J David Neelin

List of Publications by Year
in descending order

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134 papers	12,603 citations	34105 52 h-index	25787 108 g-index
142 all docs	142 docs citations	142 times ranked	8224 citing authors

#	Article	IF	Citations
1	ENSO theory. Journal of Geophysical Research, 1998, 103, 14261-14290.	3.3	809
2	On large-scale circulations in convecting atmospheres. Quarterly Journal of the Royal Meteorological Society, 1994, 120, 1111-1143.	2.7	703
3	Modeling Tropical Convergence Based on the Moist Static Energy Budget. Monthly Weather Review, 1987, 115, 3-12.	1.4	635
4	Increasing precipitation volatility in twenty-first-century California. Nature Climate Change, 2018, 8, 427-433.	18.8	565
5	Evaluating the â€œRich-Get-Richerâ€•Mechanism in Tropical Precipitation Change under Global Warming. Journal of Climate, 2009, 22, 1982-2005.	3.2	554
6	Enhancement of Interdecadal Climate Variability in the Sahel by Vegetation Interaction. Science, 1999, 286, 1537-1540.	12.6	498
7	El Nino on the Devil's Staircase: Annual Subharmonic Steps to Chaos. Science, 1994, 264, 70-72.	12.6	445
8	Tropical drying trends in global warming models and observations. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 6110-6115.	7.1	434
9	Moisture Vertical Structure, Column Water Vapor, and Tropical Deep Convection. Journals of the Atmospheric Sciences, 2009, 66, 1665-1683.	1.7	413
10	Mechanisms of Global Warming Impacts on Regional Tropical Precipitation*. Journal of Climate, 2004, 17, 2688-2701.	3.2	384
11	Critical phenomena in atmospheric precipitation. Nature Physics, 2006, 2, 393-396.	16.7	319
12	A Quasi-Equilibrium Tropical Circulation Modelâ€"Formulation*. Journals of the Atmospheric Sciences, 2000, 57, 1741-1766.	1.7	309
13	Causes and impacts of the 2005 Amazon drought. Environmental Research Letters, 2008, 3, 014002.	5.2	285
14	North American Climate in CMIP5 Experiments: Part III: Assessment of Twenty-First-Century Projections*. Journal of Climate, 2014, 27, 2230-2270.	3.2	231
15	The Slow Sea Surface Temperature Mode and the Fast-Wave Limit: Analytic Theory for Tropical Interannual Oscillations and Experiments in a Hybrid Coupled Model. Journals of the Atmospheric Sciences, 1991, 48, 584-606.	1.7	226
16	Tropical drought regions in global warming and El NiÃ±o teleconnections. Geophysical Research Letters, 2003, 30, .	4.0	222
17	The Transition to Strong Convection. Journals of the Atmospheric Sciences, 2009, 66, 2367-2384.	1.7	218
18	Modes of Tropical Variability under Convective Adjustment and the Maddenâ€"Julian Oscillation. Part I: Analytical Theory. Journals of the Atmospheric Sciences, 1994, 51, 1876-1894.	1.7	214

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19	Estimating the Effect of Stochastic Wind Stress Forcing on ENSO Irregularity. Journal of Climate, 1997, 10, 1473-1486.	3.2	152
20	California Winter Precipitation Change under Global Warming in the Coupled Model Intercomparison Project Phase 5 Ensemble. Journal of Climate, 2013, 26, 6238-6256.	3.2	144
21	Influence of a stochastic moist convective parameterization on tropical climate variability. Geophysical Research Letters, 2000, 27, 3691-3694.	4.0	131
22	A Quasi-Equilibrium Tropical Circulation Modelâ€"Implementation and Simulation*. Journals of the Atmospheric Sciences, 2000, 57, 1767-1796.	1.7	129
23	Deep Convection and Column Water Vapor over Tropical Land versus Tropical Ocean: A Comparison between the Amazon and the Tropical Western Pacific. Journals of the Atmospheric Sciences, 2016, 73, 4043-4063.	1.7	123
