Mao-Chang Liang

List of Publications by Year
in descending order

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109 papers	3,860 citations	136950 32 h-index	138484 58 g-index
115 all docs	115 docs citations	115 times ranked	4278 citing authors

#	Article	IF	Citations
1	Water vapour in the atmosphere of a transiting extrasolar planet. Nature, 2007, 448, 169-171.	27.8	452
2	A size of â^¼1â€‰au for the radio source Sgr A* at the centre of the Milky Way. Nature, 2005, 438, 62-64.	27.8	202
3	Sulfur chemistry in the middle atmosphere of Venus. Icarus, 2012, 217, 714-739.	2.5	176
4	Source of Nitrogen Isotope Anomaly in HCN in the Atmosphere of Titan. Astrophysical Journal, 2007, 664, L115-L118.	4.5	119
5	InterCarb: A Community Effort to Improve Interlaboratory Standardization of the Carbonate Clumped Isotope Thermometer Using Carbonate Standards. Geochemistry, Geophysics, Geosystems, 2021, 22, e2020GC009588.	2.5	110
6	Photolytically Generated Aerosols in the Mesosphere and Thermosphere of Titan. Astrophysical Journal, 2007, 661, L199-L202.	4.5	106
7	Water in the atmosphere of HD 209458b from 3.6-8 Î¼m IRAC photometric observations in primary transit. Monthly Notices of the Royal Astronomical Society, 2010, 409, 963-974.	4.4	99
8	Production of hydrogen peroxide in the atmosphere of a Snowball Earth and the origin of oxygenic photosynthesis. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 18896-18899.	7.1	98
9	Source of Atomic Hydrogen in the Atmosphere of HD 209458b. Astrophysical Journal, 2003, 596, L247-L250.	4.5	94
10	HIGH-TEMPERATURE PHOTOCHEMISTRY IN THE ATMOSPHERE OF HD 189733b. Astrophysical Journal, 2010, 717, 496-502.	4.5	91
11	Interlaboratory assessment of nitrous oxide isotopomer analysis by isotope ratio mass spectrometry and laser spectroscopy: current status and perspectives. Rapid Communications in Mass Spectrometry, 2014, 28, 1995-2007.	1.5	89
12	Infrared Transmission Spectra for Extrasolar Giant Planets. Astrophysical Journal, 2007, 654, L99-L102.	4.5	84
13	Development of a multicopter-carried whole air sampling apparatus and its applications in environmental studies. Chemosphere, 2016, 144, 484-492.	8.2	84
14	Photolysis of sulphuric acid as the source of sulphur oxides in the mesosphere of Venus. Nature Geoscience, 2010, 3, 834-837.	12.9	75
15	The photochemistry of Pluto's atmosphere as illuminated by New Horizons. Icarus, 2017, 287, 110-115.	2.5	75
16	Constraints on the microphysics of Pluto's photochemical haze from New Horizons observations. Icarus, 2017, 287, 116-123.	2.5	73
17	On the Insignificance of Photochemical Hydrocarbon Aerosols in the Atmospheres of Close-in Extrasolar Giant Planets. Astrophysical Journal, 2004, 605, L61-L64.	4.5	68
18	Habitability of Enceladus: Planetary Conditions for Life. Origins of Life and Evolution of Biospheres, 2008, 38, 355-369.	1.9	67

