Ru-Shan Gao

List of Publications by Year
in descending order

138 papers	7,894 citations	53794 45 h-index	62596 80 g-index
148 all docs	148 docs citations	148 times ranked	5858 citing authors

#	Article	IF	Citations
1	A Novel Networkâ€Based Approach to Determining Measurement Representation Error for Model Evaluation of Aerosol Microphysical Properties. Journal of Geophysical Research D: Atmospheres, 2022, 127, .	3.3	3
2	Sea spray aerosol concentration modulated by sea surface temperature. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	29
3	Toward practical stratospheric aerosol albedo modification: Solar-powered lofting. Science Advances, 2021, 7, .	10.3	6
4	The Unmanned Systems Research Laboratory (USRL): A New Facility for UAV-Based Atmospheric Observations. Atmosphere, 2021, 12, 1042.	2.3	21
5	Performance Assessment of Portable Optical Particle Spectrometer (POPS). Sensors, 2020, 20, 6294.	3.8	11
6	Single-photon laser-induced fluorescence detection of nitric oxide at sub-parts-per-trillion mixing ratios. Atmospheric Measurement Techniques, 2020, 13, 2425-2439.	3.1	18
7	Global-scale distribution of ozone in the remote troposphere from the ATom and HIPPO airborne field missions. Atmospheric Chemistry and Physics, 2020, 20, 10611-10635.	4.9	31
8	Black carbon lofts wildfire smoke high into the stratosphere to form a persistent plume. Science, 2019, 365, 587-590.	12.6	159
9	Aerosol size distributions during the Atmospheric Tomography Mission (ATom): methods, uncertainties, and data products. Atmospheric Measurement Techniques, 2019, 12, 3081-3099.	3.1	59
10	Efficient Inâ€Cloud Removal of Aerosols by Deep Convection. Geophysical Research Letters, 2019, 46, 1061-1069.	4.0	48
11	Religious burning as a potential major source of atmospheric fine aerosols in summertime Lhasa on the Tibetan Plateau. Atmospheric Environment, 2018, 181, 186-191.	4.1	24
12	SO 2 Observations and Sources in the Western Pacific Tropical Tropopause Region. Journal of Geophysical Research D: Atmospheres, 2018, 123, 13,549.	3.3	11
13	A Birdâ€™s-Eye View: Development of an Operational ARM Unmanned Aerial Capability for Atmospheric Research in Arctic Alaska. Bulletin of the American Meteorological Society, 2018, 99, 1197-1212.	3.3	46
14	Limited impact of sulfate-driven chemistry on black carbon aerosol aging in power plant plumes. AIMS Environmental Science, 2018, 5, 195-215.	1.4	1
15	The NASA Airborne Tropical Tropopause Experiment: High-Altitude Aircraft Measurements in the Tropical Western Pacific. Bulletin of the American Meteorological Society, 2017, 98, 129-143.	3.3	79
16	A practical set of miniaturized instruments for vertical profiling of aerosol physical properties. Aerosol Science and Technology, 2017, 51, 715-723.	3.1	16
17	Efficient transport of tropospheric aerosol into the stratosphere via the Asian summer monsoon anticyclone. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 6972-6977.	7.1	106
18	The role of sulfur dioxide in stratospheric aerosol formation evaluated by using in situ measurements in the tropical lower stratosphere. Geophysical Research Letters, 2017, 44, 4280-4286.	4.0	16

#	Article	IF	Citations
19	In situ measurements of water uptake by black carbonâ€containing aerosol in wildfire plumes. Journal of Geophysical Research D: Atmospheres, 2017, 122, 1086-1097.	3.3	21
20	Physical processes controlling the spatial distributions of relative humidity in the tropical tropopause layer over the Pacific. Journal of Geophysical Research D: Atmospheres, 2017, 122, 6094-6107.	3.3	20
21	Probing the subtropical lowermost stratosphere and the tropical upper troposphere and tropopause layer for inorganic bromine. Atmospheric Chemistry and Physics, 2017, 17, 1161-1186.	4.9	25