24	Estimating the Gross Moist Stability of the Tropical Atmosphere*. Journals of the Atmospheric Sciences, 1998, 55, 1354-1372.	1.7	122
25	ENSO Influence on Atlantic hurricanes via tropospheric warming. Geophysical Research Letters, 2004, 31, .	4.0	117
26	The Convective Cold Top and Quasi Equilibrium*. Journals of the Atmospheric Sciences, 2007, 64, 1467-1487.	1.7	110
27	Temporal Relations of Column Water Vapor and Tropical Precipitation. Journals of the Atmospheric Sciences, 2010, 67, 1091-1105.	1.7	110
28	Teleconnection Mechanisms for Tropical Pacific Descent Anomalies during El NiÃ±o*. Journals of the Atmospheric Sciences, 2002, 59, 2694-2712.	1.7	108
29	Tightening of tropical ascent and high clouds key to precipitation change in a warmer climate. Nature Communications, 2017, 8, 15771.	12.8	107
30	Ocean-atmosphere-land feedbacks in an idealized monsoon. Quarterly Journal of the Royal Meteorological Society, 2001, 127, 1869-1891.	2.7	105
31	Mechanisms Limiting the Northward Extent of the Northern Summer Monsoons over North America, Asia, and Africa*. Journal of Climate, 2003, 16, 406-425.	3.2	105
32	Weakening and strengthening structures in the Hadley Circulation change under global warming and implications for cloud response and climate sensitivity. Journal of Geophysical Research D: Atmospheres, 2014, 119, 5787-5805.	3.3	104
33	Toward stochastic deep convective parameterization in general circulation models. Geophysical Research Letters, 2003, 30, .	4.0	100
34	Modes of Tropical Variability under Convective Adjustment and the Maddenâ€"Julian Oscillation. Part II: Numerical Results. Journals of the Atmospheric Sciences, 1994, 51, 1895-1914.	1.7	91
35	Considerations for Stochastic Convective Parameterization. Journals of the Atmospheric Sciences, 2002, 59, 959-975.	1.7	88
36	Mesoscale Convective Systems and Critical Clusters. Journals of the Atmospheric Sciences, 2009, 66, 2913-2924.	1.7	86

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37	Impact Mechanisms of Shallow Cumulus Convection on Tropical Climate Dynamics*. Journal of Climate, 2007, 20, 2623-2642.	3.2	85
38	Considerations for parameter optimization and sensitivity in climate models. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 21349-21354.	7.1	85
39	The boundary layer contribution to intertropical convergence zones in the quasi-equilibrium tropical circulation model framework. Theoretical and Computational Fluid Dynamics, 2006, 20, 323-350.	2.2	77
40	Temperatureâ€“Moisture Dependence of the Deep Convective Transition as a Constraint on Entrainment in Climate Models. Journals of the Atmospheric Sciences, 2012, 69, 1340-1358.	1.7	76
41	Significant modulation of variability and projected change in California winter precipitation by extratropical cyclone activity. Geophysical Research Letters, 2015, 42, 5983-5991.	4.0	76
42	Tropical teleconnection and local response to SST anomalies during the 1997-1998 El NiÃ±o. Journal of Geophysical Research, 2001, 106, 20025-20043.	3.3	70
43	Thermodynamic versus Dynamic Controls on Extreme Precipitation in a Warming Climate from the Community Earth System Model Large Ensemble. Journal of Climate, 2019, 32, 1025-1045.	3.2	70
44	Sensitivity of Tropical Tropospheric Temperature to Sea Surface Temperature Forcing*. Journal of Climate, 2003, 16, 1283-1301.	3.2	69
45	Universality of rain event size distributions. Journal of Statistical Mechanics: Theory and Experiment, 2010, 2010, P11030.	2.3	69
46	A Stochastic Model for the Transition to Strong Convection. Journals of the Atmospheric Sciences, 2011, 68, 2955-2970.	1.7	69
