

# 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	Oxidant generation in the ice under electron irradiation: Simulation and application to Europa. Icarus, 2022, 373, 114760.	2.5	6
2	Enhanced stratospheric intrusion at Lulin Mountain, Taiwan inferred from beryllium-7 activity. Atmospheric Environment, 2022, 268, 118824.	4.1	6
3	Seasonal Variations of Solar-Induced Fluorescence, Precipitation, and Carbon Dioxide Over the Amazon. Earth and Space Science, 2022, 9, .	2.6	8
4	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
5	Isotopic assessment of soil N <sub>2</sub> O emission from a sub-tropical agricultural soil under varying N-inputs. Science of the Total Environment, 2022, 827, 154311.	8.0	3
6	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
7	Seasonal Variations of Chemical Species and Haze in Titan's Upper Atmosphere. Planetary Science Journal, 2022, 3, 130.	3.6	0
8	Utilization of <sup>17</sup> O for nitrate dynamics in a subtropical freshwater reservoir. Science of the Total Environment, 2021, 753, 141836.	8.0	4
9	Impact of Amazonian Fires on Atmospheric CO <sub>2</sub> . Geophysical Research Letters, 2021, 48, e2020GL091875.	4.0	11
10	Role of Vehicular Catalytic Converter Temperature in Emission of Pollutants: An Assessment Based on Isotopic Analysis of CO <sub>2</sub> and N <sub>2</sub> O. Environmental Science & Technology, 2021, 55, 4378-4388.	10.0	2
11	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
12	East Asian CO <sub>2</sub> level change caused by Pacific Decadal Oscillation. Remote Sensing of Environment, 2021, 264, 112624.	11.0	5
13	Atmospheric Effects on the Isotopic Composition of Ozone. Atmosphere, 2021, 12, 1673.	2.3	2
14	Variable thermoregulation of Late Cretaceous dinosaurs inferred by clumped isotope analysis of fossilized eggshell carbonates. Heliyon, 2020, 6, e05265.	3.2	6
15	Stratospheric Incursion as a Source of Enhancement of the Isotopic Ratios of Atmospheric N <sub>2</sub> O at Western Pacific. Earth and Space Science, 2020, 7, e2020EA001102.	2.6	8
16	<i>Ab initio</i> 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
17	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 CO <sub>2</sub> . Environmental Pollution, 2020, 263, 114542.	7.5	14
18	Local-Time Variabilities of March Equinox Daytime SABER CO <sub>2</sub> in the Upper Mesosphere and Lower Thermosphere Region. Journal of Geophysical Research: Space Physics, 2020, 125, e2019JA027039.	2.4	3

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19	Isotopic Fractionation in Photolysis of Ozone in the Hartley and Chappuis Bands. <i>Earth and Space Science</i> , 2019, 6, 752-773.	2.6	5
20	Global 3D Simulations of the Triple Oxygen Isotope Signature $\delta^{17}\text{O}$ in Atmospheric $\text{CO}_2$ . <i>Journal of Geophysical Research D: Atmospheres</i> , 2019, 124, 8808-8836.	3.3	23
21	Triple Oxygen and Clumped Isotope Compositions of $\text{CO}_2$ in the Middle Troposphere. <i>Earth and Space Science</i> , 2019, 6, 1205-1219.	2.6	13
22	Kinetic mass-transfer calculation of water isotope fractionation due to cloud microphysics in a regional meteorological model. <i>Atmospheric Chemistry and Physics</i> , 2019, 19, 1753-1766.	4.9	3
23	Sulfur isotope analysis for representative regional background atmospheric aerosols collected at Mt. Lulin, Taiwan. <i>Scientific Reports</i> , 2019, 9, 19707.	3.3	6