22	Ice water contentâ€extinction relationships and effective diameter for TTL cirrus derived from in situ measurements during ATTREX 2014. Journal of Geophysical Research D: Atmospheres, 2017, 122, 4494-4507.	3.3	23
23	A new Differential Optical Absorption Spectroscopy instrument to study atmospheric chemistry from a high-altitude unmanned aircraft. Atmospheric Measurement Techniques, 2017, 10, 1017-1042.	3.1	20
24	Fluorescence calibration method for single-particle aerosol fluorescence instruments. Atmospheric Measurement Techniques, 2017, 10, 1755-1768.	3.1	21
25	The Pilatus unmanned aircraft system for lower atmospheric research. Atmospheric Measurement Techniques, 2016, 9, 1845-1857.	3.1	28
26	The airborne mass spectrometer AIMS â€“ Part 1: AIMS-H₂O for UTLS water vapor measurements. Atmospheric Measurement Techniques, 2016, 9, 939-953.	3.1	22
27	A laser-induced fluorescence instrument for aircraft measurements of sulfur dioxide in the upper troposphere and lower stratosphere. Atmospheric Measurement Techniques, 2016, 9, 4601-4613.	3.1	19
28	Observational constraints on the efficiency of dehydration mechanisms in the tropical tropopause layer. Geophysical Research Letters, 2016, 43, 2912-2918.	4.0	27
29	Radiative forcing from anthropogenic sulfur and organic emissions reaching the stratosphere. Geophysical Research Letters, 2016, 43, 9361-9367.	4.0	25
30	Ambient observations of hygroscopic growth factor and <i>f</i>(RH) below 1: Case studies from surface and airborne measurements. Journal of Geophysical Research D: Atmospheres, 2016, 121, 661-677.	3.3	25
31	Persistent Waterâ€“Nitric Acid Condensate with Saturation Water Vapor Pressure Greater than That of Hexagonal Ice. Journal of Physical Chemistry A, 2016, 120, 1431-1440.	2.5	9
32	A light-weight, high-sensitivity particle spectrometer for PM2.5 aerosol measurements. Aerosol Science and Technology, 2016, 50, 88-99.	3.1	71
33	A two-channel, tunable diode laser-based hygrometer for measurement of water vapor and cirrus cloud ice water content in the upper troposphere and lower stratosphere. Atmospheric Measurement Techniques, 2015, 8, 211-224.	3.1	29
34	Airborne observations of regional variation in fluorescent aerosol across the United States. Journal of Geophysical Research D: Atmospheres, 2015, 120, 1153-1170.	3.3	93
35	Active and widespread halogen chemistry in the tropical and subtropical free troposphere. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 9281-9286.	7.1	91
36	Observations of high level of ozone at Qinghai Lake basin in the northeastern Qinghai-Tibetan Plateau, western China. Journal of Atmospheric Chemistry, 2015, 72, 19-26.	3.2	12

#	Article	IF	Citations
37	Evaluation of UT/LS hygrometer accuracy by intercomparison during the NASA MACPEX mission. Journal of Geophysical Research D: Atmospheres, 2014, 119, 1915-1935.	3.3	47
38	OH in the tropical upper troposphere and its relationships to solar radiation and reactive nitrogen. Journal of Atmospheric Chemistry, 2014, 71, 55-64.	3.2	14
39	Evaluation of a Perpendicular Inlet for Airborne Sampling of Interstitial Submicron Black-Carbon Aerosol. Aerosol Science and Technology, 2013, 47, 1066-1072.	3.1	11
40	Globalâ€scale seasonally resolved black carbon vertical profiles over the Pacific. Geophysical Research Letters, 2013, 40, 5542-5547.	4.0	124
41	Measurement of low-ppm mixing ratios of water vapor in the upper troposphere and lower stratosphere using chemical ionization mass spectrometry. Atmospheric Measurement Techniques, 2013, 6, 1461-1475.	3.1	19
42	A High-Sensitivity Low-Cost Optical Particle Counter Design. Aerosol Science and Technology, 2013, 47, 137-145.	3.1	24
43	Note: Compact, two-dimension translatable slit aperture. Review of Scientific Instruments, 2013, 84, 116103.	1.3	3
44	Black carbon aerosol size in snow. Scientific Reports, 2013, 3, 1356.	3.3	115
