Rolf Sander

List of Publications by Year
in descending order

110 papers	12,582 citations	43973 48 h-index	31759 101 g-index
188 all docs	188 docs citations	188 times ranked	9544 citing authors

#	Article	IF	Citations
1	Compilation of Henry's law constants (version 4.0) for water as solvent. Atmospheric Chemistry and Physics, 2015, 15, 4399-4981.	1.9	2,039
2	A mechanism for halogen release from sea-salt aerosol in the remote marine boundary layer. Nature, 1996, 383, 327-330.	13.7	706
3	Halogens and their role in polar boundary-layer ozone depletion. Atmospheric Chemistry and Physics, 2007, 7, 4375-4418.	1.9	593
4	An overview of snow photochemistry: evidence, mechanisms and impacts. Atmospheric Chemistry and Physics, 2007, 7, 4329-4373.	1.9	554
5	The atmospheric chemistry general circulation model ECHAM5/MESSy1: consistent simulation of ozone from the surface to the mesosphere. Atmospheric Chemistry and Physics, 2006, 6, 5067-5104.	1.9	528
6	Development cycle 2 of the Modular Earth Submodel System (MESSy2). Geoscientific Model Development, 2010, 3, 717-752.	1.3	398
7	Title is missing!. Journal of Atmospheric Chemistry, 1999, 32, 375-395.	1.4	376
8	Model study indicating halogen activation and ozone destruction in polluted air masses transported to the sea. Journal of Geophysical Research, 1996, 101, 9121-9138.	3.3	348
9	The MPI-Mainz UV/VIS Spectral Atlas of Gaseous Molecules of Atmospheric Interest. Earth System Science Data, 2013, 5, 365-373.	3.7	323
10	Technical Note: The Modular Earth Submodel System (MESSy) - a new approach towards Earth System Modeling. Atmospheric Chemistry and Physics, 2005, 5, 433-444.	1.9	282
11	Technical note: The new comprehensive atmospheric chemistry module MECCA. Atmospheric Chemistry and Physics, 2005, 5, 445-450.	1.9	273
12	Technical note: A new comprehensive SCAVenging submodel for global atmospheric chemistry modelling. Atmospheric Chemistry and Physics, 2006, 6, 565-574.	1.9	265
13	Chemical and physical characteristics of nascent aerosols produced by bursting bubbles at a model airâ€sea interface. Journal of Geophysical Research, 2007, 112, .	3.3	259
14	Technical note: Simulating chemical systems in Fortran90 and Matlab with the Kinetic PreProcessor KPP-2.1. Atmospheric Chemistry and Physics, 2006, 6, 187-195.	1.9	249
15	Aerosol pH in the marine boundary layer. Journal of Aerosol Science, 1998, 29, 339-356.	1.8	246
16	Inorganic bromine in the marine boundary layer: a critical review. Atmospheric Chemistry and Physics, 2003, 3, 1301-1336.	1.9	243
17	Earth System Chemistry integrated Modelling (ESCiMo) with the Modular Earth Submodel System (MESSy) versionÂ2.51. Geoscientific Model Development, 2016, 9, 1153-1200.	1.3	208
18	Technical note: Implementation of prescribed (OFFLEM), calculated (ONLEM), and pseudo-emissions (TNUDGE) of chemical species in the Modular Earth Submodel System (MESSy). Atmospheric Chemistry and Physics, 2006, 6, 3603-3609.	1.9	198