24	A global database of water vapor isotopes measured with high temporal resolution infrared laser spectroscopy. <i>Scientific Data</i> , 2019, 6, 180302.	5.3	31
25	The 11-Year Solar Cycle Response of the Equatorial Ionization Anomaly Observed by GPS Radio Occultation. <i>Journal of Geophysical Research: Space Physics</i> , 2018, 123, 848-861.	2.4	11
26	Distribution of $\text{CO}_2$ in Western Pacific, Studied Using Isotope Data Made in Taiwan, $\text{OCO}_2$ Satellite Retrievals, and CarbonTracker Products. <i>Earth and Space Science</i> , 2018, 5, 827-842.	2.6	8
27	Solar Cycle Response of $\text{CO}_2$ Over the Austral Winter Mesosphere and Lower Thermosphere Region. <i>Journal of Geophysical Research: Space Physics</i> , 2018, 123, 7581-7597.	2.4	2
28	An insight into the western Pacific wintertime moisture sources using dual water vapor isotopes. <i>Journal of Hydrology</i> , 2017, 547, 111-123.	5.4	13
29	Isotopic ratios of nitrate in aerosol samples from Mt. Lulin, a high-altitude station in Central Taiwan. <i>Atmospheric Environment</i> , 2017, 154, 53-69.	4.1	55
30	Oxygen isotope anomaly in tropospheric $\text{CO}_2$ and implications for $\text{CO}_2$ residence time in the atmosphere and gross primary productivity. <i>Scientific Reports</i> , 2017, 7, 13180.	3.3	24
31	Constraints on the microphysics of Pluto's photochemical haze from New Horizons observations. <i>Icarus</i> , 2017, 287, 116-123.	2.5	73
32	The photochemistry of Pluto's atmosphere as illuminated by New Horizons. <i>Icarus</i> , 2017, 287, 110-115.	2.5	75
33	Meteotsunamis produced by high frequency atmospheric pressure forcing. <i>Terrestrial, Atmospheric and Oceanic Sciences</i> , 2017, 28, 1033-1040.	0.6	3
34	Spatiotemporal Variability of Oxygen Isotope Anomaly in near Surface Air $\text{CO}_2$ over Urban, Semi-Urban and Ocean Areas in and around Taiwan. <i>Aerosol and Air Quality Research</i> , 2017, 17, 706-720.	2.1	13
35	Variations in triple isotope composition of dissolved oxygen and primary production in a subtropical reservoir. <i>Biogeosciences</i> , 2016, 13, 6683-6698.	3.3	12
36	Clumped isotopes in near-surface atmospheric $\text{CO}_2$ over land, coast and ocean in Taiwan and its vicinity. <i>Biogeosciences</i> , 2016, 13, 5297-5314.	3.3	12

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37	Clumped isotope composition of marbles from the Backbone Range of Taiwan. <i>Terra Nova</i> , 2016, 28, 265-270.	2.1	10
38	An improved method of high-precision determination of $\delta^{17}\text{O}$ of $\text{CO}_2$ by catalyzed exchange with $\text{O}_2$ using hot platinum. <i>Rapid Communications in Mass Spectrometry</i> , 2016, 30, 119-131.	1.5	22
39	Isotopic homogenization and scrambling associated with oxygen isotopic exchange on hot platinum: studies on gas pairs ( $\text{O}_2$ , $\text{CO}_2$ ) and ( $\text{CO}$ , $\text{CO}_2$ ). <i>RSC Advances</i> , 2016, 6, 51296-51303.	3.6	10
40	Identification of Anthropogenic $\text{CO}_2$ Using Triple Oxygen and Clumped Isotopes. <i>Environmental Science &amp; Technology</i> , 2016, 50, 11806-11814.	10.0	29
41	Impacts of SABER $\text{CO}_2$ -based eddy diffusion coefficients in the lower thermosphere on the ionosphere/thermosphere. <i>Journal of Geophysical Research: Space Physics</i> , 2016, 121, 12,080.	2.4	24
42	$\text{CO}_2$ annual and semiannual cycles from multiple satellite retrievals and models. <i>Earth and Space Science</i> , 2016, 3, 78-87.	2.6	25
