Rahul A Zaveri

List of Publications by Year
in descending order

99 papers	10,490 citations	41344 49 h-index	38395 95 g-index
149 all docs	149 docs citations	149 times ranked	6654 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	Model for Simulating Aerosol Interactions and Chemistry (MOSAIC). Journal of Geophysical Research, 2008, 113, .	3.3	824
3	A new lumped structure photochemical mechanism for large-scale applications. Journal of Geophysical Research, 1999, 104, 30387-30415.	3.3	690
4	Radiative Absorption Enhancements Due to the Mixing State of Atmospheric Black Carbon. Science, 2012, 337, 1078-1081.	12.6	618
5	Recent advances in understanding secondary organic aerosol: Implications for global climate forcing. Reviews of Geophysics, 2017, 55, 509-559.	23.0	548
6	The AeroCom evaluation and intercomparison of organic aerosol in global models. Atmospheric Chemistry and Physics, 2014, 14, 10845-10895.	4.9	363
7	The acidity of atmospheric particles and clouds. Atmospheric Chemistry and Physics, 2020, 20, 4809-4888.	4.9	327
8	Nitrate radicals and biogenic volatile organic compounds: oxidation, mechanisms, and organic aerosol. Atmospheric Chemistry and Physics, 2017, 17, 2103-2162.	4.9	307
9	MIRAGE: Model description and evaluation of aerosols and trace gases. Journal of Geophysical Research, 2004, 109, .	3.3	251
10	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.	4.9	230
11	Tropospheric chemistry of internally mixed sea salt and organic particles: Surprising reactivity of NaCl with weak organic acids. Journal of Geophysical Research, 2012, 117, .	3.3	224
12	Simulating the evolution of soot mixing state with a particleâ€resolved aerosol model. Journal of Geophysical Research, 2009, 114, .	3.3	162
13	Hydrolysis of Organonitrate Functional Groups in Aerosol Particles. Aerosol Science and Technology, 2012, 46, 1359-1369.	3.1	153
14	Characterization of submicron particles influenced by mixed biogenic and anthropogenic emissions using high-resolution aerosol mass spectrometry: results from CARES. Atmospheric Chemistry and Physics, 2012, 12, 8131-8156.	4.9	146
15	Enhanced SOA formation from mixed anthropogenic and biogenic emissions during the CARES campaign. Atmospheric Chemistry and Physics, 2013, 13, 2091-2113.	4.9	146
16	Black carbon over Mexico: the effect of atmospheric transport on mixing state, mass absorption cross-section, and BC/CO ratios. Atmospheric Chemistry and Physics, 2010, 10, 219-237.	4.9	140
17	Modeling kinetic partitioning of secondary organic aerosol and size distribution dynamics: representing effects of volatility, phase state, and particle-phase reaction. Atmospheric Chemistry and Physics, 2014, 14, 5153-5181.	4.9	137
18	Urban pollution greatly enhances formation of natural aerosols over the Amazon rainforest. Nature Communications, 2019, 10, 1046.	12.8	131

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19	Uncertainty in modeling dust mass balance and radiative forcing from size parameterization. Atmospheric Chemistry and Physics, 2013, 13, 10733-10753.	4.9	128
20	Parameterization of optical properties for hydrated internally mixed aerosol. Journal of Geophysical Research, 2007, 112, .	3.3	124
21	Estimating black carbon aging time-scales with a particle-resolved aerosol model. Journal of Aerosol Science, 2010, 41, 143-158.	3.8	112
22	Semivolatile POA and parameterized total combustion SOA in CMAQv5.2: impacts on source strength and partitioning. Atmospheric Chemistry and Physics, 2017, 17, 11107-11133.	4.9	109
23	A computationally efficient Multicomponent Equilibrium Solver for Aerosols (MESA). Journal of Geophysical Research, 2005, 110, .	3.3	107
24	Particleâ€resolved simulation of aerosol size, composition, mixing state, and the associated optical and cloud condensation nuclei activation properties in an evolving urban plume. Journal of Geophysical Research, 2010, 115, .	3.3	107
25	Development and validation of a black carbon mixing state resolved threeâ€dimensional model: Aging processes and radiative impact. Journal of Geophysical Research D: Atmospheres, 2013, 118, 2304-2326.	3.3	106
26	Effect of hydrophobic primary organic aerosols on secondary organic aerosol formation from ozonolysis of Î±â€pinene. Geophysical Research Letters, 2007, 34, .	4.0	104
27	Morphology of mixed primary and secondary organic particles and the adsorption of spectator organic gases during aerosol formation. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 6658-6663.	7.1	102
28	Efficient Isoprene Secondary Organic Aerosol Formation from a Non-IEPOX Pathway. Environmental Science & Technology, 2016, 50, 9872-9880.	10.0	100
29	A new method for multicomponent activity coefficients of electrolytes in aqueous atmospheric aerosols. Journal of Geophysical Research, 2005, 110, .	3.3	99
30	Sub-micrometre particulate matter is primarily in liquid form over Amazon rainforest. Nature Geoscience, 2016, 9, 34-37.	12.9	99
31	Relative humidity-dependent viscosity of secondary organic material from toluene photo-oxidation and possible implications for organic particulate matter over megacities. Atmospheric Chemistry and Physics, 2016, 16, 8817-8830.	4.9	95
32	Overview of the 2010 Carbonaceous Aerosols and Radiative Effects Study (CARES). Atmospheric Chemistry and Physics, 2012, 12, 7647-7687.	4.9	94
33	Lability of secondary organic particulate matter. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 12643-12648.	7.1	93
34	Modeling the Multiday Evolution and Aging of Secondary Organic Aerosol During MILAGRO 2006. Environmental Science & Technology, 2011, 45, 3496-3503.	10.0	90
35	Chemical speciation of sulfur in marine cloud droplets and particles: Analysis of individual particles from the marine boundary layer over the California current. Journal of Geophysical Research, 2008, 113, .	3.3	89
36	Aircraft observations of aerosol composition and ageing in New England and Mid-Atlantic States during the summer 2002 New England Air Quality Study field campaign. Journal of Geophysical Research, 2007, 112, .	3.3	87