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19	Ion densities and composition of Titan's upper atmosphere derived from the Cassini Ion Neutral Mass Spectrometer: Analysis methods and comparison of measured ion densities to photochemical model simulations. Journal of Geophysical Research, 2012, 117, .	3.3	67
20	Absorption Cross Sections of NH3, NH2D, NHD2, and ND3in the Spectral Range 140â€“220 nm and Implications for Planetary Isotopic Fractionation. Astrophysical Journal, 2006, 647, 1535-1542.	4.5	65
21	Evidence for carbonyl sulfide (OCS) conversion to CO in the lower atmosphere of Venus. Journal of Geophysical Research, 2009, 114, .	3.3	56
22	Isotopic ratios of nitrate in aerosol samples from Mt. Lulin, a high-altitude station in Central Taiwan. Atmospheric Environment, 2017, 154, 53-69.	4.1	55
23	Isotopic fractionation of nitrous oxide in the stratosphere: Comparison between model and observations. Journal of Geophysical Research, 2004, 109, n/a-n/a.	3.3	54
24	A semianalytic model for photo-induced isotopic fractionation in simple molecules. Journal of Geophysical Research, 2004, 109, .	3.3	47
25	Isotopic composition of stratospheric ozone. Journal of Geophysical Research, 2006, 111, .	3.3	45
26	Oxygen isotopic composition of carbon dioxide in the middle atmosphere. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 21-25.	7.1	45
27	Oxygen Isotope Exchange between O₂ and CO₂ over Hot Platinum: An Innovative Technique for Measuring Î”¹⁷O in CO₂. Analytical Chemistry, 2013, 85, 6894-6901.	6.5	44
28	COSMIC-RAY-MEDIATED FORMATION OF BENZENE ON THE SURFACE OF SATURNâ€™S MOON TITAN. Astrophysical Journal, 2010, 718, 1243-1251.	4.5	42
29	Enceladus: Cassini observations and implications for the search for life. Astronomy and Astrophysics, 2007, 463, 353-357.	5.1	41
30	Chemical dynamics of triacetylene formation and implications to the synthesis of polyynes in Titan's atmosphere. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 16078-16083.	7.1	39
31	CO2in the upper troposphere: Influence of stratosphere-troposphere exchange. Geophysical Research Letters, 2006, 33, .	4.0	37
32	Pathways to Oxygenâ€Bearing Molecules in the Interstellar Medium and in Planetary Atmospheres: Cyclopropenone (câ€C₃H₂O) and Propynal (HCCCHO). Astrophysical Journal, 2008, 686, 1493-1502.	4.5	37
33	A Born-Oppenheimer photolysis model of N2O fractionation. Geophysical Research Letters, 2003, 30, .	4.0	34
34	First Spitzer observations of Neptune: Detection of new hydrocarbons. Icarus, 2008, 197, 585-589.	2.5	31
35	A global database of water vapor isotopes measured with high temporal resolution infrared laser spectroscopy. Scientific Data, 2019, 6, 180302.	5.3	31
36	MEASUREMENTS OF ISOTOPE EFFECTS IN THE PHOTOIONIZATION OF N ₂ AND IMPLICATIONS FOR TITAN'S ATMOSPHERE. Astrophysical Journal Letters, 2011, 728, L32.	8.3	29