45	A compact, fast UV photometer for measurement of ozone from research aircraft. Atmospheric Measurement Techniques, 2012, 5, 2201-2210.	3.1	27
46	Assessing Single Particle Soot Photometer and Integrating Sphere/Integrating Sandwich Spectrophotometer measurement techniques for quantifying black carbon concentration in snow. Atmospheric Measurement Techniques, 2012, 5, 2581-2592.	3.1	96
47	Longâ€term ozone trends at rural ozone monitoring sites across the United States, 1990â€"2010. Journal of Geophysical Research, 2012, 117, .	3.3	180
48	Atmospheric observations of Arctic Ocean methane emissions up to 82Â° north. Nature Geoscience, 2012, 5, 318-321.	12.9	124
49	Seasonal variability of black carbon mass in the tropical tropopause layer. Geophysical Research Letters, 2011, 38, .	4.0	12
50	Black carbon measurements in the Pearl River Delta region of China. Journal of Geophysical Research, 2011, 116, .	3.3	53
51	Dynamical and chemical characteristics of tropospheric intrusions observed during START08. Journal of Geophysical Research, 2011, 116, .	3.3	40
52	Characteristics of black carbon aerosol from a surface oil burn during the Deepwater Horizon oil spill. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	34
53	Laboratory evaluation of the effect of nitric acid uptake on frost point hygrometer performance. Atmospheric Measurement Techniques, 2011, 4, 289-296.	3.1	9
54	Aircraft observations of enhancement and depletion of black carbon mass in the springtime Arctic. Atmospheric Chemistry and Physics, 2010, 10, 9667-9680.	4.9	68

#	Article	IF	Citations
55	The Detection Efficiency of the Single Particle Soot Photometer. Aerosol Science and Technology, 2010, 44, 612-628.	3.1	151
56	A new interpretation of total column BrO during Arctic spring. Geophysical Research Letters, 2010, 37, .	4.0	116
57	Globalâ€scale black carbon profiles observed in the remote atmosphere and compared to models. Geophysical Research Letters, 2010, 37, .	4.0	172
58	Correction to â€œGlobal-scale black carbon profiles observed in the remote atmosphere and compared to modelsâ€• Geophysical Research Letters, 2010, 37, n/a-n/a.	4.0	7
59	Heating rates and surface dimming due to black carbon aerosol absorption associated with a major U.S. city. Geophysical Research Letters, 2009, 36, .	4.0	17
60	Evaluation of AIRS, IASI, and OMI ozone profile retrievals in the extratropical tropopause region using in situ aircraft measurements. Journal of Geophysical Research, 2009, 114, .	3.3	55
61	Stratospheric correlation between nitric acid and ozone. Journal of Geophysical Research, 2009, 114, .	3.3	20
62	Validation of Aura Microwave Limb Sounder HCl measurements. Journal of Geophysical Research, 2008, 113, .	3.3	50
63	Coatings and their enhancement of black carbon light absorption in the tropical atmosphere. Journal of Geophysical Research, 2008, 113, .	3.3	266
64	Calculations of solar shortwave heating rates due to black carbon and ozone absorption using in situ measurements. Journal of Geophysical Research, 2008, 113, .	3.3	28
65	Measurement of the mixing state, mass, and optical size of individual black carbon particles in urban and biomass burning emissions. Geophysical Research Letters, 2008, 35, .	4.0	388
66	Empirical correlations between black carbon aerosol and carbon monoxide in the lower and middle troposphere. Geophysical Research Letters, 2008, 35, .	4.0	60
67	An Inter-Comparison of Instruments Measuring Black Carbon Content of Soot Particles. Aerosol Science and Technology, 2007, 41, 295-314.	3.1	276
68	A Novel Method for Estimating Light-Scattering Properties of Soot Aerosols Using a Modified Single-Particle Soot Photometer. Aerosol Science and Technology, 2007, 41, 125-135.	3.1	258
69	Condensedâ€phase nitric acid in a tropical subvisible cirrus cloud. Geophysical Research Letters, 2007, 34, .	4.0	21
