

Guang J Zhang

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

111
papers

3,202
citations

34
h-index

52
g-index

121
ext. papers

3,661
ext. citations

5
avg, IF

5.64
L-index

#	Paper	IF	Citations
111	Trends in surface equivalent potential temperature: A more comprehensive metric for global warming and weather extremes.. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2022 , 119,	11.5	10
110	Evaluating and Improving Scale-Awareness of a Convective Parameterization Closure Using Cloud-Resolving Model Simulations of Convection. <i>Journal of Geophysical Research D: Atmospheres</i> , 2022 , 127,	4.4	1
109	Contrasting influences of biogeophysical and biogeochemical impacts of historical land use on global economic inequality.. <i>Nature Communications</i> , 2022 , 13, 2479	17.4	1
108	Stable climate simulations using a realistic general circulation model with neural network parameterizations for atmospheric moist physics and radiation processes. <i>Geoscientific Model Development</i> , 2022 , 15, 3923-3940	6.3	3
107	Unexpected Changes of Aerosol Burdens With Decreased Convection in the Context of Scale-Aware Convection Schemes. <i>Geophysical Research Letters</i> , 2022 , 49,	4.9	
106	Winter Warming in North America Induced by Urbanization in China. <i>Geophysical Research Letters</i> , 2021 , 48, e2021GL095465	4.9	0
105	What rainfall rates are most important to wet removal of different aerosol types?. <i>Atmospheric Chemistry and Physics</i> , 2021 , 21, 16797-16816	6.8	1
104	Effects of coupling a stochastic convective parameterization with the ZhangMcFarlane scheme on precipitation simulation in the DOE E3SMv1.0 atmosphere model. <i>Geoscientific Model Development</i> , 2021 , 14, 1575-1593	6.3	5
103	Linking Deep and Shallow Convective Mass Fluxes via an Assumed Entrainment Distribution in CAM5-CLUBB: Parameterization and Simulated Precipitation Variability. <i>Journal of Advances in Modeling Earth Systems</i> , 2021 , 13, e2020MS002357	7.1	2
102	Geographic Shift and Environment Change of U.S. Tornado Activities in a Warming Climate. <i>Atmosphere</i> , 2021 , 12, 567	2.7	1
101	Understanding the Roles of Convective Trigger Functions in the Diurnal Cycle of Precipitation in the NCAR CAM5. <i>Journal of Climate</i> , 2021 , 1-52	4.4	1
100	Disproportionate control on aerosol burden by light rain. <i>Nature Geoscience</i> , 2021 , 14, 72-76	18.3	16
99	Improving the Physical Basis for Updraft Dynamics in Deep Convection Parameterizations. <i>Journal of Advances in Modeling Earth Systems</i> , 2021 , 13, e2020MS002282	7.1	4
98	Climate response to introduction of the ESA CCI land cover data to the NCAR CESM. <i>Climate Dynamics</i> , 2021 , 56, 4109-4127	4.2	3
97	Using radar observations to evaluate 3-D radar echo structure simulated by the Energy Exascale Earth System Model (E3SM) version 1. <i>Geoscientific Model Development</i> , 2021 , 14, 719-734	6.3	2
96	Factors Affecting Entrainment Rate in Deep Convective Clouds and Parameterizations. <i>Journal of Geophysical Research D: Atmospheres</i> , 2021 , 126, e2021JD034881	4.4	4
95	A New Approach for Simultaneous Estimation of Entrainment and Detrainment Rates in Non-Precipitating Shallow Cumulus. <i>Geophysical Research Letters</i> , 2021 , 48, e2021GL093817	4.9	3