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37	Stable isotopic composition of near surface atmospheric water vapor and rainâ€“vapor interaction in Taipei, Taiwan. Journal of Hydrology, 2014, 519, 2091-2100.	5.4	29
38	Identification of Anthropogenic CO₂ Using Triple Oxygen and Clumped Isotopes. Environmental Science & Technology, 2016, 50, 11806-11814.	10.0	29
39	Atmosphere of Callisto. Journal of Geophysical Research, 2005, 110, .	3.3	28
40	Modeling the distribution of H₂O and HDO in the upper atmosphere of Venus. Journal of Geophysical Research, 2009, 114, .	3.3	28
41	Dust transport from nonâ€East Asian sources to the North Pacific. Geophysical Research Letters, 2012, 39, .	4.0	27
42	Oxygen anomaly in near surface carbon dioxide reveals deep stratospheric intrusion. Scientific Reports, 2015, 5, 11352.	3.3	27
43	Meridional Transport in the Stratosphere of Jupiter. Astrophysical Journal, 2005, 635, L177-L180.	4.5	25
44	Extraordinary isotopic fractionation in ozone photolysis. Geophysical Research Letters, 2005, 32, n/a-n/a.	4.0	25
45	CO₂ annual and semiannual cycles from multiple satellite retrievals and models. Earth and Space Science, 2016, 3, 78-87.	2.6	25
46	Impacts of SABER CO₂â€based eddy diffusion coefficients in the lower thermosphere on the ionosphere/thermosphere. Journal of Geophysical Research: Space Physics, 2016, 121, 12,080.	2.4	24
47	Oxygen isotope anomaly in tropospheric CO2 and implications for CO2 residence time in the atmosphere and gross primary productivity. Scientific Reports, 2017, 7, 13180.	3.3	24
48	A non-monotonic eddy diffusivity profile of Titan's atmosphere revealed by Cassini observations. Planetary and Space Science, 2014, 104, 48-58.	1.7	23
49	Global 3â€Ð Simulations of the Triple Oxygen Isotope Signature Î”¹⁷O in Atmospheric CO₂. Journal of Geophysical Research D: Atmospheres, 2019, 124, 8808-8836.	3.3	23
50	An improved CeO₂ method for highâ€precision measurements of ¹⁷O/¹⁶O ratios for atmospheric carbon dioxide. Rapid Communications in Mass Spectrometry, 2012, 26, 1909-1922.	1.5	22
51	An improved method of highâ€precision determination of Î”¹⁷O of CO₂ by catalyzed exchange with O₂ using hot platinum. Rapid Communications in Mass Spectrometry, 2016, 30, 119-131.	1.5	22
52	CO 2 semiannual oscillation in the middle troposphere and at the surface. Global Biogeochemical Cycles, 2012, 26, .	4.9	21
53	Simulation of upper tropospheric CO₂ from chemistry and transport models. Global Biogeochemical Cycles, 2008, 22, .	4.9	18
54	Shortâ€period solar cycle signals in the ionosphere observed by FORMOSATâ€3/COSMIC. Geophysical Research Letters, 2008, 35, .	4.0	18

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55	A CROSSED MOLECULAR BEAMS STUDY ON THE FORMATION OF THE EXOTIC CYANOETHYNYL RADICAL IN TITAN'S ATMOSPHERE. Astrophysical Journal, 2009, 701, 1797-1803.	4.5	18
56	Sources of the oxygen isotopic anomaly in atmospheric N₂O. Journal of Geophysical Research, 2007, 112, .	3.3	17
57	Midlatitude atmospheric OH response to the most recent 11-y solar cycle. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 2023-2028.	7.1	17
58	Ammonium deficiency caused by heterogeneous reactions during a super Asian dust episode. Journal of Geophysical Research D: Atmospheres, 2014, 119, 6803-6817.	3.3	17
59	Seasonal cycle of C¹⁶O¹⁶O, C¹⁶O¹⁷O, and C¹⁶O¹⁸O in the middle atmosphere: Implications for mesospheric dynamics and biogeochemical sources and sinks of CO₂. Journal of Geophysical Research, 2008, 113, .	3.3	16
60	Influence of El NiÃ±o on Midtropospheric CO2 from Atmospheric Infrared Sounder and Model. Journals of the Atmospheric Sciences, 2013, 70, 223-230.	1.7	16
61	Isotopic Fractionation of Nitrogen in Ammonia in the Troposphere of Jupiter. Astrophysical Journal, 2007, 657, L117-L120.	4.5	15
62	Signature of stratospheric air at the Tibetan Plateau. Geophysical Research Letters, 2008, 35, .	4.0	15
63	The influence of tropospheric biennial oscillation on mid-tropospheric CO₂. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	15
64	El NiÃ±oâ€“Southern Oscillation in Tropical and Midlatitude Column Ozone. Journals of the Atmospheric Sciences, 2011, 68, 1911-1921.	1.7	14
65	A new perspective of probing the level of pollution in the megacity Delhi affected by crop residue burning using the triple oxygen isotope technique in atmospheric CO2. Environmental Pollution, 2020, 263, 114542.	7.5	14
66	An insight into the western Pacific wintertime moisture sources using dual water vapor isotopes. Journal of Hydrology, 2017, 547, 111-123.	5.4	13
67	Triple Oxygen and Clumped Isotope Compositions of CO₂ in the Middle Troposphere. Earth and Space Science, 2019, 6, 1205-1219.	2.6	13
68	Spatiotemporal Variability of Oxygen Isotope Anomaly in near Surface Air CO2 over Urban, Semi-Urban and Ocean Areas in and around Taiwan. Aerosol and Air Quality Research, 2017, 17, 706-720.	2.1	13
69	Variations in triple isotope composition of dissolved oxygen and primary production in a subtropical reservoir. Biogeosciences, 2016, 13, 6683-6698.	3.3	12
70	Clumped isotopes in near-surface atmospheric CO₂ over land, coast and ocean in Taiwan and its vicinity. Biogeosciences, 2016, 13, 5297-5314.	3.3	12
71	The 11ÂYear Solar Cycle Response of the Equatorial Ionization Anomaly Observed by GPS Radio Occultation. Journal of Geophysical Research: Space Physics, 2018, 123, 848-861.	2.4	11
72	Impact of Amazonian Fires on Atmospheric CO₂. Geophysical Research Letters, 2021, 48, e2020GL091875.	4.0	11