70	Chemical behavior of the tropopause observed during the Stratosphereâ€Troposphere Analyses of Regional Transport experiment. Journal of Geophysical Research, 2007, 112, .	3.3	85
71	Single-particle measurements of midlatitude black carbon and light-scattering aerosols from the boundary layer to the lower stratosphere. Journal of Geophysical Research, 2006, 111, .	3.3	594
72	A Chemical Ionization Mass Spectrometer for Ground-Based Measurements of Nitric Acid. Journal of Atmospheric and Oceanic Technology, 2006, 23, 1104-1113.	1.3	10

#	Article	IF	Citations
73	The observation of nitric acid-containing particles in the tropical lower stratosphere. Atmospheric Chemistry and Physics, 2006, 6, 601-611.	4.9	30
74	Molecular velocity distributions and generalized scale invariance in the turbulent atmosphere. Faraday Discussions, 2005, 130, 181.	3.2	14
75	Quantifying Stratospheric Ozone in the Upper Troposphere with in Situ Measurements of HCl. Science, 2004, 304, 261-265.	12.6	68
76	Stratospheric Aerosol Sampling: Effect of a Blunt-Body Housing on Inlet Sampling Characteristics. Aerosol Science and Technology, 2004, 38, 1080-1090.	3.1	7
77	Evidence That Nitric Acid Increases Relative Humidity in Low-Temperature Cirrus Clouds. Science, 2004, 303, 516-520.	12.6	110
78	Nitric acid uptake on subtropical cirrus cloud particles. Journal of Geophysical Research, 2004, 109, n/a-n/a.	3.3	62
79	Correction to â€œNitric acid uptake on subtropical cirrus cloud particlesâ€• Journal of Geophysical Research, 2004, 109, .	3.3	2
80	Law of mass action in the Arctic lower stratospheric polar vortex Januaryâ€"March 2000: ClO scaling and the calculation of ozone loss rates in a turbulent fractal medium. Journal of Geophysical Research, 2003, 108, .	3.3	17
81	A vortex-scale simulation of the growth and sedimentation of large nitric acid hydrate particles. Journal of Geophysical Research, 2002, 107, SOL 43-1.	3.3	80
82	A scaling analysis of ER-2 data in the inner Arctic vortex during January-March 2000. Journal of Geophysical Research, 2002, 107, SOL 49-1-SOL 49-19.	3.3	14
83	An analysis of large HNO3-containing particles sampled in the Arctic stratosphere during the winter of 1999/2000. Journal of Geophysical Research, 2002, 107, SOL 41-1.	3.3	55
84	Relating inferred HNO3flux values to the denitrification of the 1999-2000 Arctic vortex. Geophysical Research Letters, 2002, 29, 63-1-63-4.	4.0	4
85	The emission and chemistry of reactive nitrogen species in the plume of an Athena II solid-fuel rocket motor. Geophysical Research Letters, 2002, 29, 34-1-34-4.	4.0	13
86	Correction to â€œRelating inferred HNO3flux values to the denitrification of the 1999â€"2000 Arctic vortexâ€•by M. J. Northway et al.. Geophysical Research Letters, 2002, 29, 31-1.	4.0	0
87	Role of NOyas a diagnostic of small-scale mixing in a denitrified polar vortex. Journal of Geophysical Research, 2002, 107, ACL 21-1.	3.3	8
88	Establishing the Dependence of [HO2]/[OH] on Temperature, Halogen Loading, O3, and NOxBased on in Situ Measurements from the NASA ER-2â€. Journal of Physical Chemistry A, 2001, 105, 1535-1542.	2.5	16
89	JNO2at high solar zenith angles in the lower stratosphere. Geophysical Research Letters, 2001, 28, 2405-2408.	4.0	5
90	Severe and extensive denitrification in the 1999-2000 Arctic winter stratosphere. Geophysical Research Letters, 2001, 28, 2875-2878.	4.0	71

#	Article	IF	Citations
91	Observational evidence for the role of denitrification in Arctic stratospheric ozone loss. Geophysical Research Letters, 2001, 28, 2879-2882.	4.0	33
92	The NOxâ"HNO3System in the Lower Stratosphere:Â Insights from In Situ Measurements and Implications of theJHNO3â"[OH] Relationship. Journal of Physical Chemistry A, 2001, 105, 1521-1534.	2.5	24
