

# Hugh Morrison

## List of Publications by Year in descending order

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111  
papers

11,158  
citations

38660

50  
h-index

31759

101  
g-index

115  
all docs

115  
docs citations

115  
times ranked

5848  
citing authors

#	ARTICLE	IF	CITATIONS
1	Influences of Environmental Relative Humidity and Horizontal Scale of Subcloud Ascent on Deep Convective Initiation. <i>Journals of the Atmospheric Sciences</i> , 2022, 79, 337-359.	0.6	11
2	Limitations of Bin and Bulk Microphysics in Reproducing the Observed Spatial Structure of Light Precipitation. <i>Journals of the Atmospheric Sciences</i> , 2022, 79, 161-178.	0.6	4
3	Supersaturation Variability from Scalar Mixing: Evaluation of a New Subgrid-Scale Model Using Direct Numerical Simulations of Turbulent Rayleigh-Bénard Convection. <i>Journals of the Atmospheric Sciences</i> , 2022, 79, 1191-1210.	0.6	2
4	Observed and Bin Model Simulated Evolution of Drop Size Distributions in High-Resolution Based Cumulus Congestus Over the United Arab Emirates. <i>Journal of Geophysical Research D: Atmospheres</i> , 2022, 127, .	1.2	3
5	Microphysical processes producing high ice water contents (HIWCs) in tropical convective clouds during the HAIC-HIWC field campaign: dominant role of secondary ice production. <i>Atmospheric Chemistry and Physics</i> , 2022, 22, 2365-2384.	1.9	5
6	Limitations of Separate Cloud and Rain Categories in Parameterizing Collision-Coalescence for Bulk Microphysics Schemes. <i>Journal of Advances in Modeling Earth Systems</i> , 2022, 14, .	1.3	3
7	Improving the Physical Basis for Updraft Dynamics in Deep Convection Parameterizations. <i>Journal of Advances in Modeling Earth Systems</i> , 2021, 13, e2020MS002282.	1.3	11
8	A Triple-Moment Representation of Ice in the Predicted Particle Properties (P3) Microphysics Scheme. <i>Journals of the Atmospheric Sciences</i> , 2021, 78, 439-458.	0.6	26
9	Machine Learning the Warm Rain Process. <i>Journal of Advances in Modeling Earth Systems</i> , 2021, 13, e2020MS002268.	1.3	35
10	Comparing Growth Rates of Simulated Moist and Dry Convective Thermals. <i>Journals of the Atmospheric Sciences</i> , 2021, 78, 797-816.	0.6	8
11	Impact of entrainment-mixing and turbulent fluctuations on droplet size distributions in a cumulus cloud: An investigation using Lagrangian microphysics with a sub-grid-scale model. <i>Journals of the Atmospheric Sciences</i> , 2021, , .	0.6	9
12	How Does LCL Height Influence Deep Convective Updraft Width?. <i>Geophysical Research Letters</i> , 2021, 48, e2021GL093316.	1.5	13
13	Observed and simulated variability of droplet spectral dispersion in convective clouds over the Amazon. <i>Journal of Geophysical Research D: Atmospheres</i> , 2021, 126, e2021JD035076.	1.2	4
14	Impacts of Latent Energy and Snow Fall Speed on a Wintertime Midlatitude Cyclone. <i>Journal of Geophysical Research D: Atmospheres</i> , 2020, 125, e2020JD032655.	1.2	0
15	Confronting the Challenge of Modeling Cloud and Precipitation Microphysics. <i>Journal of Advances in Modeling Earth Systems</i> , 2020, 12, e2019MS001689.	1.3	154
16	Thermal Chains and Entrainment in Cumulus Updrafts. Part I: Theoretical Description. <i>Journals of the Atmospheric Sciences</i> , 2020, 77, 3637-3660.	0.6	33
17	Thermal Chains and Entrainment in Cumulus Updrafts. Part II: Analysis of Idealized Simulations. <i>Journals of the Atmospheric Sciences</i> , 2020, 77, 3661-3681.	0.6	24
18	A Formula for the Maximum Vertical Velocity in Supercell Updrafts. <i>Journals of the Atmospheric Sciences</i> , 2020, 77, 3747-3757.	0.6	18