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37	Spatial and temporal variations of aerosols around Beijing in summer 2006: Model evaluation and source apportionment. Journal of Geophysical Research, 2009, 114, .	3.3	86
38	Growth Kinetics and Size Distribution Dynamics of Viscous Secondary Organic Aerosol. Environmental Science & Technology, 2018, 52, 1191-1199.	10.0	85
39	Ozone production efficiency and NOxdepletion in an urban plume: Interpretation of field observations and implications for evaluating O3-NOx-VOC sensitivity. Journal of Geophysical Research, 2003, 108, .	3.3	81
40	Photoacoustic optical properties at UV, VIS, and near IR wavelengths for laboratory generated and winter time ambient urban aerosols. Atmospheric Chemistry and Physics, 2012, 12, 2587-2601.	4.9	74
41	Understanding the optical properties of ambient sub- and supermicron particulate matter: results from the CARESÂ2010 field study in northern California. Atmospheric Chemistry and Physics, 2016, 16, 6511-6535.	4.9	70
42	Molecular composition and volatility of isoprene photochemicalÂoxidationÂsecondaryÂorganic aerosolÂunderÂlow-ÂandÂhigh-NO_{<i>x</i>}ÂconditionsÂ. Atmospheric Chemistry and Physics, 2017, 17, 159-174.	4.9	70
43	Nighttime chemical evolution of aerosol and trace gases in a power plant plume: Implications for secondary organic nitrate and organosulfate aerosol formation, NO₃ radical chemistry, and N₂O₅ heterogeneous hydrolysis. Journal of Geophysical Research, 2010, 115, .	3.3	67
44	Transport and mixing patterns over Central California during the carbonaceous aerosol and radiative effects study (CARES). Atmospheric Chemistry and Physics, 2012, 12, 1759-1783.	4.9	67
45	Implications of low volatility SOA and gasâ€phase fragmentation reactions on SOA loadings and their spatial and temporal evolution in the atmosphere. Journal of Geophysical Research D: Atmospheres, 2013, 118, 3328-3342.	3.3	66
46	Explicit modeling of organic chemistry and secondary organic aerosol partitioning for Mexico City and its outflow plume. Atmospheric Chemistry and Physics, 2011, 11, 13219-13241.	4.9	65
47	Impact of new particle formation on the concentrations of aerosols and cloud condensation nuclei around Beijing. Journal of Geophysical Research, 2011, 116, .	3.3	62
48	Modeling regional aerosol and aerosol precursor variability over California and its sensitivity to emissions and long-range transport during the 2010 CalNex and CARES campaigns. Atmospheric Chemistry and Physics, 2014, 14, 10013-10060.	4.9	62
49	The time evolution of aerosol size distribution over the Mexico City plateau. Atmospheric Chemistry and Physics, 2009, 9, 4261-4278.	4.9	60
50	Implementation and evaluation of online gas-phase chemistry within a regional climate model (RegCM-CHEM4). Geoscientific Model Development, 2012, 5, 741-760.	3.6	57
51	The mixing state of carbonaceous aerosol particles in northern and southern California measured during CARES and CalNex 2010. Atmospheric Chemistry and Physics, 2012, 12, 10989-11002.	4.9	57
52	A New Real-Time Method for Determining Particlesâ€™ Sphericity and Density: Application to Secondary Organic Aerosol Formed by Ozonolysis of Î±-Pinene. Environmental Science & Technology, 2008, 42, 8033-8038.	10.0	56
53	Spectro-microscopic measurements of carbonaceous aerosol aging in Central California. Atmospheric Chemistry and Physics, 2013, 13, 10445-10459.	4.9	56
54	Light absorption by secondary organic aerosol from Î±â€pinene: Effects of oxidants, seed aerosol acidity, and relative humidity. Journal of Geophysical Research D: Atmospheres, 2013, 118, 11,741.	3.3	54

