

Xinzhao Chu

List of Publications by Year in descending order

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83
papers

2,370
citations

147566

31
h-index

233125

45
g-index

83
all docs

83
docs citations

83
times ranked

1195
citing authors

#	ARTICLE	IF	CITATIONS
1	NRLMSIS 2.0: A Whole-Air Atmosphere Empirical Model of Temperature and Neutral Species Densities. <i>Earth and Space Science</i> , 2021, 8, e2020EA001321.	1.1	145
2	The Excitation of Secondary Gravity Waves From Local Body Forces: Theory and Observation. <i>Journal of Geophysical Research D: Atmospheres</i> , 2018, 123, 9296-9325.	1.2	85
3	Lidar observations of neutral Fe layers and fast gravity waves in the thermosphere (110-155 km) at McMurdo (77.8°S, 166.7°E), Antarctica. <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	1.5	84
4	Fe Boltzmann temperature lidar: design, error analysis, and initial results at the North and South Poles. <i>Applied Optics</i> , 2002, 41, 4400.	2.1	77
5	Lidar studies of interannual, seasonal, and diurnal variations of polar mesospheric clouds at the South Pole. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	69
6	Seasonal variations of the Na and Fe layers at the South Pole and their implications for the chemistry and general circulation of the polar mesosphere. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	69
7	Removal of Meteoric Iron on Polar Mesospheric Clouds. <i>Science</i> , 2004, 304, 426-428.	6.0	67
8	Gravity wave variations during the 2009 stratospheric sudden warming as revealed by ECMWF and observations. <i>Geophysical Research Letters</i> , 2010, 37, .	1.5	62
9	Comparison of meteor radar and Na Doppler lidar measurements of winds in the mesopause region above Maui, Hawaii. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	59
10	Inertia-gravity waves in Antarctica: A case study using simultaneous lidar and radar measurements at McMurdo/Scott Base (77.8°S, 166.7°E). <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 2794-2808.	1.2	58
11	Lidar observations of persistent gravity waves with periods of 3-10 h in the Antarctic middle and upper atmosphere at McMurdo (77.83°S, 166.67°E). <i>Journal of Geophysical Research: Space Physics</i> , 2016, 121, 1483-1502.	0.8	57
12	Stratospheric gravity wave characteristics and seasonal variations observed by lidar at the South Pole and Rothera, Antarctica. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	55
13	First lidar observations of middle atmosphere temperatures, Fe densities, and polar mesospheric clouds over the north and south poles. <i>Geophysical Research Letters</i> , 2001, 28, 1199-1202.	1.5	52
14	Polar mesospheric clouds observed by an iron Boltzmann lidar at Rothera (67.5°S, 68.0°W), Antarctica from 2002 to 2005: Properties and implications. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	48
15	Lidar observations of stratospheric gravity waves from 2011 to 2015 at McMurdo (77.84°S, 166.69°E), Antarctica: 1. Vertical wavelengths, periods, and frequency and vertical wave number spectra. <i>Journal of Geophysical Research D: Atmospheres</i> , 2017, 122, 5041-5062.	1.2	48
16	Antarctic mesospheric clouds formed from space shuttle exhaust. <i>Geophysical Research Letters</i> , 2005, 32, .	1.5	46
17	Resonance Fluorescence Lidar for Measurements of the Middle and Upper Atmosphere. <i>Optical Science and Engineering</i> , 2005, , 179-432.	0.1	46
18	Comparison of simultaneous Na lidar and mesospheric nightglow temperature measurements and the effects of tides on the emission layer heights. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	45