47	Rethinking convective quasi-equilibrium: observational constraints for stochastic convective schemes in climate models. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2008, 366, 2579-2602.	3.4	68
48	Moist Teleconnection Mechanisms for the Tropical South American and Atlantic Sector*. Journal of Climate, 2005, 18, 3928-3950.	3.2	65
49	Analyzing ENSO Teleconnections in CMIP Models as a Measure of Model Fidelity in Simulating Precipitation. Journal of Climate, 2013, 26, 4431-4446.	3.2	65
50	Spring Land Surface and Subsurface Temperature Anomalies and Subsequent Downstream Late Springâ€“Summer Droughts/Floods in North America and East Asia. Journal of Geophysical Research D: Atmospheres, 2018, 123, 5001-5019.	3.3	65
51	Tropical Convective Transition Statistics and Causality in the Water Vaporâ€“Precipitation Relation. Journals of the Atmospheric Sciences, 2017, 74, 915-931.	1.7	64
52	Rough parameter dependence in climate models and the role of Ruelle-Pollicott resonances. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 1684-1690.	7.1	63
53	First-Passage-Time Prototypes for Precipitation Statistics. Journals of the Atmospheric Sciences, 2014, 71, 3269-3291.	1.7	63
54	Why Do Precipitation Intensities Tend to Follow Gamma Distributions?. Journals of the Atmospheric Sciences, 2019, 76, 3611-3631.	1.7	60

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55	Long tails in regional surface temperature probability distributions with implications for extremes under global warming. Geophysical Research Letters, 2012, 39, .	4.0	58
56	Global warming precipitation accumulation increases above the current-climate cutoff scale. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 1258-1263.	7.1	57
57	Reverse Engineering the Tropical Precipitationâ€“Buoyancy Relationship. Journals of the Atmospheric Sciences, 2018, 75, 1587-1608.	1.7	56
58	On the role of ocean-atmosphere interaction in midlatitude interdecadal variability. Geophysical Research Letters, 1998, 25, 167-170.	4.0	46
59	The Scatter in Tropical Average Precipitation Anomalies*. Journal of Climate, 2003, 16, 3966-3977.	3.2	46
60	Mechanisms for Lagged Atmospheric Response to ENSO SST Forcing*. Journal of Climate, 2005, 18, 4195-4215.	3.2	46
61	GoAmazon2014/5 campaign points to deep-inflow approach to deep convection across scales. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 4577-4582.	7.1	46
62	Seasonal influence of ENSO on the Atlantic ITCZ and equatorial South America. Geophysical Research Letters, 2005, 32, .	4.0	45
63	Deep Convective Organization, Moisture Vertical Structure, and Convective Transition Using Deep-Inflow Mixing. Journals of the Atmospheric Sciences, 2019, 76, 965-987.	1.7	41
64	Eastern margin variability of the South Pacific Convergence Zone. Geophysical Research Letters, 2008, 35, .	4.0	40
65	Long tails in deep columns of natural and anthropogenic tropospheric tracers. Geophysical Research Letters, 2010, 37, .	4.0	40
66	Shifts in Precipitation Accumulation Extremes During the Warm Season Over the United States. Geophysical Research Letters, 2018, 45, 8586-8595.	4.0	40
67	Convective Transition Statistics over Tropical Oceans for Climate Model Diagnostics: Observational Baseline. Journals of the Atmospheric Sciences, 2018, 75, 1553-1570.	1.7	39
68	Thermodynamic and Dynamic Mechanisms for Hydrological Cycle Intensification over the Full Probability Distribution of Precipitation Events. Journals of the Atmospheric Sciences, 2019, 76, 497-516.	1.7	38