93	Sources, Sinks, and the Distribution of OH in the Lower Stratosphereâ€. Journal of Physical Chemistry A, 2001, 105, 1543-1553.	2.5	42
94	The Detection of Large HNO3-Containing Particles in the Winter Arctic Stratosphere. Science, 2001, 291, 1026-1031.	12.6	279
95	A fast-response chemical ionization mass spectrometer for in situ measurements of HNO[sub 3] in the upper troposphere and lower stratosphere. Review of Scientific Instruments, 2000, 71, 3886.	1.3	36
96	Influence of air mass histories on radical species during the Photochemistry of Ozone Loss in the Arctic Region in Summer (POLARIS) mission. Journal of Geophysical Research, 2000, 105, 15185-15199.	3.3	5
97	Ozone destruction and production rates between spring and autumn in the Arctic stratosphere. Geophysical Research Letters, 2000, 27, 2605-2608.	4.0	16
98	Computer-controlled Teflon flow control valve. Review of Scientific Instruments, 1999, 70, 4732-4733.	1.3	10
99	NOypartitioning from measurements of nitrogen and hydrogen radicals in the upper troposphere. Geophysical Research Letters, 1999, 26, 51-54.	4.0	9
100	Buffering interactions in the modeled response of stratospheric O3to increased NOxand HOx. Journal of Geophysical Research, 1999, 104, 3741-3754.	3.3	27
101	A comparison of observations and model simulations of NOx/NOyin the lower stratosphere. Geophysical Research Letters, 1999, 26, 1153-1156.	4.0	61
102	Partitioning of NOyspecies in the summer Arctic stratosphere. Geophysical Research Letters, 1999, 26, 1157-1160.	4.0	46
103	Twilight observations suggest unknown sources of HOx. Geophysical Research Letters, 1999, 26, 1373-1376.	4.0	85
104	Comparison of modeled and observed values of NO2and JNO2during the Photochemistry of Ozone Loss in the Arctic Region in Summer (POLARIS) mission. Journal of Geophysical Research, 1999, 104, 26687-26703.	3.3	36
105	The coupling of ClONO2, ClO, and NO2in the lower stratosphere from in situ observations using the NASA ER-2 aircraft. Journal of Geophysical Research, 1999, 104, 26705-26714.	3.3	41
106	Carbonaceous aerosol (soot) measured in the lower stratosphere during POLARIS and its role in stratospheric photochemistry. Journal of Geophysical Research, 1999, 104, 26753-26766.	3.3	66
107	Subsidence, mixing, and denitrification of Arctic polar vortex air measured during POLARIS. Journal of Geophysical Research, 1999, 104, 26611-26623.	3.3	49
108	Constraining the heterogeneous loss of O3on soot particles with observations in jet engine exhaust plumes. Geophysical Research Letters, 1998, 25, 3323-3326.	4.0	22

#	Article	IF	Citations
109	Evaluating the role of NAT, NAD, and liquid H2SO4/H2O/HNO3solutions in Antarctic polar stratospheric cloud aerosol: Observations and implications. Journal of Geophysical Research, 1997, 102, 13255-13282.	3.3	54
110	The role of HOxin super- and subsonic aircraft exhaust plumes. Geophysical Research Letters, 1997, 24, 65-68.	4.0	19
111	Partitioning of the reactive nitrogen reservoir in the lower stratosphere of the southern hemisphere: Observations and modeling. Journal of Geophysical Research, 1997, 102, 3935-3949.	3.3	50
112	Influence of Antarctic denitrification on two-dimensional model NOy/N2O correlations in the lower stratosphere. Journal of Geophysical Research, 1997, 102, 13183-13192.	3.3	13
113	Measurements of the NOy-N2O correlation in the lower stratosphere: Latitudinal and seasonal changes and model comparisons. Journal of Geophysical Research, 1997, 102, 13193-13212.	3.3	41
114	Stratospheric NO and NO2abundances from ATMOS Solar-Occultation Measurements. Geophysical Research Letters, 1996, 23, 2373-2376.	4.0	39
115	In situobservations of NOy, O3, and the NOy/O3ratio in the lower stratosphere. Geophysical Research Letters, 1996, 23, 1653-1656.	4.0	44