94	Double Trouble of Air Pollution by Anthropogenic Dust.. <i>Environmental Science & Technology</i> , 2021 ,	10.3	1
93	Community Integrated Earth System Model (CIESM): Description and Evaluation. <i>Journal of Advances in Modeling Earth Systems</i> , 2020 , 12, e2019MS002036	7.1	17
92	The Impacts of Horizontal Resolution on the Seasonally Dependent Biases of the Northeastern Pacific ITCZ in Coupled Climate Models. <i>Journal of Climate</i> , 2020 , 33, 941-957	4.4	7
91	Role of Equatorial Cold Tongue in Central Pacific Double-ITCZ Bias in the NCAR CESM1.2. <i>Journal of Climate</i> , 2020 , 33, 10407-10418	4.4	2
90	Studying Scale Dependency of Aerosol Cloud Interactions using Multi-Scale Cloud Formulations. <i>Journals of the Atmospheric Sciences</i> , 2020 , 77, 3847-3868	2.1	1
89	A Moist Physics Parameterization Based on Deep Learning. <i>Journal of Advances in Modeling Earth Systems</i> , 2020 , 12, e2020MS002076	7.1	16
88	Simulated Precipitation Diurnal Variation With a Deep Convective Closure Subject to Shallow Convection in Community Atmosphere Model Version 5 Coupled With CLUBB. <i>Journal of Advances in Modeling Earth Systems</i> , 2020 , 12, e2020MS002050	7.1	7
87	Convective response to large-scale forcing in the tropical western Pacific simulated by spCAM5 and CanAM4.3. <i>Geoscientific Model Development</i> , 2019 , 12, 2107-2117	6.3	1
86	The Weather Research and Forecasting Model with Aerosol-Cloud Interactions (WRF-ACI): Development, Evaluation, and Initial Application. <i>Monthly Weather Review</i> , 2019 , 147, 1491-1511	2.4	11
85	Improved Diurnal Cycle of Precipitation in E3SM With a Revised Convective Triggering Function. <i>Journal of Advances in Modeling Earth Systems</i> , 2019 , 11, 2290-2310	7.1	42
84	The double ITCZ syndrome in GCMs: A coupled feedback problem among convection, clouds, atmospheric and ocean circulations. <i>Atmospheric Research</i> , 2019 , 229, 255-268	5.4	15
83	Culprit of the Eastern Pacific Double-ITCZ Bias in the NCAR CESM1.2. <i>Journal of Climate</i> , 2019 , 32, 6349-6364	4.4	7
82	Relating Convection to GCM Grid-Scale Fields Using Cloud-Resolving Model Simulation of a Squall Line Observed during MC3E Field Experiment. <i>Atmosphere</i> , 2019 , 10, 523	2.7	3
81	The Roles of Convection Parameterization in the Formation of Double ITCZ Syndrome in the NCAR CESM: I. Atmospheric Processes. <i>Journal of Advances in Modeling Earth Systems</i> , 2018 , 10, 842-866	7.1	21
80	Analysis of Cloud-Resolving Model Simulations for Scale Dependence of Convective Momentum Transport. <i>Journals of the Atmospheric Sciences</i> , 2018 , 75, 2445-2472	2.1	1
79	Understanding and Improving the Scale Dependence of Trigger Functions for Convective Parameterization Using Cloud-Resolving Model Data. <i>Journal of Climate</i> , 2018 , 31, 7385-7399	4.4	9
78	A long-term tropical mesoscale convective systems dataset based on a novel objective automatic tracking algorithm. <i>Climate Dynamics</i> , 2018 , 51, 3145-3159	4.2	30
77	Linking Stochasticity of Convection to Large-Scale Vertical Velocity to Improve Indian Summer Monsoon Simulation in the NCAR CAM5. <i>Journal of Climate</i> , 2018 , 31, 6985-7002	4.4	6