69	Regional Tropical Precipitation Change Mechanisms in ECHAM4/OPYC3 under Global Warming*. Journal of Climate, 2006, 19, 4207-4223.	3.2	37
70	Patterns of Precipitation Change and Climatological Uncertainty among CMIP5 Models, with a Focus on the Midlatitude Pacific Storm Track*. Journal of Climate, 2015, 28, 7857-7872.	3.2	37
71	Mechanisms limiting the southward extent of the South American Summer Monsoon. Geophysical Research Letters, 2001, 28, 2433-2436.	4.0	36
72	Shortâ€tailed temperature distributions over North America and implications for future changes in extremes. Geophysical Research Letters, 2015, 42, 8577-8585.	4.0	36

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73	Process-Oriented Evaluation of Climate and Weather Forecasting Models. Bulletin of the American Meteorological Society, 2019, 100, 1665-1686.	3.3	36
74	Reduction of tropical land region precipitation variability via transpiration. Geophysical Research Letters, 2012, 39, .	4.0	35
75	Dynamical mechanisms for African monsoon changes during the mid-Holocene. Journal of Geophysical Research, 2005, 110, .	3.3	33
76	Cirrus detrainment-temperature feedback. Geophysical Research Letters, 1999, 26, 1295-1298.	4.0	32
77	Local and Remote Impacts of Aerosol Climate Forcing on Tropical Precipitation*. Journal of Climate, 2005, 18, 4621-4636.	3.2	32
78	ENSO in a hybrid coupled model. Part II: prediction with piggyback data assimilation. Climate Dynamics, 2000, 16, 35-48.	3.8	31
79	A prototype for convective margin shifts. Geophysical Research Letters, 2007, 34, .	4.0	31
80	Tropical Precipitation Evolution in a Buoyancy-Budget Framework. Journals of the Atmospheric Sciences, 2021, 78, 509-528.	1.7	31
81	Impact of Initialized Land Surface Temperature and Snowpack on Subseasonal to Seasonal Prediction Project, Phase I (LS4P-I): organization and experimental design. Geoscientific Model Development, 2021, 14, 4465-4494.	3.6	31
82	Linearization of a longwave radiation scheme for intermediate tropical atmospheric models. Journal of Geophysical Research, 1996, 101, 15129-15145.	3.3	30
83	Classifying reanalysis surface temperature probability density functions (PDFs) over North America with cluster analysis. Geophysical Research Letters, 2013, 40, 3710-3714.	4.0	29
84	Column Water Vapor Statistics and Their Relationship to Deep Convection, Vertical and Horizontal Circulation, and Moisture Structure at Nauru. Journal of Climate, 2011, 24, 5454-5466.	3.2	27
85	Tropical continental downdraft characteristics: mesoscale systems versus unorganized convection. Atmospheric Chemistry and Physics, 2018, 18, 1997-2010.	4.9	27
86	Spring land temperature anomalies in northwestern US and the summer drought over Southern Plains and adjacent areas. Environmental Research Letters, 2016, 11, 044018.	5.2	26
87	Deep Convective Adjustment of Temperature and Moisture. Journals of the Atmospheric Sciences, 2020, 77, 2163-2186.	1.7	26
88	Implications of Convective Quasi-Equilibrium for the Large-Scale Flow. , 1997, , 413-446.		25
89	Identifying sensitive ranges in global warming precipitation change dependence on convective parameters. Geophysical Research Letters, 2016, 43, 5841-5850.	4.0	24
90	Relationships among climatological vertical moisture structure, column water vapor, and precipitation over the central Amazon in observations and CMIP5 models. Geophysical Research Letters, 2017, 44, 1981-1989.	4.0	24

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91	ENSO in a hybrid coupled model. Part I: sensitivity to physical parametrizations. Climate Dynamics, 2000, 16, 19-34.	3.8	23