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19	Effects of Under-Resolved Convective Dynamics on the Evolution of a Squall Line. <i>Monthly Weather Review</i> , 2020, 148, 289-311.	0.5	21
20	Adaptation of the Predicted Particles Properties (P3) Microphysics Scheme for Large-Scale Numerical Weather Prediction. <i>Weather and Forecasting</i> , 2020, 35, 2541-2565.	0.5	6
21	Drop Size Distribution Broadening Mechanisms in a Bin Microphysics Eulerian Model. <i>Journals of the Atmospheric Sciences</i> , 2020, 77, 3249-3273.	0.6	14
22	Cloud-Resolving Model Intercomparison of an MC3E Squall Line Case: Part II. Stratiform Precipitation Properties. <i>Journal of Geophysical Research D: Atmospheres</i> , 2019, 124, 1090-1117.	1.2	43
23	Parameterization of the Bulk Liquid Fraction on Mixed-Phase Particles in the Predicted Particle Properties (P3) Scheme: Description and Idealized Simulations. <i>Journals of the Atmospheric Sciences</i> , 2019, 76, 561-582.	0.6	27
24	On Calculating Deposition Coefficients and Aspect-Ratio Evolution in Approximate Models of Ice Crystal Vapor Growth. <i>Journals of the Atmospheric Sciences</i> , 2019, 76, 1609-1625.	0.6	23
25	Effects of the Representation of Rimed Ice in Bulk Microphysics Schemes on Polarimetric Signatures. <i>Monthly Weather Review</i> , 2019, 147, 3785-3810.	0.5	7
26	The Role of Vertical Wind Shear in Modulating Maximum Supercell Updraft Velocities. <i>Journals of the Atmospheric Sciences</i> , 2019, 76, 3169-3189.	0.6	56
27	The Influence of Vertical Wind Shear on Moist Thermals. <i>Journals of the Atmospheric Sciences</i> , 2019, 76, 1645-1659.	0.6	30
28	Three-Moment Representation of Rain in a Bulk Microphysics Model. <i>Journal of Advances in Modeling Earth Systems</i> , 2019, 11, 257-277.	1.3	32
29	Cloud Microphysics Across Scales for Weather and Climate. <i>Springer Atmospheric Sciences</i> , 2019, , 71-94.	0.4	2
30	A novel approach for characterizing the variability in mass-dimension relationships: results from MC3E. <i>Atmospheric Chemistry and Physics</i> , 2019, 19, 3621-3643.	1.9	27
31	100 Years of Earth System Model Development. <i>Meteorological Monographs</i> , 2019, 59, 12.1-12.66.	5.0	48
32	Modeling of Cloud Microphysics: Can We Do Better?. <i>Bulletin of the American Meteorological Society</i> , 2019, 100, 655-672.	1.7	98
33	Sensitivity of Simulated Deep Convection to a Stochastic Ice Microphysics Framework. <i>Journal of Advances in Modeling Earth Systems</i> , 2019, 11, 3362-3389.	1.3	20
34	A Bayesian Approach for Statistical-Physical Bulk Parameterization of Rain Microphysics. Part II: Idealized Markov Chain Monte Carlo Experiments. <i>Journals of the Atmospheric Sciences</i> , 2019, 77, 1043-1064.	0.6	10
35	A Bayesian Approach for Statistical-Physical Bulk Parameterization of Rain Microphysics. Part I: Scheme Description. <i>Journals of the Atmospheric Sciences</i> , 2019, 77, 1019-1041.	0.6	19
36	A General N-Moment Normalization Method for Deriving Raindrop Size Distribution Scaling Relationships. <i>Journal of Applied Meteorology and Climatology</i> , 2019, 58, 247-267.	0.6	24