43	Development of a multicopter-carried whole air sampling apparatus and its applications in environmental studies. <i>Chemosphere</i> , 2016, 144, 484-492.	8.2	84
44	Near Surface $\text{CO}_2$ Triple Oxygen Isotope Composition. <i>Terrestrial, Atmospheric and Oceanic Sciences</i> , 2016, 27, 099.	0.6	2
45	Oxygen anomaly in near surface carbon dioxide reveals deep stratospheric intrusion. <i>Scientific Reports</i> , 2015, 5, 11352.	3.3	27
46	Investigation of Precipitation Variations over Wet and Dry Areas from Observation and Model. <i>Advances in Meteorology</i> , 2015, 2015, 1-9.	1.6	7
47	Stable isotopic composition of near surface atmospheric water vapor and rain-vapor interaction in Taipei, Taiwan. <i>Journal of Hydrology</i> , 2014, 519, 2091-2100.	5.4	29
48	A new feature in the internal heavy isotope distribution in ozone. <i>Journal of Chemical Physics</i> , 2014, 141, 134301.	3.0	4
49	A non-monotonic eddy diffusivity profile of Titan's atmosphere revealed by Cassini observations. <i>Planetary and Space Science</i> , 2014, 104, 48-58.	1.7	23
50	New insights into martian atmospheric chemistry. <i>Icarus</i> , 2014, 242, 97-104.	2.5	10
51	Interlaboratory assessment of nitrous oxide isotopomer analysis by isotope ratio mass spectrometry and laser spectroscopy: current status and perspectives. <i>Rapid Communications in Mass Spectrometry</i> , 2014, 28, 1995-2007.	1.5	89
52	Stratospheric influence on the concentration and seasonal cycle of lower tropospheric ozone: Observation at Mount Hehuan, Taiwan. <i>Journal of Geophysical Research D: Atmospheres</i> , 2014, 119, 3527-3536.	3.3	9
53	Ammonium deficiency caused by heterogeneous reactions during a super Asian dust episode. <i>Journal of Geophysical Research D: Atmospheres</i> , 2014, 119, 6803-6817.	3.3	17
54	Oxygen Isotope Exchange between $\text{O}_2$ and $\text{CO}_2$ over Hot Platinum: An Innovative Technique for Measuring $\delta^{17}\text{O}$ in $\text{CO}_2$ . <i>Analytical Chemistry</i> , 2013, 85, 6894-6901.	6.5	44

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55	Influence of El Niño on Midtropospheric CO <sub>2</sub> from Atmospheric Infrared Sounder and Model. <i>Journals of the Atmospheric Sciences</i> , 2013, 70, 223-230.	1.7	16
56	Transient Climate Response in Coupled Atmospheric–Ocean General Circulation Models. <i>Journals of the Atmospheric Sciences</i> , 2013, 70, 1291-1296.	1.7	9
57	Midlatitude atmospheric OH response to the most recent 11-y solar cycle. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 2023-2028.	7.1	17
58	Impact of Climate Drift on Twenty-First-Century Projection in a Coupled Atmospheric–Ocean General Circulation Model. <i>Journals of the Atmospheric Sciences</i> , 2013, 70, 3321-3327.	1.7	7
59	METHANE-NITROGEN BINARY NUCLEATION: A NEW MICROPHYSICAL MECHANISM FOR CLOUD FORMATION IN TITAN'S ATMOSPHERE. <i>Astrophysical Journal</i> , 2012, 747, 36.	4.5	6
60	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. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	67
61	CO <sub>2</sub> semiannual oscillation in the middle troposphere and at the surface. <i>Global Biogeochemical Cycles</i> , 2012, 26, .	4.9	21
62	Dust transport from non–East Asian sources to the North Pacific. <i>Geophysical Research Letters</i> , 2012, 39, .	4.0	27
63	An improved CeO <sub>2</sub> method for high-precision measurements of <sup>17</sup> O/ <sup>16</sup> O ratios for atmospheric carbon dioxide. <i>Rapid Communications in Mass Spectrometry</i> , 2012, 26, 1909-1922.	1.5	22