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19	The atmospheric chemistry box model CAABA/MECCA-3.0. Geoscientific Model Development, 2011, 4, 373-380.	1.3	161
20	Modeling halogen chemistry in the marine boundary layer 1. Cloud-free MBL. Journal of Geophysical Research, 2002, 107, ACH 9-1-ACH 9-16.	3.3	151
21	Halogen cycling and aerosol pH in the Hawaiian marine boundary layer. Atmospheric Chemistry and Physics, 2004, 4, 147-168.	1.9	136
22	The vertical distribution of BrO and aerosols in the Arctic: Measurements by active and passive differential optical absorption spectroscopy. Journal of Geophysical Research, 2011, 116, .	3.3	123
23	Mainz Isoprene Mechanism 2 (MIM2): an isoprene oxidation mechanism for regional and global atmospheric modelling. Atmospheric Chemistry and Physics, 2009, 9, 2751-2777.	1.9	112
24	Hydroxyl radicals in the tropical troposphere over the Suriname rainforest: comparison of measurements with the box model MECCA. Atmospheric Chemistry and Physics, 2010, 10, 9705-9728.	1.9	110
25	HOCl and Cl₂ observations in marine air. Atmospheric Chemistry and Physics, 2011, 11, 7617-7628.	1.9	109
26	Observation and modelling of HO_x radicals in a boreal forest. Atmospheric Chemistry and Physics, 2014, 14, 8723-8747.	1.9	109
27	Title is missing!. , 1999, 20, 1-31.		108
28	A comparison of Arctic BrO measurements by chemical ionization mass spectrometry and long path-differential optical absorption spectroscopy. Journal of Geophysical Research, 2011, 116, .	3.3	105
29	Global cloud and precipitation chemistry and wet deposition: tropospheric model simulations with ECHAM5/MESSy1. Atmospheric Chemistry and Physics, 2007, 7, 2733-2757.	1.9	104
30	Modelling the chemistry of ozone, halogen compounds, and hydrocarbons in the arctic troposphere during spring. Tellus, Series B: Chemical and Physical Meteorology, 1997, 49, 522-532.	0.8	103
31	Observations and model calculations of trace gas scavenging in a dense Saharan dust plume during MINATROC. Atmospheric Chemistry and Physics, 2005, 5, 1787-1803.	1.9	103
32	Simulating organic species with the global atmospheric chemistry general circulation model ECHAM5/MESSy1: a comparison of model results with observations. Atmospheric Chemistry and Physics, 2007, 7, 2527-2550.	1.9	95
33	Carbonate precipitation in brine â€“ a potential trigger for tropospheric ozone depletion events. Atmospheric Chemistry and Physics, 2006, 6, 4653-4658.	1.9	92
34	Modeling halogen chemistry in the marine boundary layer 2. Interactions with sulfur and the cloud-covered MBL. Journal of Geophysical Research, 2002, 107, ACH 2-1-ACH 2-12.	3.3	91
35	The role of BrNO3in marine tropospheric chemistry: A model study. Geophysical Research Letters, 1999, 26, 2857-2860.	1.5	88
36	Modeling the chemical effects of ship exhaust in the cloud-free marine boundary layer. Atmospheric Chemistry and Physics, 2003, 3, 233-250.	1.9	83

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37	Technical Note: The MESSy-submodel AIRSEA calculating the air-sea exchange of chemical species. Atmospheric Chemistry and Physics, 2006, 6, 5435-5444.	1.9	79
38	Variation of marine aerosol acidity with particle size. Geophysical Research Letters, 2002, 29, 5-1.	1.5	74
39	Measurements of C2-C7hydrocarbons during the Polar Sunrise Experiment 1994: Further evidence for halogen chemistry in the troposphere. Journal of Geophysical Research, 1998, 103, 13169-13180.	3.3	72
40	Ubiquitous atmospheric production of organic acids mediated by cloud droplets. Nature, 2021, 593, 233-237.	13.7	71
41	Latitudinal variation in the multiphase chemical processing of inorganic halogens and related species over the eastern North and South Atlantic Oceans. Atmospheric Chemistry and Physics, 2009, 9, 7361-7385.	1.9	68
42	Oxidation photochemistry in the Southern Atlantic boundary layer: unexpected deviations of photochemical steady state. Atmospheric Chemistry and Physics, 2011, 11, 8497-8513.	1.9	68
43	Reactive Halogens in the Marine Boundary Layer (RHaMBLe): the tropical North Atlantic experiments. Atmospheric Chemistry and Physics, 2010, 10, 1031-1055.	1.9	66
44	Simulation of the diurnal variations of the oxygen isotope anomaly (Î”¹⁷O) of reactive atmospheric species. Atmospheric Chemistry and Physics, 2011, 11, 3653-3671.	1.9	66
45	Technical Note: Coupling of chemical processes with the Modular Earth Submodel System (MESSy) submodel TRACER. Atmospheric Chemistry and Physics, 2008, 8, 1677-1687.	1.9	65
46	Variation of sea salt aerosol pH with relative humidity. Geophysical Research Letters, 2001, 28, 247-250.	1.5	64
47	Modelling of the nighttime nitrogen and sulfur chemistry in size resolved droplets of an orographic cloud. Journal of Atmospheric Chemistry, 1995, 20, 89-116.	1.4	63
48	Kinetics and Products of the Reactions BrO + DMS and Br + DMS at 298 K. Journal of Physical Chemistry A, 1999, 103, 7199-7209.	1.1	57
49	Phase partitioning of soluble trace gases with sizeâ€resolved aerosols in nearâ€surface continental air over northern Colorado, USA, during winter. Journal of Geophysical Research D: Atmospheres, 2013, 118, 9414-9427.	1.2	56
50	Sensitivity of tropospheric chemical composition to halogen-radical chemistry using a fully coupled size-resolved multiphase chemistryâ€“global climate system: halogen distributions, aerosol composition, and sensitivity of climate-relevant gases. Atmospheric Chemistry and Physics, 2014, 14, 3397-3425.	1.9	56
51	Distribution of hydrogen peroxide and formaldehyde over Central Europe during the HOOVER project. Atmospheric Chemistry and Physics, 2011, 11, 4391-4410.	1.9	55
52	The photolysis module JVAL-14, compatible with the MESSy standard, and the JVal PreProcessor (JVPP). Geoscientific Model Development, 2014, 7, 2653-2662.	1.3	55
53	The community atmospheric chemistry box model CAABA/MECCA-4.0. Geoscientific Model Development, 2019, 12, 1365-1385.	1.3	54
54	Influence of summertime deep convection on formaldehyde in the middle and upper troposphere over Europe. Journal of Geophysical Research, 2006, 111, .	3.3	50