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73	Evidence for O-atom exchange in the O(1D) + N2O reaction as the source of mass-independent isotopic fractionation in atmospheric N2O. Geophysical Research Letters, 2004, 31, .	4.0	10
74	Quantum chemical calculation on the potential energy surface of H2CO3 and its implication for martian chemistry. Icarus, 2011, 214, 228-235.	2.5	10
75	New insights into martian atmospheric chemistry. Icarus, 2014, 242, 97-104.	2.5	10
76	Clumped isotope composition of marbles from the Backbone Range of Taiwan. Terra Nova, 2016, 28, 265-270.	2.1	10
77	Isotopic homogenization and scrambling associated with oxygen isotopic exchange on hot platinum: studies on gas pairs (O₂, CO₂) and (CO, CO₂). RSC Advances, 2016, 6, 51296-51303.	3.6	10
78	Searching for Structural Variability in Sgr A*. Astronomische Nachrichten, 2003, 324, 383-389.	1.2	9
79	Transient Climate Response in Coupled Atmosphericâ€“Ocean General Circulation Models. Journals of the Atmospheric Sciences, 2013, 70, 1291-1296.	1.7	9
80	Stratospheric influence on the concentration and seasonal cycle of lower tropospheric ozone: Observation at Mount Hehuan, Taiwan. Journal of Geophysical Research D: Atmospheres, 2014, 119, 3527-3536.	3.3	9
81	Relic surface water (clay-pore water) input triggers arsenic release into the shallow groundwater of Bengal aquifers. Journal of Earth System Science, 2022, 131, 1.	1.3	9
82	Distribution of CO₂ in Western Pacific, Studied Using Isotope Data Made in Taiwan, OCOâ€2 Satellite Retrievals, and CarbonTracker Products. Earth and Space Science, 2018, 5, 827-842.	2.6	8
83	Stratospheric Incursion as a Source of Enhancement of the Isotopic Ratios of Atmospheric N₂O at Western Pacific. Earth and Space Science, 2020, 7, e2020EA001102.	2.6	8
84	Seasonal Variations of Solarâ€Induced Fluorescence, Precipitation, and Carbon Dioxide Over the Amazon. Earth and Space Science, 2022, 9, .	2.6	8
85	Impact of Climate Drift on Twenty-First-Century Projection in a Coupled Atmosphericâ€“Ocean General Circulation Model. Journals of the Atmospheric Sciences, 2013, 70, 3321-3327.	1.7	7
86	Investigation of Precipitation Variations over Wet and Dry Areas from Observation and Model. Advances in Meteorology, 2015, 2015, 1-9.	1.6	7
87	METHANE-NITROGEN BINARY NUCLEATION: A NEW MICROPHYSICAL MECHANISM FOR CLOUD FORMATION IN TITAN'S ATMOSPHERE. Astrophysical Journal, 2012, 747, 36.	4.5	6
88	Sulfur isotope analysis for representative regional background atmospheric aerosols collected at Mt. Lulin, Taiwan. Scientific Reports, 2019, 9, 19707.	3.3	6
89	Variable thermoregulation of Late Cretaceous dinosaurs inferred by clumped isotope analysis of fossilized eggshell carbonates. Heliyon, 2020, 6, e05265.	3.2	6
90	Oxidant generation in the ice under electron irradiation: Simulation and application to Europa. Icarus, 2022, 373, 114760.	2.5	6

