Rohit Mathur

List of Publications by Year
in descending order

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Version: 2024-02-01

85	3,767	117571	143943
papers	citations	34 h-index	57 g-index

134	134	134	3689
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Description and evaluation of the Community Multiscale Air Quality (CMAQ) modeling system version 5.1. Geoscientific Model Development, 2017, 10, 1703-1732.	1.3	187
2	CMAQ Model Performance Enhanced When In-Cloud Secondary Organic Aerosol is Included: Comparisons of Organic Carbon Predictions with Measurements. Environmental Science & Technology, 2008, 42, 8798-8802.	4.6	183
3	Observations and modeling of air quality trends over 1990â€“2010 across the Northern Hemisphere: China, the United States and Europe. Atmospheric Chemistry and Physics, 2015, 15, 2723-2747.	1.9	178
4	Historical gaseous and primary aerosol emissions in the United States from 1990 to 2010. Atmospheric Chemistry and Physics, 2013, 13, 7531-7549.	1.9	148
5	Linking the Eta Model with the Community Multiscale Air Quality (CMAQ) Modeling System to Build a National Air Quality Forecasting System. Weather and Forecasting, 2005, 20, 367-384.	0.5	143
6	Impacts of aerosol direct effects on tropospheric ozone through changes in atmospheric dynamics and photolysis rates. Atmospheric Chemistry and Physics, 2017, 17, 9869-9883.	1.9	129
7	An operational evaluation of the Etaâ€“CMAQ air quality forecast model. Atmospheric Environment, 2006, 40, 4894-4905.	1.9	114
8	The Community Multiscale Air Quality (CMAQ) model versions 5.3 and 5.3.1: system updates and evaluation. Geoscientific Model Development, 2021, 14, 2867-2897.	1.3	114
9	Evaluating the performance of regional-scale photochemical modeling systems: Part IIâ€”ozone predictions. Atmospheric Environment, 2001, 35, 4175-4188.	1.9	111
10	Importance of tropospheric ClNO₂ chemistry across the Northern Hemisphere. Geophysical Research Letters, 2014, 41, 4050-4058.	1.5	99
11	A detailed evaluation of the Eta-CMAQ forecast model performance for O3, its related precursors, and meteorological parameters during the 2004 ICARTT study. Journal of Geophysical Research, 2007, 112, .	3.3	95
12	Seasonal and Regional Variations of Primary and Secondary Organic Aerosols over the Continental United States:â€‰ Semi-Empirical Estimates and Model Evaluation. Environmental Science & Technology, 2007, 41, 4690-4697.	4.6	92
13	Extending the Community Multiscale Air Quality (CMAQ) modeling system to hemispheric scales: overview of process considerations and initial applications. Atmospheric Chemistry and Physics, 2017, 17, 12449-12474.	1.9	83
14	Historical Trends in PM _{2.5} -Related Premature Mortality during 1990â€“2010 across the Northern Hemisphere. Environmental Health Perspectives, 2017, 125, 400-408.	2.8	80
15	Anthropogenic enhancements to production of highly oxygenated molecules from autoxidation. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 6641-6646.	3.3	78
16	Long-term trends in total inorganic nitrogen and sulfur deposition in the US from 1990 to 2010. Atmospheric Chemistry and Physics, 2018, 18, 9091-9106.	1.9	74
17	The impact of chemical lateral boundary conditions on CMAQ predictions of tropospheric ozone over the continental United States. Environmental Fluid Mechanics, 2009, 9, 43-58.	0.7	72
18	Trace gas/aerosol boundary concentrations and their impacts on continental-scale AQMEII modeling domains. Atmospheric Environment, 2012, 53, 38-50.	1.9	72