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55	Anthropogenic influences on the physical state of submicron particulate matter over a tropical forest. Atmospheric Chemistry and Physics, 2017, 17, 1759-1773.	4.9	52
56	Gaseous chemistry and aerosol mechanism developments for version 3.5.1 of the online regional model, WRF-Chem. Geoscientific Model Development, 2014, 7, 2557-2579.	3.6	51
57	A model investigation of summertime diurnal ozone behavior in rural mountainous locations. Atmospheric Environment, 1995, 29, 1043-1065.	4.1	49
58	Isothermal Evaporation of Î±-Pinene Ozonolysis SOA: Volatility, Phase State, and Oligomeric Composition. ACS Earth and Space Chemistry, 2018, 2, 1058-1067.	2.7	49
59	High concentration of ultrafine particles in the Amazon free troposphere produced by organic new particle formation. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 25344-25351.	7.1	49
60	Ozone loss in soot aerosols. Journal of Geophysical Research, 2000, 105, 9767-9771.	3.3	47
61	Ice nucleation activity of diesel soot particles at cirrus relevant temperature conditions: Effects of hydration, secondary organics coating, soot morphology, and coagulation. Geophysical Research Letters, 2016, 43, 3580-3588.	4.0	47
62	Extensive Soot Compaction by Cloud Processing from Laboratory and Field Observations. Scientific Reports, 2019, 9, 11824.	3.3	47
63	â€œDepth-Profilingâ€•and Quantitative Characterization of the Size, Composition, Shape, Density, and Morphology of Fine Particles with SPLAT, a Single-Particle Mass Spectrometer. Journal of Physical Chemistry A, 2008, 112, 669-677.	2.5	43
64	WRF-Chem model predictions of the regional impacts of N₂O₅ heterogeneous processes on night-time chemistry over north-western Europe. Atmospheric Chemistry and Physics, 2015, 15, 1385-1409.	4.9	38
65	Particle-Phase Diffusion Modulates Partitioning of Semivolatile Organic Compounds to Aged Secondary Organic Aerosol. Environmental Science & Technology, 2020, 54, 2595-2605.	10.0	37
66	Photolysis Controls Atmospheric Budgets of Biogenic Secondary Organic Aerosol. Environmental Science & Technology, 2020, 54, 3861-3870.	10.0	36
67	Morphology of diesel soot residuals from supercooled water droplets and ice crystals: implications for optical properties. Environmental Research Letters, 2015, 10, 114010.	5.2	35
68	Cloud droplet activation of secondary organic aerosol is mainly controlled by molecular weight, not water solubility. Atmospheric Chemistry and Physics, 2019, 19, 941-954.	4.9	35
69	Exploring dimethyl sulfide (DMS) oxidation and implications for global aerosol radiative forcing. Atmospheric Chemistry and Physics, 2022, 22, 1549-1573.	4.9	33
70	Effect of regional-scale transport on oxidants in the vicinity of Philadelphia during the 1999 NE-OPS field campaign. Journal of Geophysical Research, 2002, 107, ACH 13-1.	3.3	31
71	The Aerosol Modeling Testbed: A Community Tool to Objectively Evaluate Aerosol Process Modules. Bulletin of the American Meteorological Society, 2011, 92, 343-360.	3.3	31
72	The MESSy aerosol submodel MADE3 (v2.0b): description and a box model test. Geoscientific Model Development, 2014, 7, 1137-1157.	3.6	31