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91	Enhanced stratospheric intrusion at Lulin Mountain, Taiwan inferred from beryllium-7 activity. Atmospheric Environment, 2022, 268, 118824.	4.1	6
92	Isotopic Fractionation in Photolysis of Ozone in the Hartley and Chappuis Bands. Earth and Space Science, 2019, 6, 752-773.	2.6	5
93	East Asian CO2 level change caused by Pacific Decadal Oscillation. Remote Sensing of Environment, 2021, 264, 112624.	11.0	5
94	Infrared Line Emission in the Interacting Region of Arp 244 (the Antennae): Colliding Molecular Cloud Complexes?. Astrophysical Journal, 2001, 549, L59-L62.	4.5	4
95	A new feature in the internal heavy isotope distribution in ozone. Journal of Chemical Physics, 2014, 141, 134301.	3.0	4
96	Utilization of Î”17O for nitrate dynamics in a subtropical freshwater reservoir. Science of the Total Environment, 2021, 753, 141836.	8.0	4
97	Kinetic mass-transfer calculation of water isotope fractionation due to cloud microphysics in a regional meteorological model. Atmospheric Chemistry and Physics, 2019, 19, 1753-1766.	4.9	3
98	Localâ€Time Variabilities of March Equinox Daytime SABER CO 2 in the Upper Mesosphere and Lower Thermosphere Region. Journal of Geophysical Research: Space Physics, 2020, 125, e2019JA027039.	2.4	3
99	Meteotsunamis produced by high frequency atmospheric pressure forcing. Terrestrial, Atmospheric and Oceanic Sciences, 2017, 28, 1033-1040.	0.6	3
100	Isotopic assessment of soil N2O emission from a sub-tropical agricultural soil under varying N-inputs. Science of the Total Environment, 2022, 827, 154311.	8.0	3
101	Reply to comment by RÃ¶ckmann and Kaiser on â€œEvidence for O-atom exchange in the O(1D) + N2O reaction as the source of mass-independent isotopic fractionation in atmospheric N2Oâ€• Geophysical Research Letters, 2005, 32, .	4.0	2
102	Solar Cycle Response of CO 2 Over the Austral Winter Mesosphere and Lower Thermosphere Region. Journal of Geophysical Research: Space Physics, 2018, 123, 7581-7597.	2.4	2
103	Role of Vehicular Catalytic Converter Temperature in Emission of Pollutants: An Assessment Based on Isotopic Analysis of CO₂ and N₂O. Environmental Science & Technology, 2021, 55, 4378-4388.	10.0	2
104	Near Surface CO2 Triple Oxygen Isotope Composition. Terrestrial, Atmospheric and Oceanic Sciences, 2016, 27, 099.	0.6	2
105	Atmospheric Effects on the Isotopic Composition of Ozone. Atmosphere, 2021, 12, 1673.	2.3	2
106	New constraints on biological production and mixing processes in the South China Sea from triple isotope composition of dissolved oxygen. Biogeosciences, 2022, 19, 2043-2058.	3.3	2
107	Exoplanet Atmospheres and Photochemistry. Proceedings of the International Astronomical Union, 2005, 1, 491.	0.0	1
108	Ab initio quantum chemical studies of isotopic fractionation during acid digestion reaction of dolomite for clumped isotope application. Rapid Communications in Mass Spectrometry, 2020, 34, e8926.	1.5	0

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109	Seasonal Variations of Chemical Species and Haze in Titan's Upper Atmosphere. Planetary Science Journal, 2022, 3, 130.	3.6	0