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19	Impact of Enhanced Ozone Deposition and Halogen Chemistry on Tropospheric Ozone over the Northern Hemisphere. Environmental Science & Technology, 2015, 49, 9203-9211.	4.6	69
20	Assessment of the wintertime performance of developmental particulate matter forecasts with the Etaâ€Community Multiscale Air Quality modeling system. Journal of Geophysical Research, 2008, 113, .	3.3	66
21	Bias adjustment techniques for improving ozone air quality forecasts. Journal of Geophysical Research, 2008, 113, .	3.3	64
22	Aerosol indirect effect on the grid-scale clouds in the two-way coupled WRFâ€“CMAQ: model description, development, evaluation and regional analysis. Atmospheric Chemistry and Physics, 2014, 14, 11247-11285.	1.9	63
23	Attribution of the United States â€œwarming holeâ€• Aerosol indirect effect and precipitable water vapor. Scientific Reports, 2014, 4, 6929.	1.6	63
24	Annual application and evaluation of the online coupled WRFâ€“CMAQ system over North America under AQMEII phase 2. Atmospheric Environment, 2015, 115, 683-694.	1.9	61
25	Long-term trends in the ambient PM_{2.5}- and O₃-related mortality burdens in the United States under emission reductions from 1990 to 2010. Atmospheric Chemistry and Physics, 2018, 18, 15003-15016.	1.9	56
26	Coupling the Vertical Distribution of Ozone in the Atmospheric Boundary Layer. Environmental Science & Technology, 2000, 34, 2324-2329.	4.6	51
27	Real-time bias-adjusted O3 and PM2.5 air quality index forecasts and their performance evaluations over the continental United States. Atmospheric Environment, 2010, 44, 2203-2212.	1.9	51
28	Impacts of different characterizations of large-scale background on simulated regional-scale ozone over the continental United States. Atmospheric Chemistry and Physics, 2018, 18, 3839-3864.	1.9	45
29	A comparison of atmospheric composition using the Carbon Bond and Regional Atmospheric Chemistry Mechanisms. Atmospheric Chemistry and Physics, 2013, 13, 9695-9712.	1.9	44
30	Assessment of the effect of air pollution controls on trends in shortwave radiation over the United States from 1995 through 2010 from multiple observation networks. Atmospheric Chemistry and Physics, 2014, 14, 1701-1715.	1.9	43
31	Dynamic evaluation of regional air quality modelâ€™s response to emission reductions in the presence of uncertain emission inventories. Atmospheric Environment, 2011, 45, 4091-4098.	1.9	42
32	Dynamic evaluation of two decades of WRF-CMAQ ozone simulations over the contiguous United States. Atmospheric Environment, 2017, 164, 102-116.	1.9	42
33	Estimating the impact of the 2004 Alaskan forest fires on episodic particulate matter pollution over the eastern United States through assimilation of satelliteâ€derived aerosol optical depths in a regional air quality model. Journal of Geophysical Research, 2008, 113, .	3.3	41
34	Assessment of long-term WRFâ€“CMAQ simulations for understanding direct aerosol effects on radiation "brightening" in the United States. Atmospheric Chemistry and Physics, 2015, 15, 12193-12209.	1.9	39
35	Can a coupled meteorologyâ€“chemistry model reproduce the historical trend in aerosol direct radiative effects over the Northern Hemisphere?. Atmospheric Chemistry and Physics, 2015, 15, 9997-10018.	1.9	37
36	Southeast Atmosphere Studies: learning from model-observation syntheses. Atmospheric Chemistry and Physics, 2018, 18, 2615-2651.	1.9	36

