on the Arctic's Shrinking Sea-Ice Cover. Science, 2007, 315, 1533-1536.	12.6	1,123
7	Polar amplification of climate change in coupled models. Climate Dynamics, 2003, 21, 221-232.	3.8	1,002
8	The Community Earth System Model Version 2 (CESM2). Journal of Advances in Modeling Earth Systems, 2020, 12, e2019MS001916.	3.8	935
9	The emergence of surface-based Arctic amplification. Cryosphere, 2009, 3, 11-19.	3.9	923
10	How Well Do We Understand and Evaluate Climate Change Feedback Processes?. Journal of Climate, 2006, 19, 3445-3482.	3.2	849
11	Trends in Arctic sea ice extent from CMIP5, CMIP3 and observations. Geophysical Research Letters, 2012, 39, .	4.0	817
12	The UVic earth system climate model: Model description, climatology, and applications to past, present and future climates. Atmosphere - Ocean, 2001, 39, 361-428.	1.6	604
13	Future abrupt reductions in the summer Arctic sea ice. Geophysical Research Letters, 2006, 33, .	4.0	544
14	Abrupt onset of the Little Ice Age triggered by volcanism and sustained by seaâ€ice/ocean feedbacks. Geophysical Research Letters, 2012, 39, .	4.0	544
15	Arctic Sea Ice Extent Plummets in 2007. Eos, 2008, 89, 13-14.	0.1	409
16	History of sea ice in the Arctic. Quaternary Science Reviews, 2010, 29, 1757-1778.	3.0	343
17	Analysis of the Arctic System for Freshwater Cycle Intensification: Observations and Expectations. Journal of Climate, 2010, 23, 5715-5737.	3.2	303
18	Predicting 21stâ€century polar bear habitat distribution from global climate models. Ecological Monographs, 2009, 79, 25-58.	5.4	299

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19	Improved Sea Ice Shortwave Radiation Physics in CCSM4: The Impact of Melt Ponds and Aerosols on Arctic Sea Ice. Journal of Climate, 2012, 25, 1413-1430.	3.2	299
20	Simulating the ice-thickness distribution in a coupled climate model. Journal of Geophysical Research, 2001, 106, 2441-2463.	3.3	273
21	Parameterization of mixed layer eddies. III: Implementation and impact in global ocean climate simulations. Ocean Modelling, 2011, 39, 61-78.	2.4	269
22	Constraining projections of summer Arctic sea ice. Cryosphere, 2012, 6, 1383-1394.	3.9	239
23	Interâ€annual to multiâ€decadal Arctic sea ice extent trends in a warming world. Geophysical Research Letters, 2011, 38, .	4.0	227
24	Demographic models and IPCC climate projections predict the decline of an emperor penguin population. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 1844-1847.	7.1	206
25	The arctic freshwater system: Changes and impacts. Journal of Geophysical Research, 2007, 112, .	3.3	203
26	Advancing Polar Prediction Capabilities on Daily to Seasonal Time Scales. Bulletin of the American Meteorological Society, 2016, 97, 1631-1647.	3.3	199
27	The atmospheric role in the Arctic water cycle: A review on processes, past and future changes, and their impacts. Journal of Geophysical Research G: Biogeosciences, 2016, 121, 586-620.	3.0	197
28	Accelerated Arctic land warming and permafrost degradation during rapid sea ice loss. Geophysical Research Letters, 2008, 35, .	4.0	195
29	Climate Sensitivity of the Community Climate System Model, Version 4. Journal of Climate, 2012, 25, 3053-3070.	3.2	190
30	Sustained ocean changes contributed to sudden Antarctic sea ice retreat in late 2016. Nature Communications, 2019, 10, 14.	12.8	179
31	Influence of the Sea Ice Thickness Distribution on Polar Climate in CCSM3. Journal of Climate, 2006, 19, 2398-2414.	3.2	168
32	How predictable is the timing of a summer iceâ€free Arctic?. Geophysical Research Letters, 2016, 43, 9113-9120.	4.0	147
33	Simulation of the Global Hydrological Cycle in the CCSM Community Atmosphere Model Version 3 (CAM3): Mean Features. Journal of Climate, 2006, 19, 2199-2221.	3.2	141
34	The Role of Iceâ€“Ocean Interactions in the Variability of the North Atlantic Thermohaline Circulation. Journal of Climate, 2001, 14, 656-675.	3.2	140
35	Extremes become routine in an emerging new Arctic. Nature Climate Change, 2020, 10, 1108-1115.	18.8	138