76	Improving the Simulation of Tropical Convective Cloud-Top Heights in CAM5 with CloudSat Observations. <i>Journal of Climate</i> , 2018 , 31, 5189-5204	4.4	7
75	Evaluating AMIP Skill in Simulating Interannual Variability over the Indo-Western Pacific. <i>Journal of Climate</i> , 2018 , 31, 2253-2265	4.4	19
74	Observational Relationship Between Entrainment Rate and Environmental Relative Humidity and Implications for Convection Parameterization. <i>Geophysical Research Letters</i> , 2018 , 45, 13,495	4.9	12
73	Impact of Tropical SSTs in the North Atlantic and Southeastern Pacific on the Eastern Pacific ITCZ. <i>Journal of Climate</i> , 2017 , 30, 1291-1305	4.4	9
72	Simulation of Precipitation Extremes Using a Stochastic Convective Parameterization in the NCAR CAM5 Under Different Resolutions. <i>Journal of Geophysical Research D: Atmospheres</i> , 2017 , 122, 12,875	4.4	9
71	Improving Trigger Functions for Convective Parameterization Schemes Using GOAmazon Observations. <i>Journal of Climate</i> , 2017 , 30, 8711-8726	4.4	13
70	Role of Vertical Structure of Convective Heating in MJO Simulation in NCAR CAM5.3. <i>Journal of Climate</i> , 2017 , 30, 7423-7439	4.4	13
69	Assessing the Resolution Adaptability of the Zhang-McFarlane Cumulus Parameterization With Spatial and Temporal Averaging. <i>Journal of Advances in Modeling Earth Systems</i> , 2017 , 9, 2753-2770	7.1	8
68	Estimation of convective entrainment properties from a cloud-resolving model simulation during TWP-ICE. <i>Climate Dynamics</i> , 2016 , 47, 2177-2192	4.2	20
67	Improving Parameterization of Entrainment Rate for Shallow Convection with Aircraft Measurements and Large-Eddy Simulation. <i>Journals of the Atmospheric Sciences</i> , 2016 , 73, 761-773	2.1	27
66	Global climate impacts of stochastic deep convection parameterization in the NCAR CAM5. <i>Journal of Advances in Modeling Earth Systems</i> , 2016 , 8, 1641-1656	7.1	20
65	Stochastic convective parameterization improving the simulation of tropical precipitation variability in the NCAR CAM5. <i>Geophysical Research Letters</i> , 2016 , 43, 6612-6619	4.9	31
64	Parameterization of Microphysical Processes in Convective Clouds in Global Climate Models. <i>Meteorological Monographs</i> , 2016 , 56, 12.1-12.18	5.7	7
63	Effects of Southeastern Pacific Sea Surface Temperature on the Double-ITCZ Bias in NCAR CESM1. <i>Journal of Climate</i> , 2016 , 29, 7417-7433	4.4	21
62	Comments on A Unified Representation of Deep Moist Convection in Numerical Modeling of the Atmosphere. Part II. <i>Journals of the Atmospheric Sciences</i> , 2015 , 72, 2562-2565	2.1	7
61	Vertical structure and physical processes of the Madden-Julian oscillation: Exploring key model physics in climate simulations. <i>Journal of Geophysical Research D: Atmospheres</i> , 2015 , 120, 4718-4748	4.4	255
60	Evaluating convective parameterization closures using cloud-resolving model simulation of tropical deep convection. <i>Journal of Geophysical Research D: Atmospheres</i> , 2015 , 120, 1260-1277	4.4	19
59	Improving representation of convective transport for scale-aware parameterization: 2. Analysis of cloud-resolving model simulations. <i>Journal of Geophysical Research D: Atmospheres</i> , 2015 , 120, 3510-3532	4.4	17

58	Improving representation of convective transport for scale-aware parameterization: 1. Convection and cloud properties simulated with spectral bin and bulk microphysics. <i>Journal of Geophysical Research D: Atmospheres</i> , 2015 , 120, 3485-3509	4.4	43
57	Vertical structure and physical processes of the Madden-Julian oscillation: Linking hindcast fidelity to simulated diabatic heating and moistening. <i>Journal of Geophysical Research D: Atmospheres</i> , 2015 , 120, 4690-4717	4.4	54
56	An Observational Study of Entrainment Rate in Deep Convection. <i>Atmosphere</i> , 2015 , 6, 1362-1376	2.7	13
55	Effects of Convective Microphysics Parameterization on Large-Scale Cloud Hydrological Cycle and Radiative Budget in Tropical and Midlatitude Convective Regions. <i>Journal of Climate</i> , 2015 , 28, 9277-9297	4.4	12
54	Evaluation of Trigger Functions for Convective Parameterization Schemes Using Observations. <i>Journal of Climate</i> , 2014 , 27, 7647-7666	4.4	49
53	The Role of Nonconvective Condensation Processes in Response of Surface Shortwave Cloud Radiative Forcing to El Niño Warming. <i>Journal of Climate</i> , 2014 , 27, 6721-6736	4.4	21
52	Role of Climate Feedback in El Niño-like SST Response to Global Warming. <i>Journal of Climate</i> , 2014 , 27, 7301-7318	4.4	20
51	Diagnosing MJO hindcast biases in NCAR CAM3 using nudging during the DYNAMO field campaign. <i>Journal of Geophysical Research D: Atmospheres</i> , 2014 , 119, 7231-7253	4.4	12
50	Investigation of aerosol indirect effects using a cumulus microphysics parameterization in a regional climate model. <i>Journal of Geophysical Research D: Atmospheres</i> , 2014 , 119, 906-926	4.4	32
49	Characterizing the Climate Feedback Pattern in the NCAR CCSM3-SOM Using Hourly Data. <i>Journal of Climate</i> , 2014 , 27, 2912-2930	4.4	6
48	Quantifying contributions of climate feedbacks to tropospheric warming in the NCAR CCSM3.0. <i>Climate Dynamics</i> , 2014 , 42, 901-917	4.2	12
47	A Decomposition of Feedback Contributions to Polar Warming Amplification. <i>Journal of Climate</i> , 2013 , 26, 7023-7043	4.4	158
46	Energy consumption and the unexplained winter warming over northern Asia and North America. <i>Nature Climate Change</i> , 2013 , 3, 466-470	21.4	69
45	Impacts of Shallow Convection on MJO Simulation: A Moist Static Energy and Moisture Budget Analysis. <i>Journal of Climate</i> , 2013 , 26, 2417-2431	4.4	36
44	Uncertainty quantification and parameter tuning in the CAM5 Zhang-McFarlane convection scheme and impact of improved convection on the global circulation and climate. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013 , 118, 395-415	4.4	89
43	Simulation of the intraseasonal variability over the Eastern Pacific ITCZ in climate models. <i>Climate Dynamics</i> , 2012 , 39, 617-636	4.2	19
42	Evaluation of Microphysics Parameterization for Convective Clouds in the NCAR Community Atmosphere Model CAM5. <i>Journal of Climate</i> , 2012 , 25, 8568-8590	4.4	47
41	Microphysics parameterization for convective clouds in a global climate model: Description and single-column model tests. <i>Journal of Geophysical Research</i> , 2011 , 116,		79