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37	Impact of inherent meteorology uncertainty on air quality model predictions. Journal of Geophysical Research D: Atmospheres, 2015, 120, 12,259.	1.2	35
38	Assessment of the effects of horizontal grid resolution on long-term air quality trends using coupled WRF-CMAQ simulations. Atmospheric Environment, 2016, 132, 207-216.	1.9	35
39	Air pollution and climate response to aerosol direct radiative effects: A modeling study of decadal trends across the northern hemisphere. Journal of Geophysical Research D: Atmospheres, 2015, 120, 12,221.	1.2	33
40	Seasonal and annual modeling of reduced nitrogen compounds over the eastern United States: Emissions, ambient levels, and deposition amounts. Journal of Geophysical Research, 2003, 108, .	3.3	31
41	Multiscale Air Quality Simulation Platform (MAQSIP): Initial applications and performance for tropospheric ozone and particulate matter. Journal of Geophysical Research, 2005, 110, .	3.3	31
42	Application of the Kolmogorovâ€“Zurbenko filter and the decoupled direct 3D method for the dynamic evaluation of a regional air quality model. Atmospheric Environment, 2013, 80, 58-69.	1.9	31
43	Unexpected Benefits of Reducing Aerosol Cooling Effects. Environmental Science & Technology, 2016, 50, 7527-7534.	4.6	30
44	Performance and Diagnostic Evaluation of Ozone Predictions by the Eta-Community Multiscale Air Quality Forecast System during the 2002 New England Air Quality Study. Journal of the Air and Waste Management Association, 2006, 56, 1459-1471.	0.9	29
45	Influence of bromine and iodine chemistry on annual, seasonal, diurnal, and background ozone: CMAQ simulations over the Northern Hemisphere. Atmospheric Environment, 2019, 213, 395-404.	1.9	29
46	Analysis of regional meteorology and surface ozone during the TexAQS II field program and an evaluation of the NMMâ€CMAQ and WRFâ€Chem air quality models. Journal of Geophysical Research, 2009, 114, .	3.3	28
47	High reduction of ozone and particulate matter during the 2016 G-20 summit in Hangzhou by forced emission controls of industry and traffic. Environmental Chemistry Letters, 2017, 15, 709-715.	8.3	27
48	Diagnostic analysis of ozone concentrations simulated by two regional-scale air quality models. Atmospheric Environment, 2011, 45, 5957-5969.	1.9	23
49	Representing the effects of stratosphereâ€“troposphere exchange on 3-D O₃ distributions in chemistry transport models using a potential vorticity-based parameterization. Atmospheric Chemistry and Physics, 2016, 16, 10865-10877.	1.9	22
50	Significant ground-level ozone attributed to lightning-induced nitrogen oxides during summertime over the Mountain West States. Npj Climate and Atmospheric Science, 2020, 3, 6.	2.6	22
51	The Impact of Iodide-Mediated Ozone Deposition and Halogen Chemistry on Surface Ozone Concentrations Across the Continental United States. Environmental Science & Technology, 2017, 51, 1458-1466.	4.6	20
52	Simulating lightning NO production in CMAQv5.2: evolution of scientific updates. Geoscientific Model Development, 2019, 12, 3071-3083.	1.3	20
53	The Detailed Emissions Scaling, Isolation, and Diagnostic (DESID) module in the Community Multiscale Air Quality (CMAQ) modeling system version 5.3.2. Geoscientific Model Development, 2021, 14, 3407-3420.	1.3	20
54	Assessment of the aerosol optics component of the coupled WRFâ€“CMAQ model using CARES field campaign data and a single column model. Atmospheric Environment, 2015, 115, 670-682.	1.9	19