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37	Theoretical Expressions for the Ascent Rate of Moist Deep Convective Thermals. <i>Journals of the Atmospheric Sciences</i> , 2018, 75, 1699-1719.	0.6	37
38	Microphysical Characteristics of Squall-Line Stratiform Precipitation and Transition Zones Simulated Using an Ice Particle Property-Evolving Model. <i>Monthly Weather Review</i> , 2018, 146, 723-743.	0.5	27
39	Broadening of Modeled Cloud Droplet Spectra Using Bin Microphysics in an Eulerian Spatial Domain. <i>Journals of the Atmospheric Sciences</i> , 2018, 75, 4005-4030.	0.6	41
40	Sensitivity of Mountain Hydroclimate Simulations in Variable-Resolution CESM to Microphysics and Horizontal Resolution. <i>Journal of Advances in Modeling Earth Systems</i> , 2018, 10, 1357-1380.	1.3	28
41	Effects of Scavenging, Entrainment, and Aqueous Chemistry on Peroxides and Formaldehyde in Deep Convective Outflow Over the Central and Southeast United States. <i>Journal of Geophysical Research D: Atmospheres</i> , 2018, 123, 7594-7614.	1.2	15
42	An Analytic Description of the Structure and Evolution of Growing Deep Cumulus Updrafts. <i>Journals of the Atmospheric Sciences</i> , 2017, 74, 809-834.	0.6	58
43	Improvements in Global Climate Model Microphysics Using a Consistent Representation of Ice Particle Properties. <i>Journal of Climate</i> , 2017, 30, 609-629.	1.2	26
44	Predicting Ice Shape Evolution in a Bulk Microphysics Model. <i>Journals of the Atmospheric Sciences</i> , 2017, 74, 2081-2104.	0.6	65
45	Ice Nucleation Parameterization and Relative Humidity Distribution in Idealized Squall-Line Simulations. <i>Journals of the Atmospheric Sciences</i> , 2017, 74, 2761-2787.	0.6	9
46	Cloud-resolving model intercomparison of an MC3E squall line case: Part I—Convective updrafts. <i>Journal of Geophysical Research D: Atmospheres</i> , 2017, 122, 9351-9378.	1.2	106
47	Idealized Simulations of a Squall Line from the MC3E Field Campaign Applying Three Bin Microphysics Schemes: Dynamic and Thermodynamic Structure. <i>Monthly Weather Review</i> , 2017, 145, 4789-4812.	0.5	55
48	Dynamical conditions of ice supersaturation and ice nucleation in convective systems: A comparative analysis between in situ aircraft observations and WRF simulations. <i>Journal of Geophysical Research D: Atmospheres</i> , 2017, 122, 2844-2866.	1.2	9
49	A single ice approach using varying ice particle properties in global climate model microphysics. <i>Journal of Advances in Modeling Earth Systems</i> , 2017, 9, 2138-2157.	1.3	21
50	Advection of Coupled Hydrometeor Quantities in Bulk Cloud Microphysics Schemes. <i>Monthly Weather Review</i> , 2016, 144, 2809-2829.	0.5	14
51	Cloud-Resolving Modeling: ARM and the GCSS Story. <i>Meteorological Monographs</i> , 2016, 57, 25.1-25.16.	5.0	10
52	Wet scavenging of soluble gases in DC3 deep convective storms using WRF-Chem simulations and aircraft observations. <i>Journal of Geophysical Research D: Atmospheres</i> , 2016, 121, 4233-4257.	1.2	29
53	Parameterization of Cloud Microphysics Based on the Prediction of Bulk Ice Particle Properties. Part III: Introduction of Multiple Free Categories. <i>Journals of the Atmospheric Sciences</i> , 2016, 73, 975-995.	0.6	95
54	Impacts of Updraft Size and Dimensionality on the Perturbation Pressure and Vertical Velocity in Cumulus Convection. Part I: Simple, Generalized Analytic Solutions. <i>Journals of the Atmospheric Sciences</i> , 2016, 73, 1441-1454.	0.6	62

