William I. Gustafson Jr.

List of Publications by Year
in descending order

67 papers	4,074 citations	159525 30 h-index	133188 59 g-index
75 all docs	75 docs citations	75 times ranked	4167 citing authors

#	Article	IF	Citations
1	Evolution of ozone, particulates, and aerosol direct radiative forcing in the vicinity of Houston using a fully coupled meteorology-chemistry-aerosol model. Journal of Geophysical Research, 2006, 111, .	3.3	843
2	Coupling aerosol-cloud-radiative processes in the WRF-Chem model: Investigating the radiative impact of elevated point sources. Atmospheric Chemistry and Physics, 2009, 9, 945-964.	1.9	318
3	The spatial distribution of mineral dust and its shortwave radiative forcing over North Africa: modeling sensitivities to dust emissions and aerosol size treatments. Atmospheric Chemistry and Physics, 2010, 10, 8821-8838.	1.9	265
4	Modeling organic aerosols in a megacity: comparison of simple and complex representations of the volatility basis set approach. Atmospheric Chemistry and Physics, 2011, 11, 6639-6662.	1.9	230
5	A Preliminary Synthesis of Modeled Climate Change Impacts on U.S. Regional Ozone Concentrations. Bulletin of the American Meteorological Society, 2009, 90, 1843-1864.	1.7	175
6	Potential regional climate change and implications to U.S. air quality. Geophysical Research Letters, 2005, 32, .	1.5	152
7	Impact on modeled cloud characteristics due to simplified treatment of uniform cloud condensation nuclei during NEAQS 2004. Geophysical Research Letters, 2007, 34, .	1.5	145
8	Effects of sootâ€induced snow albedo change on snowpack and hydrological cycle in western United States based on Weather Research and Forecasting chemistry and regional climate simulations. Journal of Geophysical Research, 2009, 114, .	3.3	126
9	Assessing regional scale predictions of aerosols, marine stratocumulus, and their interactions during VOCALS-REx using WRF-Chem. Atmospheric Chemistry and Physics, 2011, 11, 11951-11975.	1.9	99
10	Overview of the 2010 Carbonaceous Aerosols and Radiative Effects Study (CARES). Atmospheric Chemistry and Physics, 2012, 12, 7647-7687.	1.9	94
11	Spatiotemporal Characteristics and Large-Scale Environments of Mesoscale Convective Systems East of the Rocky Mountains. Journal of Climate, 2019, 32, 7303-7328.	1.2	91
12	The multi-scale aerosol-climate model PNNL-MMF: model description and evaluation. Geoscientific Model Development, 2011, 4, 137-168.	1.3	88
13	The effects of aerosols on intense convective precipitation in the northeastern United States. Quarterly Journal of the Royal Meteorological Society, 2009, 135, 1367-1391.	1.0	83
14	Assessing the CAM5 physics suite in the WRF-Chem model: implementation, resolution sensitivity, and a first evaluation for a regional case study. Geoscientific Model Development, 2014, 7, 755-778.	1.3	74
15	Transport and mixing patterns over Central California during the carbonaceous aerosol and radiative effects study (CARES). Atmospheric Chemistry and Physics, 2012, 12, 1759-1783.	1.9	67
16	An investigation of the sub-grid variability of trace gases and aerosols for global climate modeling. Atmospheric Chemistry and Physics, 2010, 10, 6917-6946.	1.9	62
17	How does increasing horizontal resolution in a global climate model improve the simulation of aerosolâ€cloud interactions?. Geophysical Research Letters, 2015, 42, 5058-5065.	1.5	62
18	CAUSES: Attribution of Surface Radiation Biases in NWP and Climate Models near the U.S. Southern Great Plains. Journal of Geophysical Research D: Atmospheres, 2018, 123, 3612-3644.	1.2	62