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55	Simulating lightning NO production in CMAQv5.2: performance evaluations. Geoscientific Model Development, 2019, 12, 4409-4424.	1.3	18
56	Methods for reducing biases and errors in regional photochemical model outputs for use in emission reduction and exposure assessments. Atmospheric Environment, 2015, 112, 178-188.	1.9	16
57	Sub-grid representation of emission source clusters in regional air quality modeling. Atmospheric Environment Part A General Topics, 1992, 26, 3219-3238.	1.3	15
58	A Call for an Aloft Air Quality Monitoring Network: Need, Feasibility, and Potential Value. Environmental Science & Technology, 2018, 52, 10903-10908.	4.6	15
59	Mitigation of severe urban haze pollution by a precision air pollution control approach. Scientific Reports, 2018, 8, 8151.	1.6	15
60	Impact of Reductions in Emissions from Major Source Sectors on Fine Particulate Matterâ€“Related Cardiovascular Mortality. Environmental Health Perspectives, 2020, 128, 17005.	2.8	15
61	Modeling stratospheric intrusion and trans-Pacific transport on tropospheric ozone using hemispheric CMAQ during April 2010 â€“ Part 1: Model evaluation and air mass characterization for stratosphereâ€“troposphere transport. Atmospheric Chemistry and Physics, 2020, 20, 3373-3396.	1.9	14
62	A reduced form model for ozone based on two decades of CMAQ simulations for the continental United States. Atmospheric Pollution Research, 2017, 8, 275-284.	1.8	12
63	Unexpected air quality impacts from implementation of green infrastructure in urban environments: A Kansas City case study. Science of the Total Environment, 2020, 744, 140960.	3.9	12
64	On the limit to the accuracy of regional-scale air quality models. Atmospheric Chemistry and Physics, 2020, 20, 1627-1639.	1.9	12
65	Modeling stratospheric intrusion and trans-Pacific transport on tropospheric ozone using hemispheric CMAQ during AprilÂ2010 â€“ Part 2: Examination of emission impacts based on the higher-order decoupled direct method. Atmospheric Chemistry and Physics, 2020, 20, 3397-3413.	1.9	12
66	Impact of dimethylsulfide chemistry on air quality over the Northern Hemisphere. Atmospheric Environment, 2021, 244, 117961.	1.9	11
67	Two-scale multi-model ensemble: is a hybrid ensemble of opportunity telling us more?. Atmospheric Chemistry and Physics, 2018, 18, 8727-8744.	1.9	10
68	Quantification of the enhancement of PM2.5 concentration by the downward transport of ozone from the stratosphere. Chemosphere, 2020, 255, 126907.	4.2	10
69	A new method for assessing the efficacy of emission control strategies. Atmospheric Environment, 2019, 199, 233-243.	1.9	9
70	Representing the Effects of Long-Range Transport and Lateral Boundary Conditions in Regional Air Pollution Models. NATO Science for Peace and Security Series C: Environmental Security, 2014, , 303-308.	0.1	9
71	Evaluating trends and seasonality in modeled PM_{2.5} concentrations using empirical mode decomposition. Atmospheric Chemistry and Physics, 2020, 20, 13801-13815.	1.9	9
72	Extending the Applicability of the Community Multiscale Air Quality Model to Hemispheric Scales: Motivation, Challenges, and Progress. NATO Science for Peace and Security Series C: Environmental Security, 2011, , 175-179.	0.1	8

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73	Two-Way Coupled Meteorology and Air Quality Modeling. NATO Security Through Science Series C: Environmental Security, 2008, , 235-242.	0.1	7
74	Attributing differences in the fate of lateral boundary ozone in AQMEII3 models to physical process representations. Atmospheric Chemistry and Physics, 2018, 18, 17157-17175.	1.9	5
75	Estimating US Background Ozone Using Data Fusion. Environmental Science & Technology, 2021, 55, 4504-4512.	4.6	5
76	Toward a US National Air Quality Forecast Capability: Current and Planned Capabilities. NATO Security Through Science Series C: Environmental Security, 2008, , 226-234.	0.1	5
77	Investigation of Trends in Aerosol Direct Radiative Effects over North America Using a Coupled Meteorology-Chemistry Model. Springer Proceedings in Complexity, 2014, , 67-72.	0.2	5
78	A comparative study of two-way and offline coupled WRF v3.4 and CMAQ v5.0.2 over the contiguous US: performance evaluation and impacts of chemistryâ€“meteorology feedbacks on air quality. Geoscientific Model Development, 2021, 14, 7189-7221.	1.3	5
79	The pathway of impacts of aerosol direct effects on secondary inorganic aerosol formation. Atmospheric Chemistry and Physics, 2022, 22, 5147-5156.	1.9	4
80	Assessing the manageable portion of ground-level ozone in the contiguous United States. Journal of the Air and Waste Management Association, 2020, 70, 1136-1147.	0.9	3
81	Incorporation of volcanic SO₂ emissions in the Hemispheric CMAQ (H-CMAQ) version 5.2 modeling system and assessing their impacts on sulfate aerosol over the Northern Hemisphere. Geoscientific Model Development, 2021, 14, 5751-5768.	1.3	3
82	Long-Term Trends in Sulfur and Reactive Nitrogen Deposition Across the Northern Hemisphere and United States. Springer Proceedings in Complexity, 2020, , 41-45.	0.2	1
83	Evaluating trends and seasonality in modeled PM concentrations using empirical mode decomposition. Atmospheric Chemistry and Physics, 2020, 20, 13801-13815.	1.9	1
84	The New Generation of Air Quality Modeling Systems. Em: Air and Waste Management Association's Magazine for Environmental Managers, 2018, 1, 1-6.	0.2	0
85	Need and Potential Benefits of Improving Aloft Air Pollution Characterization: A Modeling Perspective. Springer Proceedings in Complexity, 2021, , 139-144.	0.2	0