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55	Effects of Horizontal and Vertical Grid Spacing on Mixing in Simulated Squall Lines and Implications for Convective Strength and Structure. <i>Monthly Weather Review</i> , 2015, 143, 4355-4375.	0.5	87
56	Aerosol transport and wet scavenging in deep convective clouds: A case study and model evaluation using a multiple passive tracer analysis approach. <i>Journal of Geophysical Research D: Atmospheres</i> , 2015, 120, 8448-8468.	1.2	56
57	Parameterization of Cloud Microphysics Based on the Prediction of Bulk Ice Particle Properties. Part II: Case Study Comparisons with Observations and Other Schemes. <i>Journals of the Atmospheric Sciences</i> , 2015, 72, 312-339.	0.6	146
58	Parameterization of Cloud Microphysics Based on the Prediction of Bulk Ice Particle Properties. Part I: Scheme Description and Idealized Tests. <i>Journals of the Atmospheric Sciences</i> , 2015, 72, 287-311.	0.6	368
59	Advanced Two-Moment Bulk Microphysics for Global Models. Part II: Global Model Solutions and Aerosol-Cloud Interactions*. <i>Journal of Climate</i> , 2015, 28, 1288-1307.	1.2	177
60	The Microphysics of Ice and Precipitation Development in Tropical Cumulus Clouds. <i>Journals of the Atmospheric Sciences</i> , 2015, 72, 2429-2445.	0.6	156
61	Advanced Two-Moment Bulk Microphysics for Global Models. Part I: Off-Line Tests and Comparison with Other Schemes. <i>Journal of Climate</i> , 2015, 28, 1268-1287.	1.2	267
62	A unified parameterization of clouds and turbulence using CLUBB and subcolumns in the Community Atmosphere Model. <i>Geoscientific Model Development</i> , 2015, 8, 3801-3821.	1.3	39
63	Dynamical and Microphysical Evolution during Mixed-Phase Cloud Glaciation Simulated Using the Bulk Adaptive Habit Prediction Model. <i>Journals of the Atmospheric Sciences</i> , 2014, 71, 4158-4180.	0.6	26
64	The Sensitivity of Springtime Arctic Mixed-Phase Stratocumulus Clouds to Surface-Layer and Cloud-Top Inversion-Layer Moisture Sources. <i>Journals of the Atmospheric Sciences</i> , 2014, 71, 574-595.	0.6	72
65	Process-model simulations of cloud albedo enhancement by aerosols in the Arctic. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2014, 372, 20140052.	1.6	21
66	Intercomparison of large-eddy simulations of Arctic mixed-phase clouds: Importance of ice size distribution assumptions. <i>Journal of Advances in Modeling Earth Systems</i> , 2014, 6, 223-248.	1.3	114
67	Investigating ice nucleation in cirrus clouds with an aerosol-enabled Multiscale Modeling Framework. <i>Journal of Advances in Modeling Earth Systems</i> , 2014, 6, 998-1015.	1.3	10
68	Comparison of ice cloud properties simulated by the Community Atmosphere Model (CAM5) with in-situ observations. <i>Atmospheric Chemistry and Physics</i> , 2014, 14, 10103-10118.	1.9	29
69	Homogeneity of the Subgrid-Scale Turbulent Mixing in Large-Eddy Simulation of Shallow Convection. <i>Journals of the Atmospheric Sciences</i> , 2013, 70, 2751-2767.	0.6	35
70	Higher-Order Turbulence Closure and Its Impact on Climate Simulations in the Community Atmosphere Model. <i>Journal of Climate</i> , 2013, 26, 9655-9676.	1.2	165
71	A Method for Adaptive Habit Prediction in Bulk Microphysical Models. Part I: Theoretical Development. <i>Journals of the Atmospheric Sciences</i> , 2013, 70, 349-364.	0.6	97
72	Microphysical process rates and global aerosol-cloud interactions. <i>Atmospheric Chemistry and Physics</i> , 2013, 13, 9855-9867.	1.9	66