36	The sea ice mass budget of the Arctic and its future change as simulated by coupled climate models. Climate Dynamics, 2010, 34, 185-200.	3.8	136

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37	The Influence of Local Feedbacks and Northward Heat Transport on the Equilibrium Arctic Climate Response to Increased Greenhouse Gas Forcing. Journal of Climate, 2012, 25, 5433-5450.	3.2	133
38	Arctic system on trajectory to new, seasonally ice-free state. Eos, 2005, 86, 309.	0.1	124
39	Maintenance of the Sea-Ice Edge. Journal of Climate, 2005, 18, 2903-2921.	3.2	120
40	Centennial-scale climate change from decadally-paced explosive volcanism: a coupled sea ice-ocean mechanism. Climate Dynamics, 2011, 37, 2373-2387.	3.8	118
41	The Influence of Sea Ice on Ocean Heat Uptake in Response to Increasing CO2. Journal of Climate, 2006, 19, 2437-2450.	3.2	117
42	Inherent sea ice predictability in the rapidly changing Arctic environment of the Community Climate System Model, version 3. Climate Dynamics, 2011, 36, 1239-1253.	3.8	116
43	Twenty-First-Century Arctic Climate Change in CCSM4. Journal of Climate, 2012, 25, 2696-2710.	3.2	112
44	THERMOHALINE CIRCULATION: High-Latitude Phenomena and the Difference Between the Pacific and Atlantic. Annual Review of Earth and Planetary Sciences, 1999, 27, 231-285.	11.0	110
45	Influence of initial conditions and climate forcing on predicting Arctic sea ice. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	105
46	Late-Twentieth-Century Simulation of Arctic Sea Ice and Ocean Properties in the CCSM4. Journal of Climate, 2012, 25, 1431-1452.	3.2	99
47	Projected continent-wide declines of the emperor penguin under climate change. Nature Climate Change, 2014, 4, 715-718.	18.8	95
48	Effects of climate change on an emperor penguin population: analysis of coupled demographic and climate models. Global Change Biology, 2012, 18, 2756-2770.	9.5	93
49	Ocean viscosity and climate. Journal of Geophysical Research, 2008, 113, .	3.3	92
50	Snow in the changing sea-ice systems. Nature Climate Change, 2018, 8, 946-953.	18.8	91
51	Implications of Arctic sea ice changes for North Atlantic deep convection and the meridional overturning circulation in CCSM4â€CMIP5 simulations. Geophysical Research Letters, 2013, 40, 1206-1211.	4.0	86
52	Fast and slow responses of Southern Ocean sea surface temperature to SAM in coupled climate models. Climate Dynamics, 2017, 48, 1595-1609.	3.8	85
53	Tropical teleconnection impacts on Antarctic climate changes. Nature Reviews Earth & Environment, 2021, 2, 680-698.	29.7	85
54	The CMIP6 Sea-Ice Model Intercomparison Project (SIMIP): understanding sea ice through climate-model simulations. Geoscientific Model Development, 2016, 9, 3427-3446.	3.6	83

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55	Projected changes in Arctic Ocean freshwater budgets. Journal of Geophysical Research, 2007, 112, .	3.3	79
56	Modeling the Arctic freshwater system and its integration in the global system: Lessons learned and future challenges. Journal of Geophysical Research G: Biogeosciences, 2016, 121, 540-566.	3.0	79
57	Arctic Freshwater Synthesis: Summary of key emerging issues. Journal of Geophysical Research G: Biogeosciences, 2015, 120, 1887-1893.	3.0	74
58	Impact of sea ice on the marine iron cycle and phytoplankton productivity. Biogeosciences, 2014, 11, 4713-4731.	3.3	72
59	Simulated Arctic Ocean Freshwater Budgets in the Twentieth and Twenty-First Centuries. Journal of Climate, 2006, 19, 6221-6242.	3.2	70
60	An arctic hydrologic system in transition: Feedbacks and impacts on terrestrial, marine, and human life. Journal of Geophysical Research, 2009, 114, .	3.3	69
61	Changing seasonal sea ice predictor relationships in a changing Arctic climate. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	68
62	Changes in Arctic clouds during intervals of rapid sea ice loss. Climate Dynamics, 2011, 36, 1475-1489.	3.8	68
63	Fasting season length sets temporal limits for global polar bear persistence. Nature Climate Change, 2020, 10, 732-738.	18.8	68
64	Decadal variations in Labrador Sea ice cover and North Atlantic sea surface temperatures. Journal of Geophysical Research, 2002, 107, 3-1.	3.3	66