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19	Vertical evolution of potential energy density and vertical wave number spectrum of Antarctic gravity waves from 35 to 105 km at McMurdo (77.8°S, 166.7°E). <i>Journal of Geophysical Research D: Atmospheres</i> , 2015, 120, 2719-2737.	1.2	41
20	Lidar observations of elevated temperatures in bright chemiluminescent meteor trails during the 1998 Leonid Shower. <i>Geophysical Research Letters</i> , 2000, 27, 1815-1818.	1.5	40
21	Responses of mesosphere and lower thermosphere temperatures to gravity wave forcing during stratospheric sudden warming. <i>Geophysical Research Letters</i> , 2010, 37, .	1.5	39
22	Observation of a thermospheric descending layer of neutral K over Arecibo. <i>Journal of Atmospheric and Solar-Terrestrial Physics</i> , 2013, 104, 253-259.	0.6	39
23	Validation of SABER v2.0 Operational Temperature Data With Ground-Based Lidars in the Mesosphere-Lower Thermosphere Region (75-105 km). <i>Journal of Geophysical Research D: Atmospheres</i> , 2018, 123, 9916-9934.	1.2	39
24	Lidar observations of thermospheric Na layers up to 170 km with a descending tidal phase at Lijiang (26.7°N, 100.0°E), China. <i>Journal of Geophysical Research: Space Physics</i> , 2015, 120, 9213-9220.	0.8	38
25	First observations of long-lived meteor trains with resonance lidar and other optical instruments. <i>Geophysical Research Letters</i> , 2000, 27, 1811-1814.	1.5	37
26	Nocturnal temperature structure in the mesopause region over the Arecibo Observatory (18.35°N), Tj ETQq0 0 0 rgBT /Overlock 10 Tf	3.3	37
27	Lidar observations of polar mesospheric clouds at South Pole: Diurnal variations. <i>Geophysical Research Letters</i> , 2001, 28, 1937-1940.	1.5	36
28	Na double-edge magneto-optic filter for Na lidar profiling of wind and temperature in the lower atmosphere. <i>Optics Letters</i> , 2009, 34, 199.	1.7	36
29	Two-dimensional Morlet wavelet transform and its application to wave recognition methodology of automatically extracting two-dimensional wave packets from lidar observations in Antarctica. <i>Journal of Atmospheric and Solar-Terrestrial Physics</i> , 2017, 162, 28-47.	0.6	34
30	Formation mechanisms of neutral Fe layers in the thermosphere at Antarctica studied with a thermosphere-ionosphere Fe/Fe ⁺ (TIFe) model. <i>Journal of Geophysical Research: Space Physics</i> , 2017, 122, 6812-6848.	0.8	34
31	Lidar Observations of Stratospheric Gravity Waves From 2011 to 2015 at McMurdo (77.84°S, 166.69°E), Antarctica: 2. Potential Energy Densities, Lognormal Distributions, and Seasonal Variations. <i>Journal of Geophysical Research D: Atmospheres</i> , 2018, 123, 7910-7934.	1.2	33
32	Nocturnal thermal structure of the mesosphere and lower thermosphere region at Maui, Hawaii (20.7°N), and Starfire Optical Range, New Mexico (35°N). <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	32
33	Characteristics of Fe ablation trails observed during the 1998 Leonid Meteor Shower. <i>Geophysical Research Letters</i> , 2000, 27, 1807-1810.	1.5	31
34	Measurements of the vertical fluxes of atomic Fe and Na at the mesopause: Implications for the velocity of cosmic dust entering the atmosphere. <i>Geophysical Research Letters</i> , 2015, 42, 169-175.	1.5	31
35	First lidar observations of polar mesospheric clouds and Fe temperatures at McMurdo (77.8°S), Tj ETQq1 1 0.784314 rgBT /Overlock 1	1.5	30
36	High-efficiency receiver architecture for resonance-fluorescence and Doppler lidars. <i>Applied Optics</i> , 2015, 54, 3173.	2.1	30