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73	Long-range pollution transport during the MILAGRO-2006 campaign: a case study of a major Mexico City outflow event using free-floating altitude-controlled balloons. Atmospheric Chemistry and Physics, 2010, 10, 7137-7159.	4.9	25
74	Modeling particle nucleation and growth over northern California during the 2010 CARES campaign. Atmospheric Chemistry and Physics, 2015, 15, 12283-12313.	4.9	25
75	Particle Size Distribution Dynamics Can Help Constrain the Phase State of Secondary Organic Aerosol. Environmental Science & Technology, 2021, 55, 1466-1476.	10.0	22
76	Effect of Hydrophilic Organic Seed Aerosols on Secondary Organic Aerosol Formation from Ozonolysis of Î±-Pinene. Environmental Science & Technology, 2011, 45, 7323-7329.	10.0	21
77	A threeâ€dimensional sectional representation of aerosol mixing state for simulating optical properties and cloud condensation nuclei. Journal of Geophysical Research D: Atmospheres, 2016, 121, 5912-5929.	3.3	21
78	The influence of fog and airmass history on aerosol optical, physical and chemical properties at Pt. Reyes National Seashore. Atmospheric Environment, 2011, 45, 2559-2568.	4.1	19
79	Aircraft measurements of aerosol and trace gas chemistry in the eastern North Atlantic. Atmospheric Chemistry and Physics, 2021, 21, 7983-8002.	4.9	19
80	Rapid growth of anthropogenic organic nanoparticles greatly alters cloud life cycle in the Amazon rainforest. Science Advances, 2022, 8, eabj0329.	10.3	19
81	Photochemical Aging Alters Secondary Organic Aerosol Partitioning Behavior. ACS Earth and Space Chemistry, 2019, 3, 2704-2716.	2.7	18
82	Development and Evaluation of Chemistryâ€Aerosolâ€Climate Model CAM5â€Chemâ€MAM7â€MOSAIC: Global Atmospheric Distribution and Radiative Effects of Nitrate Aerosol. Journal of Advances in Modeling Earth Systems, 2021, 13, e2020MS002346.	3.8	17
83	Future changes in isoprene-epoxydiol-derived secondary organic aerosol (IEPOX SOA) under the Shared Socioeconomic Pathways: the importance of physicochemical dependency. Atmospheric Chemistry and Physics, 2021, 21, 3395-3425.	4.9	16
84	Aircraft observations of aerosols, O3 and NOy in a nighttime urban plume. Atmospheric Environment, 2001, 35, 2395-2404.	4.1	15
85	Model representations of aerosol layers transported from North America over the Atlantic Ocean during the Twoâ€Column Aerosol Project. Journal of Geophysical Research D: Atmospheres, 2016, 121, 9814-9848.	3.3	15
86	Physical Properties of Aerosol Internally Mixed With Soot Particles in a Biogenically Dominated Environment in California. Geophysical Research Letters, 2018, 45, 11,473.	4.0	15
87	Humidity Dependence of the Condensational Growth of Î±-Pinene Secondary Organic Aerosol Particles. Environmental Science & Technology, 2021, 55, 14360-14369.	10.0	15
88	Overnight atmospheric transport and chemical processing of photochemically aged Houston urban and petrochemical industrial plume. Journal of Geophysical Research, 2010, 115, .	3.3	14
89	Efficient Nighttime Biogenic SOA Formation in a Polluted Residual Layer. Journal of Geophysical Research D: Atmospheres, 2020, 125, e2019JD031583.	3.3	14
90	Radiative Forcing of Nitrate Aerosols From 1975 to 2010 as Simulated by MOSAIC Module in CESM2â€MAM4. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2021JD034809.	3.3	14

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91	Climatological simulations of ozone and atmospheric aerosols in the Greater Cairo region. Climate Research, 2014, 59, 207-228.	1.1	14
92	Impact of Urban Pollution on Organic-Mediated New-Particle Formation and Particle Number Concentration in the Amazon Rainforest. Environmental Science & Technology, 2021, 55, 4357-4367.	10.0	12
93	Tight Coupling of Surface and In-Plant Biochemistry and Convection Governs Key Fine Particulate Components over the Amazon Rainforest. ACS Earth and Space Chemistry, 2022, 6, 380-390.	2.7	11
94	Evolution of Multispectral Aerosol Absorption Properties in a Biogenically-Influenced Urban Environment during the CARES Campaign. Atmosphere, 2017, 8, 217.	2.3	8
95	Analytical solution for transient partitioning and reaction of a condensing vapor species in a droplet. Atmospheric Environment, 2014, 89, 651-654.	4.1	7
96	Modeling the Size Distribution and Chemical Composition of Secondary Organic Aerosols during the Reactive Uptake of Isoprene-Derived Epoxydiols under Low-Humidity Condition. ACS Earth and Space Chemistry, 2021, 5, 3247-3257.	2.7	7
97	An efficient approach for treating composition-dependent diffusion within organic particles. Atmospheric Chemistry and Physics, 2017, 17, 10477-10494.	4.9	6
98	On the parallelization of a global climate-chemistry modeling system. Atmospheric Environment, 1999, 33, 675-681.	4.1	5
99	A computationally efficient model to represent the chemistry, thermodynamics, and microphysics of secondary organic aerosols (simpleSOM): model development and application to Î±-pinene SOA. Environmental Science Atmospheres, 2021, 1, 372-394.	2.4	3