65	Initialâ€value predictability of Antarctic sea ice in the Community Climate System Model 3. Geophysical Research Letters, 2013, 40, 2121-2124.	4.0	64
66	Modeling the thermodynamics of a sea ice thickness distribution: 1. Sensitivity to ice thickness resolution. Journal of Geophysical Research, 1997, 102, 23079-23091.	3.3	59
67	Sensitivity of Antarctic sea ice to the Southern Annular Mode in coupled climate models. Climate Dynamics, 2017, 49, 1813-1831.	3.8	59
68	Global atmospheric forcing data for Arctic ice-ocean modeling. Journal of Geophysical Research, 2007, 112, .	3.3	58
69	Antarctic Sea Ice Climatology, Variability, and Late Twentieth-Century Change in CCSM4. Journal of Climate, 2012, 25, 4817-4838.	3.2	54
70	Twentieth century simulation of the southern hemisphere climate in coupled models. Part II: sea ice conditions and variability. Climate Dynamics, 2006, 26, 229-245.	3.8	53
71	Response of Northern Hemisphere extratropical cyclone activity and associated precipitation to climate change, as represented by the Community Climate System Model. Journal of Geophysical Research, 2007, 112, .	3.3	52
72	Tropical Decadal Variability and the Rate of Arctic Sea Ice Decrease. Geophysical Research Letters, 2018, 45, 11,326.	4.0	51

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73	The North Atlantic Oscillationâ€“Arctic Oscillation in the CCSM2 and Its Influence on Arctic Climate Variability. Journal of Climate, 2003, 16, 2767-2781.	3.2	47
74	Thicker Clouds and Accelerated Arctic Sea Ice Decline: The Atmosphereâ€Sea Ice Interactions in Spring. Geophysical Research Letters, 2019, 46, 6980-6989.	4.0	47
75	Twentieth century simulation of the southern hemisphere climate in coupled models. Part 1: large scale circulation variability. Climate Dynamics, 2006, 26, 217-228.	3.8	46
76	Mechanisms of Decadal Arctic Climate Variability in the Community Climate System Model, Version 2 (CCSM2). Journal of Climate, 2005, 18, 3552-3570.	3.2	44
77	Pan-Antarctic analysis aggregating spatial estimates of AdÃ©lie penguin abundance reveals robust dynamics despite stochastic noise. Nature Communications, 2017, 8, 832.	12.8	43
78	A tracer study of the Arctic Ocean's liquid freshwater export variability. Journal of Geophysical Research, 2010, 115, .	3.3	41
79	Springtime winds drive Ross Sea ice variability and change in the following autumn. Nature Communications, 2017, 8, 731.	12.8	40
80	Arctic Sea Ice in Two Configurations of the CESM2 During the 20th and 21st Centuries. Journal of Geophysical Research: Oceans, 2020, 125, e2020JC016133.	2.6	39
81	Robust response of the Amundsen Sea Low to stratospheric ozone depletion. Geophysical Research Letters, 2016, 43, 8207-8213.	4.0	38
82	The Expanding Footprint of Rapid Arctic Change. Earth's Future, 2019, 7, 212-218.	6.3	38
83	Arctic climate response to forcing from light-absorbing particles in snow and sea ice in CESM. Atmospheric Chemistry and Physics, 2012, 12, 7903-7920.	4.9	37
84	Mechanisms Forcing an Antarctic Dipole in Simulated Sea Ice and Surface Ocean Conditions. Journal of Climate, 2005, 18, 2052-2066.	3.2	36
85	The influence of sea ice physics on simulations of climate change. Journal of Geophysical Research, 2001, 106, 19639-19655.	3.3	35
86	The Role of Natural Versus Forced Change in Future Rapid Summer Arctic Ice Loss. Geophysical Monograph Series, 0, , 133-150.	0.1	34
87	Warm Arctic, Increased Winter Sea Ice Growth?. Geophysical Research Letters, 2018, 45, 12,922.	4.0	34
88	Partitioning uncertainty in projections of Arctic sea ice. Environmental Research Letters, 2021, 16, 044002.	5.2	34
89	The Paris Agreement objectives will likely halt future declines of emperor penguins. Global Change Biology, 2020, 26, 1170-1184.	9.5	33
90	Can regional climate engineering save the summer Arctic sea ice?. Geophysical Research Letters, 2014, 41, 880-885.	4.0	32

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91	Synoptically forced hydroclimatology of major Arctic watersheds in general circulation models; Part 1: the Mackenzie River Basin. International Journal of Climatology, 2009, 29, 1226-1243.	3.5	31