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73	A FIRE-ACE/SHEBA Case Study of Mixed-Phase Arctic Boundary Layer Clouds: Entrainment Rate Limitations on Rapid Primary Ice Nucleation Processes. <i>Journals of the Atmospheric Sciences</i> , 2012, 69, 365-389.	0.6	77
74	Impact of Microphysics Scheme Complexity on the Propagation of Initial Perturbations. <i>Monthly Weather Review</i> , 2012, 140, 2287-2296.	0.5	29
75	Sensitivity of Idealized Squall-Line Simulations to the Level of Complexity Used in Two-Moment Bulk Microphysics Schemes. <i>Monthly Weather Review</i> , 2012, 140, 1883-1907.	0.5	73
76	Are simulated aerosol-induced effects on deep convective clouds strongly dependent on saturation adjustment?. <i>Atmospheric Chemistry and Physics</i> , 2012, 12, 9941-9964.	1.9	90
77	A comparison of TWP-ICE observational data with cloud-resolving model results. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	108
78	Sensitivity of a Simulated Squall Line to Horizontal Resolution and Parameterization of Microphysics. <i>Monthly Weather Review</i> , 2012, 140, 202-225.	0.5	350
79	Sensitivity of a Simulated Midlatitude Squall Line to Parameterization of Raindrop Breakup. <i>Monthly Weather Review</i> , 2012, 140, 2437-2460.	0.5	74
80	Aerosol impacts on clouds and precipitation in eastern China: Results from bin and bulk microphysics. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	152
81	Constraining cloud lifetime effects of aerosols using A-train satellite observations. <i>Geophysical Research Letters</i> , 2012, 39, .	1.5	117
82	Resilience of persistent Arctic mixed-phase clouds. <i>Nature Geoscience</i> , 2012, 5, 11-17.	5.4	498
83	Evidence of liquid dependent ice nucleation in high-latitude stratiform clouds from surface remote sensors. <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	1.5	154
84	Intercomparison of cloud model simulations of Arctic mixed-phase boundary layer clouds observed during SHEBA/FIRE-ACE. <i>Journal of Advances in Modeling Earth Systems</i> , 2011, 3, n/a-n/a.	1.3	90
85	Comparison of Two-Moment Bulk Microphysics Schemes in Idealized Supercell Thunderstorm Simulations. <i>Monthly Weather Review</i> , 2011, 139, 1103-1130.	0.5	158
86	Moisture and dynamical interactions maintaining decoupled Arctic mixed-phase stratocumulus in the presence of a humidity inversion. <i>Atmospheric Chemistry and Physics</i> , 2011, 11, 10127-10148.	1.9	112
87	Snow microphysical observations in shallow mixed-phase and deep frontal Arctic cloud systems. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2011, 137, 1589-1601.	1.0	10
88	Indirect and Semi-direct Aerosol Campaign. <i>Bulletin of the American Meteorological Society</i> , 2011, 92, 183-201.	1.7	228
89	Two-moment bulk stratiform cloud microphysics in the GFDL AM3 GCM: description, evaluation, and sensitivity tests. <i>Atmospheric Chemistry and Physics</i> , 2010, 10, 8037-8064.	1.9	87
90	Modeling convective-stratiform precipitation processes on a Mei-Yu front with the Weather Research and Forecasting model: Comparison with observations and sensitivity to cloud microphysics parameterizations. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	67