116	Observations of large reductions in the NO/NOyratio near the mid-latitude tropopause and the role of heterogeneous chemistry. Geophysical Research Letters, 1996, 23, 3223-3226.	4.0	44
117	Absolute differential cross sections for the scattering of kilo-electron-volt O atoms. Physical Review A, 1996, 53, 1581-1588.	2.5	12
118	In situ observations in aircraft exhaust plumes in the lower stratosphere at midlatitudes. Journal of Geophysical Research, 1995, 100, 3065.	3.3	73
119	Emission Measurements of the Concorde Supersonic Aircraft in the Lower Stratosphere. Science, 1995, 270, 70-74.	12.6	165
120	In situ measurements of the NO2/NO ratio for testing atmospheric photochemical models. Geophysical Research Letters, 1994, 21, 2555-2558.	4.0	20
121	The distribution of hydrogen, nitrogen, and chlorine radicals in the lower stratosphere: Implications for changes in O3due to emission of NOyfrom supersonic aircraft. Geophysical Research Letters, 1994, 21, 2547-2550.	4.0	67
122	The diurnal variation of hydrogen, nitrogen, and chlorine radicals: Implications for the heterogeneous production of HNO2. Geophysical Research Letters, 1994, 21, 2551-2554.	4.0	76
123	New photolysis system for NO2measurements in the lower stratosphere. Journal of Geophysical Research, 1994, 99, 20673.	3.3	37
124	Removal of Stratospheric O3 by Radicals: In Situ Measurements of OH, HO2, NO, NO2, ClO, and BrO. Science, 1994, 266, 398-404.	12.6	384
125	Experimental and theoretical studies of theHe2+-He system: Differential cross sections for direct, single-, and double-charge-transfer scattering at keV energies. Physical Review A, 1992, 45, 6388-6394.	2.5	11
126	Absolute differential cross sections for electron capture and loss by kilo-electron-volt hydrogen atoms. Physical Review A, 1991, 44, 5647-5652.	2.5	18

#	Article	IF	Citations
127	Collisions betweenH+andH2at kilo-electron-volt energies: Absolute differential cross sections for small-angle direct, single-, and double-charge-transfer scattering. Physical Review A, 1991, 44, 5599-5604.	2.5	13
128	Collisions of kilo-electron-voltH+andHe+with molecules at small angles: Absolute differential cross sections for charge transfer. Physical Review A, 1990, 41, 5929-5933.	2.5	52
129	Collisions of keV-energy H atoms with the rare gases: Absolute differential cross sections at small angles. Physical Review A, 1989, 40, 4914-4919.	2.5	15
130	Absolute differential cross sections for small-angleH+-He direct and charge-transfer scattering at keV energies. Physical Review A, 1989, 40, 3626-3631.	2.5	26
131	Direct and charge-transfer scattering of keV-energyH+andHe+projectiles from rare-gas atoms to obtain small-angle absolute differential cross sections. Physical Review A, 1989, 40, 4920-4925.	2.5	33
132	Highâ€resolution positionâ€sensitive detector. Review of Scientific Instruments, 1988, 59, 1954-1956.	1.3	2
133	Absolute differential cross sections for very-small-angle scattering of keV H and He atoms byH2andN2. Physical Review A, 1988, 38, 2794-2797.	2.5	28
134	Large-angle keV-energy He-He scattering measurements with use of a correlated two-particle coincidence detector. Physical Review A, 1988, 37, 687-691.	2.5	3
135	Absolute differential cross sections for small-angleHe+-He elastic and charge-transfer scattering at keV energies. Physical Review A, 1988, 38, 2789-2793.	2.5	32
136	Absolute differential cross sections for very-small-angle elastic scattering in He+He collisions at keV energies. Physical Review A, 1987, 35, 4541-4547.	2.5	23
137	Absolute differential cross sections for small-angle elastic scattering in heliumâ€"rare-gas collisions at keV energies. Physical Review A, 1987, 36, 3077-3082.	2.5	21
138	Absolute and angular efficiencies of a microchannelâ€plate positionâ€sensitive detector. Review of Scientific Instruments, 1984, 55, 1756-1759.	1.3	165