92	Seasonal differences in the response of Arctic cyclones to climate change in CESM1. Climate Dynamics, 2018, 50, 3885-3903.	3.8	31
93	The call of the emperor penguin: Legal responses to species threatened by climate change. Global Change Biology, 2021, 27, 5008-5029.	9.5	30
94	Modeling the thermodynamics of a sea ice thickness distribution: 2. Sea ice/ocean interactions. Journal of Geophysical Research, 1997, 102, 23093-23107.	3.3	29
95	Arctic and Antarctic Sea Ice Mean State in the Community Earth System Model Version 2 and the Influence of Atmospheric Chemistry. Journal of Geophysical Research: Oceans, 2020, 125, e2019JC015934.	2.6	29
96	CO₂ Increase Experiments Using the CESM: Relationship to Climate Sensitivity and Comparison of CESM1 to CESM2. Journal of Advances in Modeling Earth Systems, 2020, 12, e2020MS002120.	3.8	25
97	Factors affecting projected Arctic surface shortwave heating and albedo change in coupled climate models. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2015, 373, 20140162.	3.4	24
98	Stratospheric Ozone Depletion: An Unlikely Driver of the Regional Trends in Antarctic Sea Ice in Austral Fall in the Late Twentieth Century. Geophysical Research Letters, 2017, 44, 11,062.	4.0	24
99	Essential gaps and uncertainties in the understanding of the roles and functions of Arctic sea ice. Environmental Research Letters, 2019, 14, 043002.	5.2	24
100	Past and future interannual variability in Arctic sea ice in coupled climate models. Cryosphere, 2019, 13, 113-124.	3.9	23
101	Comment on â€œOn the reliability of simulated Arctic sea ice in global climate modelsâ€• by I. Eisenman, N. Untersteiner, and J. S. Wettlaufer. Geophysical Research Letters, 2008, 35, .	4.0	22
102	The Regional, Seasonal, and Lagged Influence of the Amundsen Sea Low on Antarctic Sea Ice. Geophysical Research Letters, 2018, 45, 11,227.	4.0	22
103	Spatiotemporal evolution of melt ponds on Arctic sea ice. Elementa, 2022, 10, .	3.2	22
104	Arctic Ocean sea ice snow depth evaluation and bias sensitivity in CCSM. Cryosphere, 2013, 7, 1887-1900.	3.9	21
105	Arctic Ocean Freshwater in CMIP6 Ensembles: Declining Sea Ice, Increasing Ocean Storage and Export. Journal of Geophysical Research: Oceans, 2021, 126, e2020JC016930.	2.6	20
106	The Role of Physical Processes in Determining the Interdecadal Variability of Central Arctic Sea Ice. Journal of Climate, 1999, 12, 3319-3330.	3.2	19
107	Links between the Amundsen Sea Low and sea ice in the Ross Sea: seasonal and interannual relationships. Climate Dynamics, 2019, 52, 2333-2349.	3.8	18
108	Modeling photosynthesis in sea iceâ€covered waters. Journal of Advances in Modeling Earth Systems, 2015, 7, 1189-1206.	3.8	17

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109	Impact of a New Sea Ice Thermodynamic Formulation in the CESM2 Sea Ice Component. Journal of Advances in Modeling Earth Systems, 2020, 12, e2020MS002154.	3.8	17
110	Evolution of summer Arctic sea ice albedo in CCSM4 simulations: Episodic summer snowfall and frozen summers. Journal of Geophysical Research: Oceans, 2015, 120, 284-303.	2.6	16
111	The Emergence and Transient Nature of Arctic Amplification in Coupled Climate Models. Frontiers in Earth Science, 2021, 9, .	1.8	16
112	An improved single-column model representation of ocean mixing associated with summertime leads: Results from a SHEBA case study. Journal of Geophysical Research, 2003, 108, .	3.3	15
113	Synoptically forced hydroclimatology of major Arctic watersheds in general circulation models; Part 2: Eurasian watersheds. International Journal of Climatology, 2009, 29, 1244-1261.	3.5	14
114	Multiple Equilibria and Abrupt Transitions in Arctic Summer Sea Ice Extent. Geophysical Monograph Series, 0, , 151-174.	0.1	14
115	Changing Seasonal Predictability of Arctic Summer Sea Ice Area in a Warming Climate. Journal of Climate, 2019, 32, 4963-4979.	3.2	14
116	The great sea-ice dwindle. Nature Geoscience, 2013, 6, 10-11.	12.9	13