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37	A thermospheric Na layer event observed up to 140 km over Syowa Station (69.0°S, 39.6°E) in Antarctica. <i>Geophysical Research Letters</i> , 2015, 42, 3647-3653.	1.5	28
38	A coordinated study of mesoscale gravity waves propagating from Logan to Boulder with CRRL Na Doppler lidars and temperature mapper. <i>Journal of Geophysical Research D: Atmospheres</i> , 2015, 120, 10,006.	1.2	28
39	Zonal mean global teleconnection from 15 to 110 km derived from SABER and WACCM. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	27
40	Lidar observations of polar mesospheric clouds at Rothera, Antarctica (67.5°S, 68.0°W). <i>Geophysical Research Letters</i> , 2004, 31, .	1.5	26
41	Eastward propagating planetary waves with periods of 1–5 days in the winter Antarctic stratosphere as revealed by MERRA and lidar. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 9565-9578.	1.2	26
42	Observations of persistent Leonid meteor trails: 1. Advection of the “Diamond Ring”. <i>Journal of Geophysical Research</i> , 2001, 106, 21517-21524.	3.3	25
43	Observations of persistent Leonid meteor trails: 2. Photometry and numerical modeling. <i>Journal of Geophysical Research</i> , 2001, 106, 21525-21541.	3.3	25
44	Seasonal variations of the mesospheric Fe layer at Rothera, Antarctica (67.5°S, 68.0°W). <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	25
45	Responses of polar mesospheric cloud brightness to stratospheric gravity waves at the South Pole and Rothera, Antarctica. <i>Journal of Atmospheric and Solar-Terrestrial Physics</i> , 2009, 71, 434-445.	0.6	24
46	Field demonstration of simultaneous wind and temperature measurements from 5 to 50 km with a Na double-edge magneto-optic filter in a multi-frequency Doppler lidar. <i>Optics Letters</i> , 2009, 34, 1552.	1.7	23
47	Role of gravity waves in the spatial and temporal variability of stratospheric temperature measured by COSMIC/FORMOSAT-3 and Rayleigh lidar observations. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	22
48	Winter temperature tides from 30 to 110 km at McMurdo (77.8°S, 166.7°E), Antarctica: Lidar observations and comparisons with WAM. <i>Journal of Geophysical Research D: Atmospheres</i> , 2014, 119, 2846-2863.	1.2	21
49	A reconfigurable all-fiber polarization-diversity coherent Doppler lidar: principles and numerical simulations. <i>Applied Optics</i> , 2015, 54, 8999.	2.1	21
50	Lidar observations of polar mesospheric clouds at South Pole: Seasonal variations. <i>Geophysical Research Letters</i> , 2001, 28, 1203-1206.	1.5	20
51	Diurnal variations of the Fe layer in the mesosphere and lower thermosphere: Four season variability and solar effects on the layer bottomside at McMurdo (77.8°S, 166.7°E), Antarctica. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	19
52	First Simultaneous Lidar Observations of Thermosphere-Ionosphere Fe and Na (TIFe and TINa) Layers at McMurdo (77.84°S, 166.67°E), Antarctica With Concurrent Measurements of Aurora Activity, Enhanced Ionization Layers, and Converging Electric Field. <i>Geophysical Research Letters</i> , 2020, 47, e2020GL090181.	1.5	19
53	Statistical characterization of high-to-medium frequency mesoscale gravity waves by lidar-measured vertical winds and temperatures in the MLT. <i>Journal of Atmospheric and Solar-Terrestrial Physics</i> , 2017, 162, 3-15.	0.6	18
54	Longitude variations of the solar semidiurnal tides in the mesosphere and lower thermosphere at low latitudes observed from ground and space. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	17