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55	Significance of HOxand peroxides production due to alkene ozonolysis during fall and winter: A modeling study. Journal of Geophysical Research, 2000, 105, 17721-17738.	3.3	49
56	Global atmospheric budget of simple monocyclic aromatic compounds. Atmospheric Chemistry and Physics, 2016, 16, 6931-6947.	1.9	48
57	Chemistry, transport and dry deposition of trace gases in the boundary layer over the tropical Atlantic Ocean and the Guyanas during the GABRIEL field campaign. Atmospheric Chemistry and Physics, 2007, 7, 3933-3956.	1.9	47
58	Impact of dust on tropospheric chemistry over polluted regions: a case study of the Beijing megacity. Atmospheric Chemistry and Physics, 2010, 10, 3855-3873.	1.9	47
59	Photochemical production of hydroxyl radical and hydroperoxides in water extracts of nascent marine aerosols produced by bursting bubbles from Sargasso seawater. Geophysical Research Letters, 2008, 35, .	1.5	45
60	Tropospheric BrO column densities in the Arctic derived from satellite: retrieval and comparison to ground-based measurements. Atmospheric Measurement Techniques, 2012, 5, 2779-2807.	1.2	43
61	Simulation of atmospheric mercury depletion events (AMDEs) during polar springtime using the MECCA box model. Atmospheric Chemistry and Physics, 2008, 8, 7165-7180.	1.9	42
62	A kinetic chemistry tagging technique and its application to modelling the stable isotopic composition of atmospheric trace gases. Geoscientific Model Development, 2010, 3, 337-364.	1.3	41
63	Technical Note: Simulation of detailed aerosol chemistry on the global scale using MECCA-AERO. Atmospheric Chemistry and Physics, 2007, 7, 2973-2985.	1.9	37
64	Henryâ€™s law constants (IUPAC Recommendations 2021). Pure and Applied Chemistry, 2022, 94, 71-85.	0.9	37
65	LIF studies of iodine oxide chemistry : Part 3. Reactions IO + NO3 â†' OIO + NO2, I + NO3 â†' IO + NO2, and CH2I + O2 â†' (products): implications for the chemistry of the marine atmosphere at night. Physical Chemistry Chemical Physics, 2008, 10, 1540.	1.3	36
66	Case study of the diurnal variability of chemically active species with respect to boundary layer dynamics during DOMINO. Atmospheric Chemistry and Physics, 2012, 12, 5329-5341.	1.9	35
67	New tracer compounds for secondary organic aerosol formation from Î²-caryophyllene oxidation. Atmospheric Environment, 2013, 80, 122-130.	1.9	35
68	Volatile organic compounds (VOCs) in photochemically aged air from the eastern and western Mediterranean. Atmospheric Chemistry and Physics, 2017, 17, 9547-9566.	1.9	35
69	Oxidation processes in the eastern Mediterranean atmosphere: evidence from the modelling of HO_{<i>x</i>} measurements over Cyprus. Atmospheric Chemistry and Physics, 2018, 18, 10825-10847.	1.9	35
70	Bromide content of sea-salt aerosol particles collected over the Indian Ocean during INDOEX 1999. Journal of Geophysical Research, 2002, 107, INX2 31-1.	3.3	33
71	Computer modelling of clouds at Kleiner Feldberg. Journal of Atmospheric Chemistry, 1994, 19, 189-229.	1.4	32
72	Consistent simulation of bromine chemistry from the marine boundary layer to the stratosphere â€“ Part 1: Model description, sea salt aerosols and pH. Atmospheric Chemistry and Physics, 2008, 8, 5899-5917.	1.9	30