92	Surface Temperature Probability Distributions in the NARCCAP Hindcast Experiment: Evaluation Methodology, Metrics, and Results. Journal of Climate, 2015, 28, 978-997.	3.2	22
93	Convective Transition Statistics over Tropical Oceans for Climate Model Diagnostics: GCM Evaluation. Journals of the Atmospheric Sciences, 2020, 77, 379-403.	1.7	22
94	Soil Moisture Impacts on Convective Margins. Journal of Hydrometeorology, 2009, 10, 1026-1039.	1.9	21
95	Deep Convective Transition Characteristics in the Community Climate System Model and Changes under Global Warming. Journal of Climate, 2014, 27, 9214-9232.	3.2	20
96	On the role of aerosols, humidity, and vertical wind shear in the transition of shallow-to-deep convection at the Green Ocean Amazon 2014/5 site. Atmospheric Chemistry and Physics, 2018, 18, 11135-11148.	4.9	20
97	Changes in Frequency of Large Precipitation Accumulations over Land in a Warming Climate from the CESM Large Ensemble: The Roles of Moisture, Circulation, and Duration. Journal of Climate, 2019, 32, 5397-5416.	3.2	20
98	Evaluation of large-scale meteorological patterns associated with temperature extremes in the NARCCAP regional climate model simulations. Climate Dynamics, 2015, 45, 3257-3274.	3.8	18
99	Observed El NiÃ±oâ€Ła NiÃ±a Asymmetry in a Linear Model. Geophysical Research Letters, 2019, 46, 9909-9919.	4.0	18
100	Quasi-Equilibrium and Weak Temperature Gradient Balances in an Equatorial Beta-Plane Model. Journals of the Atmospheric Sciences, 2021, 78, 209-227.	1.7	17
101	Precipitation Extremes and Water Vapor. Current Climate Change Reports, 2022, 8, 17-33.	8.6	17
102	Interaction of Vegetation and Atmospheric Dynamical Mechanisms in the Mid-Holocene African Monsoon*. Journal of Climate, 2006, 19, 4105-4120.	3.2	16
103	Paretoâ€Optimal Estimates of California Precipitation Change. Geophysical Research Letters, 2017, 44, 12,436.	4.0	16
104	Explaining Scales and Statistics of Tropical Precipitation Clusters with a Stochastic Model. Journals of the Atmospheric Sciences, 2019, 76, 3063-3087.	1.7	16
105	Rainfall and Dragon-Kings. European Physical Journal: Special Topics, 2012, 205, 147-158.	2.6	15
106	Sensitivity of terrestrial precipitation trends to the structural evolution of sea surface temperatures. Geophysical Research Letters, 2015, 42, 1190-1196.	4.0	15
107	Short Warm-Side Temperature Distribution Tails Drive Hot Spots of Warm Temperature Extreme Increases under Near-Future Warming. Journal of Climate, 2018, 31, 9469-9487.	3.2	15
108	Distributions of Tropical Precipitation Cluster Power and Their Changes under Global Warming. Part I: Observational Baseline and Comparison to a High-Resolution Atmospheric Model. Journal of Climate, 2017, 30, 8033-8044.	3.2	13

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109	Multiobjective constraints for climate model parameter choices: Pragmatic <scp>P</scp>areto fronts in CESM1. Journal of Advances in Modeling Earth Systems, 2017, 9, 2008-2026.	3.8	13
110	Calculating State-Dependent Noise in a Linear Inverse Model Framework. Journals of the Atmospheric Sciences, 2018, 75, 479-496.	1.7	13
111	ATMOSPHERIC CONVECTION AS A CONTINUOUS PHASE TRANSITION: FURTHER EVIDENCE. International Journal of Modern Physics B, 2009, 23, 5453-5465.	2.0	12
112	Observed Tightening of Tropical Ascent in Recent Decades and Linkage to Regional Precipitation Changes. Geophysical Research Letters, 2020, 47, e2019GL085809.	4.0	12
113	Climate models capture key features of extreme precipitation probabilities across regions. Environmental Research Letters, 2021, 16, 024017.	5.2	12