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91	WMO INTERNATIONAL CLOUD MODELING WORKSHOP. Bulletin of the American Meteorological Society, 2009, 90, 1683-1686.	1.7	7
92	Investigation of Microphysical Parameterizations of Snow and Ice in Arctic Clouds during M-PACE through Model-Observation Comparisons. Monthly Weather Review, 2009, 137, 3110-3128.	0.5	52
93	Intercomparison of model simulations of mixed-phase clouds observed during the ARM Mixed-Phase Arctic Cloud Experiment. II: Multilayer cloud. Quarterly Journal of the Royal Meteorological Society, 2009, 135, 1003-1019.	1.0	84
94	Intercomparison of model simulations of mixed-phase clouds observed during the ARM Mixed-Phase Arctic Cloud Experiment. I: single-layer cloud. Quarterly Journal of the Royal Meteorological Society, 2009, 135, 979-1002.	1.0	224
95	Impact of Cloud Microphysics on the Development of Trailing Stratiform Precipitation in a Simulated Squall Line: Comparison of One- and Two-Moment Schemes. Monthly Weather Review, 2009, 137, 991-1007.	0.5	1,639
96	Sensitivity of modeled arctic mixed-phase stratocumulus to cloud condensation and ice nuclei over regionally varying surface conditions. Journal of Geophysical Research, 2008, 113, .	3.3	84
97	Multi-layer arctic mixed-phase clouds simulated by a cloud-resolving model: Comparison with ARM observations and sensitivity experiments. Journal of Geophysical Research, 2008, 113, .	3.3	33
98	A New Two-Moment Bulk Stratiform Cloud Microphysics Scheme in the Community Atmosphere Model, Version 3 (CAM3). Part I: Description and Numerical Tests. Journal of Climate, 2008, 21, 3642-3659.	1.2	962
99	A New Two-Moment Bulk Stratiform Cloud Microphysics Scheme in the Community Atmosphere Model, Version 3 (CAM3). Part II: Single-Column and Global Results. Journal of Climate, 2008, 21, 3660-3679.	1.2	189
100	Modeling Supersaturation and Subgrid-Scale Mixing with Two-Moment Bulk Warm Microphysics. Journals of the Atmospheric Sciences, 2008, 65, 792-812.	0.6	159
101	A Novel Approach for Representing Ice Microphysics in Models: Description and Tests Using a Kinematic Framework. Journals of the Atmospheric Sciences, 2008, 65, 1528-1548.	0.6	139
102	Arctic Mixed-Phase Clouds Simulated by a Cloud-Resolving Model: Comparison with ARM Observations and Sensitivity to Microphysics Parameterizations. Journals of the Atmospheric Sciences, 2008, 65, 1285-1303.	0.6	33
103	Toward the Mitigation of Spurious Cloud-Edge Supersaturation in Cloud Models. Monthly Weather Review, 2008, 136, 1224-1234.	0.5	40
104	Comparison of Bulk and Bin Warm-Rain Microphysics Models Using a Kinematic Framework. Journals of the Atmospheric Sciences, 2007, 64, 2839-2861.	0.6	174
105	Intercomparison of Bulk Cloud Microphysics Schemes in Mesoscale Simulations of Springtime Arctic Mixed-Phase Stratiform Clouds. Monthly Weather Review, 2006, 134, 1880-1900.	0.5	76
106	A New Double-Moment Microphysics Parameterization for Application in Cloud and Climate Models. Part II: Single-Column Modeling of Arctic Clouds. Journals of the Atmospheric Sciences, 2005, 62, 1678-1693.	0.6	99
107	Mesoscale Modeling of Springtime Arctic Mixed-Phase Stratiform Clouds Using a New Two-Moment Bulk Microphysics Scheme. Journals of the Atmospheric Sciences, 2005, 62, 3683-3704.	0.6	158
108	A New Double-Moment Microphysics Parameterization for Application in Cloud and Climate Models. Part I: Description. Journals of the Atmospheric Sciences, 2005, 62, 1665-1677.	0.6	870

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109	Possible roles of ice nucleation mode and ice nuclei depletion in the extended lifetime of Arctic mixed-phase clouds. <i>Geophysical Research Letters</i> , 2005, 32, n/a-n/a.	1.5	85
110	A New Approach for Obtaining Advection Profiles: Application to the SHEBA Column. <i>Monthly Weather Review</i> , 2004, 132, 687-702.	0.5	10
111	Modeling clouds observed at SHEBA using a bulk microphysics parameterization implemented into a single-column model. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	46