64	Sulfur chemistry in the middle atmosphere of Venus. <i>Icarus</i> , 2012, 217, 714-739.	2.5	176
65	The influence of tropospheric biennial oscillation on mid-tropospheric CO <sub>2</sub> . <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	4.0	15
66	MEASUREMENTS OF ISOTOPE EFFECTS IN THE PHOTOIONIZATION OF N <sub>2</sub> AND IMPLICATIONS FOR TITAN'S ATMOSPHERE. <i>Astrophysical Journal Letters</i> , 2011, 728, L32.	8.3	29
67	Quantum chemical calculation on the potential energy surface of H <sub>2</sub> CO <sub>3</sub> and its implication for martian chemistry. <i>Icarus</i> , 2011, 214, 228-235.	2.5	10
68	El Niño–Southern Oscillation in Tropical and Midlatitude Column Ozone. <i>Journals of the Atmospheric Sciences</i> , 2011, 68, 1911-1921.	1.7	14
69	HIGH-TEMPERATURE PHOTOCHEMISTRY IN THE ATMOSPHERE OF HD 189733b. <i>Astrophysical Journal</i> , 2010, 717, 496-502.	4.5	91
70	COSMIC-RAY-MEDIATED FORMATION OF BENZENE ON THE SURFACE OF SATURN'S MOON TITAN. <i>Astrophysical Journal</i> , 2010, 718, 1243-1251.	4.5	42
71	Water in the atmosphere of HD 209458b from 3.6-8 μm IRAC photometric observations in primary transit. <i>Monthly Notices of the Royal Astronomical Society</i> , 2010, 409, 963-974.	4.4	99
72	Photolysis of sulphuric acid as the source of sulphur oxides in the mesosphere of Venus. <i>Nature Geoscience</i> , 2010, 3, 834-837.	12.9	75

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73	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
74	Evidence for carbonyl sulfide (OCS) conversion to CO in the lower atmosphere of Venus. Journal of Geophysical Research, 2009, 114, .	3.3	56
75	Modeling the distribution of H <sub>2</sub> O and HDO in the upper atmosphere of Venus. Journal of Geophysical Research, 2009, 114, .	3.3	28
76	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
77	First Spitzer observations of Neptune: Detection of new hydrocarbons. Icarus, 2008, 197, 585-589.	2.5	31
78	Habitability of Enceladus: Planetary Conditions for Life. Origins of Life and Evolution of Biospheres, 2008, 38, 355-369.	1.9	67
79	Simulation of upper tropospheric CO <sub>2</sub> from chemistry and transport models. Global Biogeochemical Cycles, 2008, 22, .	4.9	18
80	Seasonal cycle of C <sup>16</sup> O <sup>16</sup> O, C <sup>16</sup> O <sup>17</sup> O, and C <sup>16</sup> O <sup>18</sup> O in the middle atmosphere: Implications for mesospheric dynamics and biogeochemical sources and sinks of CO <sub>2</sub> . Journal of Geophysical Research, 2008, 113, .	3.3	16
81	Short-period solar cycle signals in the ionosphere observed by FORMOSAT-3/COSMIC. Geophysical Research Letters, 2008, 35, .	4.0	18
82	Signature of stratospheric air at the Tibetan Plateau. Geophysical Research Letters, 2008, 35, .	4.0	15
83	Pathways to Oxygen-bearing Molecules in the Interstellar Medium and in Planetary Atmospheres: Cyclopropanone (C <sub>3</sub> H <sub>2</sub> O) and Propynal (HCCCHO). Astrophysical Journal, 2008, 686, 1493-1502.	4.5	37
84	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
85	Photolytically Generated Aerosols in the Mesosphere and Thermosphere of Titan. Astrophysical Journal, 2007, 661, L199-L202.	4.5	106
86	Infrared Transmission Spectra for Extrasolar Giant Planets. Astrophysical Journal, 2007, 654, L99-L102.	4.5	84
87	Isotopic Fractionation of Nitrogen in Ammonia in the Troposphere of Jupiter. Astrophysical Journal, 2007, 657, L117-L120.	4.5	15