117	An Overview of Antarctic Sea Ice in the Community Earth System Model Version 2, Part I: Analysis of the Seasonal Cycle in the Context of Sea Ice Thermodynamics and Coupled Atmosphereâ€Oceanâ€Ice Processes. Journal of Advances in Modeling Earth Systems, 2021, 13, e2020MS002143.	3.8	13
118	Snow on Arctic Sea Ice in a Warming Climate as Simulated in CESM. Journal of Geophysical Research: Oceans, 2021, 126, e2020JC016308.	2.6	13
119	Global Climate Models and 20th and 21st Century Arctic Climate Change. Atmospheric and Oceanographic Sciences Library, 2012, , 405-436.	0.1	13
120	Arctic sea ice sensitivity to lateral melting representation in a coupled climate model. Cryosphere, 2022, 16, 419-434.	3.9	13
121	Interannual SAM Modulation of Antarctic Sea Ice Extent Does Not Account for Its Longâ€Term Trends, Pointing to a Limited Role for Ozone Depletion. Geophysical Research Letters, 2021, 48, e2021GL094871.	4.0	12
122	Thermodynamic feedback processes in a single-column sea-ice-ocean model. Annals of Glaciology, 1997, 25, 327-332.	1.4	9
123	Less Surface Sea Ice Melt in the CESM2 Improves Arctic Sea Ice Simulation With Minimal Nonâ€Polar Climate Impacts. Journal of Advances in Modeling Earth Systems, 2022, 14, .	3.8	9
124	Response of sea-ice models to perturbations in surface heat flux. Annals of Glaciology, 1997, 25, 193-197.	1.4	8
125	The impact of rising atmospheric CO2on Simulated sea ice induced thermohaline circulation variability. Geophysical Research Letters, 2000, 27, 1519-1522.	4.0	8
126	The influence of snow on sea ice as assessed from simulations of CESM2. Cryosphere, 2021, 15, 4981-4998.	3.9	8

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127	Detecting climate signals in populations across life histories. Global Change Biology, 2022, 28, 2236-2258.	9.5	8
128	Influences of changing sea ice and snow thicknesses on simulated Arctic winter heat fluxes. Cryosphere, 2022, 16, 1483-1495.	3.9	8
129	An Assessment of the Temporal Variability in the Annual Cycle of Daily Antarctic Sea Ice in the NCAR Community Earth System Model, Version 2: A Comparison of the Historical Runs With Observations. Journal of Geophysical Research: Oceans, 2020, 125, e2020JC016459.	2.6	7
130	An Ice-Free Arctic? Opportunities for Computational Science. Computing in Science and Engineering, 2007, 9, 65-74.	1.2	6
131	Coupled ice-ocean modeling and predictions. Journal of Marine Research, 2017, 75, 839-875.	0.3	6
132	The effects of snowfall on a snow-ice-thickness distribution. Annals of Glaciology, 1997, 25, 287-291.	1.4	5
133	The effects of snowfall on a snow-ice-thickness distribution. Annals of Glaciology, 1997, 25, 287-291.	1.4	4
134	Advances in ocean modeling for climate change research. Reviews of Geophysics, 1995, 33, 1411-1424.	23.0	3
135	Response of sea-ice models to perturbations in surface heat flux. Annals of Glaciology, 1997, 25, 193-197.	1.4	3
136	Arctic sea ice and the potential for abrupt loss. Geophysical Monograph Series, 2010, , 181-191.	0.1	3
137	Going with the floe: tracking CESM Large Ensemble sea ice in the Arctic provides context for ship-based observations. Cryosphere, 2020, 14, 1259-1271.	3.9	3
138	When will the Arctic Ocean become ice-free?. Arctic, Antarctic, and Alpine Research, 2021, 53, 217-218.	1.1	3
139	Sensitivity of Arctic Sea Ice Thickness to Intermodel Variations in the Surface Energy Budget. Geophysical Monograph Series, 2013, , 77-90.	0.1	2
140	Sea Ice Summer Camp: Bringing Together Sea Ice Modelers and Observers to Advance Polar Science. Bulletin of the American Meteorological Society, 2017, 98, 2057-2059.	3.3	1
141	Impacts of Sea Ice Mushy Thermodynamics in the Antarctic on the Coupled Earth System. Geophysical Research Letters, 2021, 48, e2021GL094287.	4.0	1
142	Sensitivity of the Arctic Sea Ice Cover to the Summer Surface Scattering Layer. Geophysical Research Letters, 2022, 49, .	4.0	1
143	Thermodynamic feedback processes in a single-column sea-iceâ€“ocean model. Annals of Glaciology, 1997, 25, 327-332.	1.4	0
144	New perspectives through data discovery and modeling. Eos, 2007, 88, 278-278.	0.1	0