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19	CAUSES: On the Role of Surface Energy Budget Errors to the Warm Surface Air Temperature Error Over the Central United States. Journal of Geophysical Research D: Atmospheres, 2018, 123, 2888-2909.	1.2	60
20	Introduction to CAUSES: Description of Weather and Climate Models and Their Nearâ€Surface Temperature Errors in 5Âday Hindcasts Near the Southern Great Plains. Journal of Geophysical Research D: Atmospheres, 2018, 123, 2655-2683.	1.2	53
21	Evaluation of a Modified Scheme for Shallow Convection: Implementation of CuP and Case Studies. Monthly Weather Review, 2013, 141, 134-147.	0.5	52
22	NO_{<i>x</i>} Emission Reduction and its Effects on Ozone during the 2008 Olympic Games. Environmental Science & Technology, 2011, 45, 6404-6410.	4.6	51
23	Roles of wind shear at different vertical levels: Cloud system organization and properties. Journal of Geophysical Research D: Atmospheres, 2015, 120, 6551-6574.	1.2	48
24	Impact of natural and anthropogenic aerosols on stratocumulus and precipitation in the Southeast Pacific: a regional modelling study using WRF-Chem. Atmospheric Chemistry and Physics, 2012, 12, 8777-8796.	1.9	43
25	Impacts of regional climate change on biogenic emissions and air quality. Journal of Geophysical Research, 2008, 113, .	3.3	42
26	The Large-Eddy Simulation (LES) Atmospheric Radiation Measurement (ARM) Symbiotic Simulation and Observation (LASSO) Activity for Continental Shallow Convection. Bulletin of the American Meteorological Society, 2020, 101, E462-E479.	1.7	41
27	Global and regional modeling of clouds and aerosols in the marine boundary layer during VOCALS: the VOCA intercomparison. Atmospheric Chemistry and Physics, 2015, 15, 153-172.	1.9	36
28	Shallow Cumulus in WRF Parameterizations Evaluated against LASSO Large-Eddy Simulations. Monthly Weather Review, 2018, 146, 4303-4322.	0.5	36
29	The Explicit-Cloud Parameterized-Pollutant hybrid approach for aerosolâ€“cloud interactions in multiscale modeling framework models: tracer transport results. Environmental Research Letters, 2008, 3, 025005.	2.2	34
30	Irrigation Impact on Water and Energy Cycle During Dry Years Over the United States Using Convectionâ€Permitting WRF and a Dynamical Recycling Model. Journal of Geophysical Research D: Atmospheres, 2019, 124, 11220-11241.	1.2	34
31	Regional Downscaling for Air Quality Assessment. Bulletin of the American Meteorological Society, 2007, 88, 1215-1228.	1.7	33
32	Downscaling aerosols and the impact of neglected subgrid processes on direct aerosol radiative forcing for a representative global climate model grid spacing. Journal of Geophysical Research, 2011, 116, .	3.3	33
33	Precipitation characteristics of CAM5 physics at mesoscale resolution during MC3E and the impact of convective timescale choice. Journal of Advances in Modeling Earth Systems, 2014, 6, 1271-1287.	1.3	32
34	The Aerosol Modeling Testbed: A Community Tool to Objectively Evaluate Aerosol Process Modules. Bulletin of the American Meteorological Society, 2011, 92, 343-360.	1.7	31
35	Modeling aerosols and their interactions with shallow cumuli during the 2007 CHAPS field study. Journal of Geophysical Research D: Atmospheres, 2013, 118, 1343-1360.	1.2	30
36	MM5 Modeling of the Maddenâ€“Julian Oscillation in the Indian and West Pacific Oceans: Model Description and Control Run Results. Journal of Climate, 2004, 17, 1320-1337.	1.2	24