114	Tropical South Americaâ€“Atlantic Sector Convective Margins and Their Relationship to Low-Level Inflow. Journal of Climate, 2010, 23, 2671-2685.	3.2	11
115	Characterizing CMIP5 model spread in simulated rainfall in the Pacific Intertropical Convergence and South Pacific Convergence Zones. Journal of Geophysical Research D: Atmospheres, 2016, 121, 11590-11607.	3.3	11
116	Relationships Between Tropical Ascent and High Cloud Fraction Changes With Warming Revealed by Perturbation Physics Experiments in CAM5. Geophysical Research Letters, 2019, 46, 10112-10121.	4.0	11
117	Non-Gaussian Cold-Side Temperature Distribution Tails and Associated Synoptic Meteorology. Journal of Climate, 2019, 32, 8399-8414.	3.2	11
118	Evaluation of the Tail of the Probability Distribution of Daily and Subdaily Precipitation in CMIP6 Models. Journal of Climate, 2021, 34, 2701-2721.	3.2	11
119	Exploratory Precipitation Metrics: Spatiotemporal Characteristics, Process-Oriented, and Phenomena-Based. Journal of Climate, 2022, 35, 3659-3686.	3.2	11
120	A dichotomy between model responses of tropical ascent and descent to surface warming. Npj Climate and Atmospheric Science, 2019, 2, .	6.8	10
121	Seaâ€ice interaction and the stability of the thermohaline circulation. Atmosphere - Ocean, 1997, 35, 433-469.	1.6	9
122	Could aerosol emissions be used for regional heat wave mitigation?. Atmospheric Chemistry and Physics, 2013, 13, 6373-6390.	4.9	9
123	Ruelleâ€“Pollicott Resonances of Stochastic Systems in Reduced State Space. Part III: Application to the Caneâ€“Zebiak Model of the El NiÃ±oâ€“Southern Oscillation. Journal of Statistical Physics, 2020, 179, 1449-1474.	1.2	8
124	Long temporal autocorrelations in tropical precipitation data and spike train prototypes. Geophysical Research Letters, 2016, 43, 11,472.	4.0	6
125	Distributions of Tropical Precipitation Cluster Power and Their Changes under Global Warming. Part II: Long-Term Time Dependence in Coupled Model Intercomparison Project Phase 5 Models. Journal of Climate, 2017, 30, 8045-8059.	3.2	6
126	A Processâ€Oriented Diagnostic to Assess Precipitationâ€Thermodynamic Relations and Application to CMIP6 Models. Geophysical Research Letters, 2021, 48, e2021GL094108.	4.0	5

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127	Evaluating CMIP6 model fidelity at simulating non-Gaussian temperature distribution tails. Environmental Research Letters, 2020, 15, 074026.	5.2	5
128	Implementation of the Quasiâ€equilibrium Tropical Circulation Model 2 (QTCM2): Global simulations and convection sensitivity to free tropospheric moisture. Journal of Advances in Modeling Earth Systems, 2012, 4, .	3.8	4
129	High dimensional decision dilemmas in climate models. Geoscientific Model Development, 2013, 6, 1673-1687.	3.6	4
130	Diagnosing Nonâ€Gaussian Temperature Distribution Tails Using Backâ€Trajectory Analysis. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2020JD033726.	3.3	4
131	Global tropical precipitation relationships to free tropospheric water vapor using Radio Occultations. Journals of the Atmospheric Sciences, 2022, , .	1.7	3
132	Where is ENSO stress balanced?. Atmospheric Science Letters, 2004, 5, 13-22.	1.9	2
133	Extreme Tropical Precipitation Clusters Show Strong Increases in Frequency Under Global Warming in CMIP6 Models. Geophysical Research Letters, 2022, 49, .	4.0	1
134	Distinguishing Convective-Transition Moisture-Temperature Relationships with a Constellation of Polarimetric Radio Occultation Observations in and near Convection. Atmosphere, 2022, 13, 259.	2.3	0