40	Convection Parameterization, Tropical Pacific Double ITCZ, and Upper-Ocean Biases in the NCAR CCSM3. Part II: Coupled Feedback and the Role of Ocean Heat Transport. <i>Journal of Climate</i> , 2010 , 23, 800-812	4.4	35
39	Relating Satellite-Observed Cloud Properties from MODIS to Meteorological Conditions for Marine Boundary Layer Clouds. <i>Journal of Climate</i> , 2010 , 23, 1374-1391	4.4	15
38	Performance of the New NCAR CAM3.5 in East Asian Summer Monsoon Simulations: Sensitivity to Modifications of the Convection Scheme. <i>Journal of Climate</i> , 2010 , 23, 3657-3675	4.4	105
37	Increased greenhouse gases enhance regional climate response to a Maunder Minimum. <i>Geophysical Research Letters</i> , 2010 , 37, n/a-n/a	4.9	10
36	Convection Parameterization, Tropical Pacific Double ITCZ, and Upper-Ocean Biases in the NCAR CCSM3. Part I: Climatology and Atmospheric Feedback. <i>Journal of Climate</i> , 2009 , 22, 4299-4315	4.4	70
35	Simulations of the 2004 North American Monsoon: NAMAP2. <i>Journal of Climate</i> , 2009 , 22, 6716-6740	4.4	30
34	Aerosol direct forcing of the summer Indian monsoon as simulated by the NCAR CAM3. <i>Climate Dynamics</i> , 2009 , 32, 313-332	4.2	56
33	Interaction of deep and shallow convection is key to Madden-Julian Oscillation simulation. <i>Geophysical Research Letters</i> , 2009 , 36,	4.9	52
32	Effects of entrainment on convective available potential energy and closure assumptions in convection parameterization. <i>Journal of Geophysical Research</i> , 2009 , 114,		40
31	Energetics of Madden Julian Oscillations in the NCAR CAM3: A Composite View. <i>Journal of Geophysical Research</i> , 2008 , 113, n/a-n/a		12
30	Understanding biases in shortwave cloud radiative forcing in the National Center for Atmospheric Research Community Atmosphere Model (CAM3) during El Niño. <i>Journal of Geophysical Research</i> , 2008 , 113,		5
29	Dynamical Effects of Convective Momentum Transports on Global Climate Simulations. <i>Journal of Climate</i> , 2008 , 21, 180-194	4.4	11
28	Understanding the Effects of Convective Momentum Transport on Climate Simulations: The Role of Convective Heating. <i>Journal of Climate</i> , 2008 , 21, 5034-5047	4.4	10
27	Investigation of Regional and Seasonal Variations in Marine Boundary Layer Cloud Properties from MODIS Observations. <i>Journal of Climate</i> , 2008 , 21, 4955-4973	4.4	39
26	Impact of a modified convective scheme on the Madden-Julian Oscillation and El Niño Southern Oscillation in a coupled climate model. <i>Geophysical Research Letters</i> , 2007 , 34,	4.9	50
25	Coupling of Convective Momentum Transport with Convective Heating in Global Climate Simulations. <i>Journals of the Atmospheric Sciences</i> , 2007 , 64, 1334-1349	2.1	43
24	Effects of Increased Horizontal Resolution on Simulation of the North American Monsoon in the NCAR CAM3: An Evaluation Based on Surface, Satellite, and Reanalysis Data. <i>Journal of Climate</i> , 2007 , 20, 1843-1861	4.4	19
23	Toward mitigating the double ITCZ problem in NCAR CCSM3. <i>Geophysical Research Letters</i> , 2006 , 33,	4.9	70