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37	Neglecting irrigation contributes to the simulated summertime warm-and-dry bias in the central United States. Npj Climate and Atmospheric Science, 2020, 3, .	2.6	24
38	Coupling between the University of California, Davis, Advanced Canopyâ€"Atmosphereâ€"Soil Algorithm (ACASA) and MM5: Preliminary Results for July 1998 for Western North America. Journal of Applied Meteorology and Climatology, 2003, 42, 557-569.	1.7	23
39	Estimation of cloud fraction profile in shallow convection using a scanning cloud radar. Geophysical Research Letters, 2016, 43, 10,998.	1.5	22
40	Generalized approach for using unbiased symmetric metrics with negative values: normalized mean bias factor and normalized mean absolute error factor. Atmospheric Science Letters, 2012, 13, 262-267.	0.8	20
41	Untangling dynamical and microphysical controls for the structure of stratocumulus. Geophysical Research Letters, 2013, 40, 4432-4436.	1.5	15
42	Reconciling Differences Between Largeâ€Eddy Simulations and Doppler Lidar Observations of Continental Shallow Cumulus Cloudâ€Base Vertical Velocity. Geophysical Research Letters, 2019, 46, 11539-11547.	1.5	14
43	MM5 Modeling of the Maddenâ€"Julian Oscillation in the Indian and West Pacific Oceans: Implications of 30â€"70-Day Boundary Effects on MJO Development. Journal of Climate, 2004, 17, 1338-1351.	1.2	13
44	The Separate Physics and Dynamics Experiment (SPADE) framework for determining resolution awareness: A case study of microphysics. Journal of Geophysical Research D: Atmospheres, 2013, 118, 9258-9276.	1.2	13
45	Assessing the Resolution Adaptability of the Zhangâ€McFarlane Cumulus Parameterization With Spatial and Temporal Averaging. Journal of Advances in Modeling Earth Systems, 2017, 9, 2753-2770.	1.3	11
46	Can the Multiscale Modeling Framework (MMF) Simulate the MCSâ€Associated Precipitation Over the Central United States?. Journal of Advances in Modeling Earth Systems, 2019, 11, 4669-4686.	1.3	11
47	Spectral characteristics of background error covariance and multiscale data assimilation. International Journal for Numerical Methods in Fluids, 2016, 82, 1035-1048.	0.9	10
48	Impact of subgridâ€scale radiative heating variability on the stratocumulusâ€toâ€trade cumulus transition in climate models. Journal of Geophysical Research D: Atmospheres, 2014, 119, 4192-4203.	1.2	9
49	Evaluation of tropical channel refinement using <scp>MPASâ€A</scp> aquaplanet simulations. Journal of Advances in Modeling Earth Systems, 2015, 7, 1351-1367.	1.3	9
50	Long-Term Retrievals of Cloud Type and Fair-Weather Shallow Cumulus Events at the ARM SGP Site. Journal of Atmospheric and Oceanic Technology, 2019, 36, 2031-2043.	0.5	9
51	Evaluation of regional climate simulations over the Great Lakes region driven by three global data sets. Journal of Great Lakes Research, 2012, 38, 212-225.	0.8	8
52	Modifications to <scp>WRF</scp>'s dynamical core to improve the treatment of moisture for largeâ€eddy simulations. Journal of Advances in Modeling Earth Systems, 2015, 7, 1627-1642.	1.3	8
53	Resolutionâ€dependent behavior of subgridâ€scale vertical transport in the Z hangâ€M c F arlane convection parameterization. Journal of Advances in Modeling Earth Systems, 2015, 7, 537-550.	1.3	8
54	Impact of Lateral Flow on Surface Water and Energy Budgets Over the Southern Great Plainsâ€"A Modeling Study. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2020JD033659.	1.2	8

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55	The Maddenâ€"Julian oscillation wind-convection coupling and the role of moisture processes in the MM5 model. Climate Dynamics, 2010, 35, 435-447.	1.7	7
56	Implementing the data center energy productivity metric. ACM Journal on Emerging Technologies in Computing Systems, 2012, 8, 1-22.	1.8	7
57	Understanding irrigation impacts on low-level jets over the Great Plains. Climate Dynamics, 2020, 55, 925-943.	1.7	7
58	Effect of dust on rainfall over the Red Sea coast based on WRF-Chem model simulations. Atmospheric Chemistry and Physics, 2022, 22, 8659-8682.	1.9	7
59	Eddy fluxes and sensitivity of the water cycle to spatial resolution in idealized regional aquaplanet model simulations. Climate Dynamics, 2014, 42, 931-940.	1.7	6
60	On-Line Chemistry Within WRF: Description and Evaluation of a State-of-the-Art Multiscale Air Quality and Weather Prediction Model. , 2010, , 41-54.		6
61	Quantifying physical parameterization uncertainties associated with land-atmosphere interactions in the WRF model over Amazon. Atmospheric Research, 2021, 262, 105761.	1.8	5
62	Impact of resolution on simulation of closed mesoscale cellular convection identified by dynamically guided watershed segmentation. Journal of Geophysical Research D: Atmospheres, 2014, 119, 12,674.	1.2	4
63	Simulation of Continental Shallow Cumulus Populations Using an Observationâ€Constrained Cloudâ€System Resolving Model. Journal of Advances in Modeling Earth Systems, 2020, 12, e2020MS002091.	1.3	4
64	Largeâ€Scale Forcing Impact on the Development of Shallow Convective Clouds Revealed From LASSO Largeâ€Eddy Simulations. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2021JD035208.	1.2	3
65	Determining Spatial Scales of Soil Moistureâ€"Cloud Coupling Pathways Using Semiâ€Idealized Simulations. Journal of Geophysical Research D: Atmospheres, 2022, 127, e2021JD035282.	1.2	2
66	Outcomes from the DOE Workshop on Turbulent Flow Simulation at the Exascale. , 2016, , .		1
67	Implementing the Data Center Energy Productivity Metric in a High-Performance Computing Data Center. , 2013, , 93-116.		1