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73	Origins of aerosol chlorine during winter over north central Colorado, USA. Journal of Geophysical Research D: Atmospheres, 2015, 120, 678-694.	1.2	30
74	Impact of the Manaus urban plume on trace gas mixing ratios near the surface in the Amazon Basin: Implications for the NOâ€•NO₂â€•O₃ photostationary state and peroxy radical levels. Journal of Geophysical Research, 2012, 117, .	3.3	29
75	Evaluation of simulated photolysis rates and their response to solar irradiance variability. Journal of Geophysical Research D: Atmospheres, 2016, 121, 6066-6084.	1.2	27
76	Assessing the effect of marine isoprene and ship emissions on ozone, using modelling and measurements from the South Atlantic Ocean. Environmental Chemistry, 2010, 7, 171.	0.7	26
77	Chemical Mechanism Solvers in Air Quality Models. Atmosphere, 2011, 2, 510-532.	1.0	25
78	A threeâ€dimensional model study on the production of BrO and Arctic boundary layer ozone depletion. Journal of Geophysical Research, 2008, 113, .	3.3	24
79	Toward effective emissions of ships in global models. Meteorologische Zeitschrift, 2008, 17, 117-129.	0.5	24
80	Possible evidence for a connection between methyl iodide emissions and Saharan dust. Journal of Geophysical Research, 2007, 112, .	3.3	23
81	HO_x measurements in the summertime upper troposphere over Europe: a comparison of observations to a box model and a 3-D model. Atmospheric Chemistry and Physics, 2013, 13, 10703-10720.	1.9	19
82	Influence of aromatics on tropospheric gas-phase composition. Atmospheric Chemistry and Physics, 2021, 21, 2615-2636.	1.9	19
83	Gas phase acid, ammonia and aerosol ionic and trace element concentrations at Cape Verde during the Reactive Halogens in the Marine Boundary Layer (RHaMBLe) 2007 intensive sampling period. Earth System Science Data, 2013, 5, 385-392.	3.7	15
84	A compilation of tropospheric measurements of gas-phase and aerosol chemistry in polar regions. Earth System Science Data, 2012, 4, 215-282.	3.7	14
85	Modelling the chemistry of ozone, halogen compounds, and hydrocarbons in the arctic troposphere during spring. Tellus, Series B: Chemical and Physical Meteorology, 1993, 45, 522-532.	0.8	13
86	Comment on "Reactions at Interfaces As a Source of Sulfate Formation in Sea-Salt Particles" (II). Science, 2004, 303, 628c-628.	6.0	13
87	Simulation of organics in the atmosphere: evaluation of EMACv2.54 with the Mainz Organic Mechanism (MOM) coupled to the ORACLE (v1.0) submodel. Geoscientific Model Development, 2022, 15, 2673-2710.	1.3	13
88	Trichloroethene and tetrachloroethene: tropospheric probes for Cl- and Br-atom reactions during the polar sunrise. Tellus, Series B: Chemical and Physical Meteorology, 1997, 49, 583-591.	0.8	11
89	Meteorology during the DOMINO campaign and its connection with trace gases and aerosols. Atmospheric Chemistry and Physics, 2014, 14, 2325-2342.	1.9	11
90	Implementation of the Community Earth System Model (CESM) version 1.2.1 as a new base model into version 2.50 of the MESSy framework. Geoscientific Model Development, 2016, 9, 125-135.	1.3	11