22	Energetics of Madden-Julian oscillations in the National Center for Atmospheric Research Community Atmosphere Model version 3 (NCAR CAM3). <i>Journal of Geophysical Research</i> , 2006 , 111,		9
21	Simulation of the North American Monsoon by the NCAR CCM3 and Its Sensitivity to Convection Parameterization. <i>Journal of Climate</i> , 2006 , 19, 2851-2866	4-4	15
20	Simulations of midlatitude frontal clouds by single-column and cloud-resolving models during the Atmospheric Radiation Measurement March 2000 cloud intensive operational period. <i>Journal of Geophysical Research</i> , 2005 , 110,		56
19	Effects of modifications to the Zhang-McFarlane convection parameterization on the simulation of the tropical precipitation in the National Center for Atmospheric Research Community Climate Model, version 3. <i>Journal of Geophysical Research</i> , 2005 , 110,		52
18	Simulation of the Madden-Julian Oscillation in the NCAR CCM3 Using a Revised Zhang-McFarlane Convection Parameterization Scheme. <i>Journal of Climate</i> , 2005 , 18, 4046-4064	4-4	120
17	Impact of absorbing aerosol on precipitation: Dynamic aspects in association with convective available potential energy and convective parameterization closure and dependence on aerosol heating profile. <i>Journal of Geophysical Research</i> , 2004 , 109, n/a-n/a		30
16	PARAMETERIZATION OF CONVECTION IN GLOBAL CLIMATE MODELS. <i>World Scientific Series on Asia-Pacific Weather and Climate</i> , 2004 , 184-205		
15	Lagrangian Study of Cloud Properties and Their Relationships to Meteorological Parameters over the U.S. Southern Great Plains. <i>Journal of Climate</i> , 2003 , 16, 2700-2716	4-4	6
14	Convective Momentum Transport and Perturbation Pressure Field from a Cloud-Resolving Model Simulation. <i>Journals of the Atmospheric Sciences</i> , 2003 , 60, 1120-1139	2-1	41
13	Seasonal migration of ITCZ precipitation across the equator: Why can't GCMs simulate it?. <i>Geophysical Research Letters</i> , 2003 , 30,	4-9	50
12	Roles of tropospheric and boundary layer forcing in the diurnal cycle of convection in the U.S. southern great plains. <i>Geophysical Research Letters</i> , 2003 , 30,	4-9	59
11	Convective quasi-equilibrium in the tropical western Pacific: Comparison with midlatitude continental environment. <i>Journal of Geophysical Research</i> , 2003 , 108,		54
10	Intercomparison and evaluation of cumulus parametrizations under summertime midlatitude continental conditions. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2002 , 128, 1095-1135	6-4	106
9	Convective quasi-equilibrium in midlatitude continental environment and its effect on convective parameterization. <i>Journal of Geophysical Research</i> , 2002 , 107, ACL 12-1		138
8	Preliminary Evaluation of a Revised Zhang-McFarlane Convection Scheme Using the NCAR CCM3 GCM. <i>Advances in Atmospheric Sciences</i> , 2001 , 18, 710-717	2-9	55
7	Spatial characteristics of the tropical cloud systems: comparison between model simulation and satellite observations. <i>Tellus, Series A: Dynamic Meteorology and Oceanography</i> , 1999 , 51, 922-936	2	4
6	Response of Climate Simulation to a New Convective Parameterization in the National Center for Atmospheric Research Community Climate Model (CCM3)*. <i>Journal of Climate</i> , 1998 , 11, 2097-2115	4-4	25
5	Role of convective scale momentum transport in climate simulation. <i>Journal of Geophysical Research</i> , 1995 , 100, 1417-1426		79

4	Convection-Evaporation Feedback in the Equatorial Pacific. <i>Journal of Climate</i> , 1995 , 8, 3040-3051	4.4	34
3	Parameterization of the Vertical Transport of Momentum by Cumulus Clouds. Part I: Theory. <i>Journal of the Atmospheric Sciences</i> , 1991 , 48, 1483-1492	2.1	42
2	Convective Stabilization in Midlatitudes. <i>Monthly Weather Review</i> , 1991 , 119, 1915-1928	2.4	14
1	Current Challenges in Climate and Weather Research and Future Directions. <i>Atmosphere - Ocean</i> , 1-12	1.5	0