88	Source of Nitrogen Isotope Anomaly in HCN in the Atmosphere of Titan. Astrophysical Journal, 2007, 664, L115-L118.	4.5	119
89	Sources of the oxygen isotopic anomaly in atmospheric N <sub>2</sub> O. Journal of Geophysical Research, 2007, 112, .	3.3	17
90	Enceladus: Cassini observations and implications for the search for life. Astronomy and Astrophysics, 2007, 463, 353-357.	5.1	41

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91	Water vapour in the atmosphere of a transiting extrasolar planet. <i>Nature</i> , 2007, 448, 169-171.	27.8	452
92	CO <sub>2</sub> in the upper troposphere: Influence of stratosphere-troposphere exchange. <i>Geophysical Research Letters</i> , 2006, 33, .	4.0	37
93	Absorption Cross Sections of NH <sub>3</sub> , NH <sub>2</sub> D, NHD <sub>2</sub> , and ND <sub>3</sub> in the Spectral Range 140–220 nm and Implications for Planetary Isotopic Fractionation. <i>Astrophysical Journal</i> , 2006, 647, 1535-1542.	4.5	65
94	Isotopic composition of stratospheric ozone. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	45
95	Production of hydrogen peroxide in the atmosphere of a Snowball Earth and the origin of oxygenic photosynthesis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006, 103, 18896-18899.	7.1	98
96	Meridional Transport in the Stratosphere of Jupiter. <i>Astrophysical Journal</i> , 2005, 635, L177-L180.	4.5	25
97	Exoplanet Atmospheres and Photochemistry. <i>Proceedings of the International Astronomical Union</i> , 2005, 1, 491.	0.0	1
98	A size of $\sim 1/4$ AU for the radio source Sgr A* at the centre of the Milky Way. <i>Nature</i> , 2005, 438, 62-64.	27.8	202
99	Atmosphere of Callisto. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	28
100	Reply to comment by R. Rickmann and Kaiser on "Evidence for O-atom exchange in the O(1D) + N <sub>2</sub> O reaction as the source of mass-independent isotopic fractionation in atmospheric N <sub>2</sub> O". <i>Geophysical Research Letters</i> , 2005, 32, .	4.0	2
101	Extraordinary isotopic fractionation in ozone photolysis. <i>Geophysical Research Letters</i> , 2005, 32, n/a-n/a.	4.0	25
102	Isotopic fractionation of nitrous oxide in the stratosphere: Comparison between model and observations. <i>Journal of Geophysical Research</i> , 2004, 109, n/a-n/a.	3.3	54
103	Evidence for O-atom exchange in the O(1D) + N <sub>2</sub> O reaction as the source of mass-independent isotopic fractionation in atmospheric N <sub>2</sub> O. <i>Geophysical Research Letters</i> , 2004, 31, .	4.0	10
104	A semianalytic model for photo-induced isotopic fractionation in simple molecules. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	47
105	On the Insignificance of Photochemical Hydrocarbon Aerosols in the Atmospheres of Close-in Extrasolar Giant Planets. <i>Astrophysical Journal</i> , 2004, 605, L61-L64.	4.5	68
106	A Born-Oppenheimer photolysis model of N <sub>2</sub> O fractionation. <i>Geophysical Research Letters</i> , 2003, 30, .	4.0	34
107	Searching for Structural Variability in Sgr A*. <i>Astronomische Nachrichten</i> , 2003, 324, 383-389.	1.2	9
108	Source of Atomic Hydrogen in the Atmosphere of HD 209458b. <i>Astrophysical Journal</i> , 2003, 596, L247-L250.	4.5	94

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109	Infrared Line Emission in the Interacting Region of Arp 244 (the Antennae): Colliding Molecular Cloud Complexes?. <i>Astrophysical Journal</i> , 2001, 549, L59-L62.	4.5	4