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91	Introducing the bromide/alkalinity ratio for a follow-up discussion on "Precipitation of salts in freezing seawater and ozone depletion events: a status report", by Morin et al., published in Atmos. Chem. Phys., 8, 7317â€“7324, 2008. Atmospheric Chemistry and Physics, 2010, 10, 7655-7658.	1.9	10
92	Halogen activation in the plume of Masaya volcano: field observations and box model investigations. Atmospheric Chemistry and Physics, 2021, 21, 3371-3393.	1.9	10
93	Trichloroethene and tetrachloroethene: tropospheric probes for Cl- and Br-atom reactions during the polar sunrise. Tellus, Series B: Chemical and Physical Meteorology, 1997, 49, 583-591.	0.8	9
94	Force field calculations for ethanedial, butanedione and some cyclic 1,2-diketones with respect to the influence of the intercarbonyl dihedral angle on their vibrational frequencies. Journal of Molecular Structure, 1991, 263, 123-132.	1.8	8
95	Implementation of the chemistry module MECCA (v2.5) in the modal aerosol version of the Community Atmosphere Model component (v3.6.33) of the Community Earth System Model. Geoscientific Model Development, 2013, 6, 255-262.	1.3	8
96	Oxidation of low-molecular-weight organic compounds in cloud droplets: development of the JÃ¼lich Aqueous-phase Mechanism of Organic Chemistry (JAMOC) in CAABA/MECCA (version 4.5.0). Geoscientific Model Development, 2021, 14, 4103-4115.	1.3	8
97	Quantifying atmospheric transport, chemistry, and mixing using a new trajectory-box model and a global atmospheric-chemistry GCM. Geoscientific Model Development, 2009, 2, 267-280.	1.3	7
98	Oxidation of low-molecular-weight organic compounds in cloud droplets: global impact on tropospheric oxidants. Atmospheric Chemistry and Physics, 2021, 21, 9909-9930.	1.9	7
99	Description and evaluation of the community aerosol dynamics model MAFOR v2.0. Geoscientific Model Development, 2022, 15, 3969-4026.	1.3	7
100	Atmospheric chemistry, sources and sinks of carbon suboxide, C₃O₂. Atmospheric Chemistry and Physics, 2017, 17, 8789-8804.	1.9	6
101	Comment on â€œA chemical aqueous phase radical mechanism for tropospheric chemistryâ€•by H. Herrmann et al.. Chemosphere, 2000, 41, 631-632.	4.2	4
102	Accelerating simulations using REDCHEM_v0.0 for atmospheric chemistry mechanism reduction. Geoscientific Model Development, 2018, 11, 3391-3407.	1.3	4
103	A fast stratospheric chemistry solver: the E4CHEM submodel for the atmospheric chemistry global circulation model EMAC. Geoscientific Model Development, 2010, 3, 321-328.	1.3	2
104	Editorial Note "Î±-Pinene nitrates: synthesis, yields and atmospheric chemistry'' published in Atmos. Chem. Phys., 11, 6337â€“6347, 2011. Atmospheric Chemistry and Physics, 2011, 11, 12065-12065.	1.9	2
105	The volume of the solution is 1 kg: Pleading for scientific writing. Eos, 2000, 81, 6-6.	0.1	1
106	Impact of pyruvic acid photolysis on acetaldehyde and peroxy radical formation in the boreal forest: theoretical calculations and model results. Atmospheric Chemistry and Physics, 2021, 21, 14333-14349.	1.9	1
107	Title is missing!. Journal of Atmospheric Chemistry, 2003, 46, 201-203.	1.4	0
108	Corrigendum to "Oxidation photochemistry in the Southern Atlantic boundary layer: unexpected deviations of photochemical steady state" published in Atmos. Chem. Phys., 11, 8497â€“8513, 2011. Atmospheric Chemistry and Physics, 2011, 11, 8825-8826.	1.9	0

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109	Computer Modelling of Clouds at Kleiner Feldberg. , 1994, , 189-229.		0
110	A Mechanism for Halogen Release from Sea-Salt Aerosol in the Remote Marine Boundary Layer. SpringerBriefs on Pioneers in Science and Practice, 2016, , 189-196.	0.2	0