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55	Simultaneous, common-volume lidar observations and theoretical studies of correlations among Fe/Na layers and temperatures in the mesosphere and lower thermosphere at Boulder Table Mountain (40°N, 105°W), Colorado. <i>Journal of Geophysical Research D: Atmospheres</i> , 2013, 118, 8748-8759.	1.2	15
56	First Observations of Short-Period Eastward Propagating Planetary Waves From the Stratosphere to the Lower Thermosphere (110 km) in Winter Antarctica. <i>Geophysical Research Letters</i> , 2017, 44, 10,744.	1.5	14
57	Iodine-filter-based mobile Doppler lidar to make continuous and full-azimuth-scanned wind measurements: data acquisition and analysis system, data retrieval methods, and error analysis. <i>Applied Optics</i> , 2010, 49, 6960.	2.1	13
58	Statistics of sporadic iron layers and relation to atmospheric dynamics. <i>Journal of Atmospheric and Solar-Terrestrial Physics</i> , 2006, 68, 102-113.	0.6	11
59	Mid-Latitude Thermosphere-Ionosphere Na (TINa) Layers Observed With High-Sensitivity Na Doppler Lidar Over Boulder (40.13°N, 105.24°W). <i>Geophysical Research Letters</i> , 2021, 48, e2021GL093729.	1.5	11
60	From Antarctica Lidar Discoveries to Oasis Exploration. <i>EPJ Web of Conferences</i> , 2016, 119, 12001.	0.1	9
61	Importance of Regional-Scale Auroral Precipitation and Electrical Field Variability to the Storm-Time Thermospheric Temperature Enhancement and Inversion Layer (TTEIL) in the Antarctic E Region. <i>Journal of Geophysical Research: Space Physics</i> , 2020, 125, e2020JA028224.	0.8	9
62	Observations of persistent Leonid meteor trails 3. The "Glowworm". <i>Journal of Geophysical Research</i> , 2002, 107, SIA 5-1-SIA 5-10.	3.3	8
63	Lidar and CTIPe model studies of the fast amplitude growth with altitude of the diurnal temperature "tides" in the Antarctic winter lower thermosphere and dependence on geomagnetic activity. <i>Geophysical Research Letters</i> , 2015, 42, 697-704.	1.5	8
64	Shifts of the 3D - 4P transitions in different isotopes of positive calcium ions. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 1997, 30, L677-L681.	0.6	7
65	Quasi-Biennial Oscillation of Short-Period Planetary Waves and Polar Night Jet in Winter Antarctica Observed in SABER and MERRA-2 and Mechanism Study With a Quasi-Geostrophic Model. <i>Geophysical Research Letters</i> , 2019, 46, 13526-13534.	1.5	7
66	Eliminating photon noise biases in the computation of second-order statistics of lidar temperature, wind, and species measurements. <i>Applied Optics</i> , 2020, 59, 8259.	0.9	7
67	High frequency atmospheric gravity-wave properties using Fe-lidar and OH-imager observations. <i>Geophysical Research Letters</i> , 2005, 32, .	1.5	6
68	Investigation of a field-widened Mach-Zehnder receiver to extend Fe Doppler lidar wind measurements from the thermosphere to the ground. <i>Applied Optics</i> , 2016, 55, 1366.	2.1	6
69	First Lidar Observations of Quasi-Biennial Oscillation-Induced Interannual Variations of Gravity Wave Potential Energy Density at McMurdo via a Modulation of the Antarctic Polar Vortex. <i>Journal of Geophysical Research D: Atmospheres</i> , 2020, 125, e2020JD032866.	1.2	6
70	Dynamic Drivers of TlFe Diurnal Cycle in Antarctica. <i>EPJ Web of Conferences</i> , 2020, 237, 04002.	0.1	2
71	Comparison of Three Methodologies for Removal of Random-Noise-Induced Biases From Second-Order Statistical Parameters of Lidar and Radar Measurements. <i>Earth and Space Science</i> , 2022, 9, .	1.1	2
72	Vertical Transport of Sensible Heat and Meteoric Na by the Complete Temporal Spectrum of Gravity Waves in the MLT Above McMurdo (77.84°S, 166.67°E), Antarctica. <i>Journal of Geophysical Research D: Atmospheres</i> , 0, , .	1.2	2

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73	High spectral resolution test and calibration of an ultra-narrowband Faraday anomalous dispersion optical filter for use in daytime mesospheric resonance Doppler lidar. Journal of Atmospheric and Solar-Terrestrial Physics, 2012, 80, 187-194.	0.6	1
74	Antarctic Wave Dynamics Mystery Discovered by Lidar, Radar and Imager. EPJ Web of Conferences, 2016, 119, 13004.	0.1	1
75	Exploration of Whole Atmosphere Lidar: Mach-zehnder Receiver to Extend Fe Doppler Lidar Wind Measurements from the Thermosphere to the Ground. EPJ Web of Conferences, 2016, 119, 12004.	0.1	1
76	Winter Temperature and Tidal Structures from 2011 to 2014 at McMurdo Station: Observations from Fe Boltzmann Temperature and Rayleigh Lidar. EPJ Web of Conferences, 2016, 119, 12003.	0.1	1
77	Pole-to-pole: lidar observations of middle and upper atmosphere temperature and polar mesospheric clouds over the North and South Poles. , 2003, , .		0
78	Annual mesospheric midnight winds observed with a lidar at Starfire Optical Range, New Mexico. , 2003, 4893, 245.		0
79	Polar mesospheric clouds at the South Pole. , 2003, 4893, 504.		0
80	Simulation of Echoâ€œPhoton Counts of a Sodium Doppler Lidar and Retrievals of Atmospheric Parameters. Chinese Journal of Geophysics, 2010, 53, 519-528.	0.2	0
81	Low-latitude thermal semidiurnal tide: longitudinal and seasonal variations based on ground-based measurements from Arecibo and Maui, space-based measurements by SABER, and modeling with GSWM-02. , 2010, , .		0
82	Empirical Determination of Optimal Parameters for Sodium Double-Edge Magneto-Optic Filters. EPJ Web of Conferences, 2016, 119, 17012.	0.1	0
83	Simultaneous Observations of Mesoscale Gravity Waves Over the Central US with CRRL Na Doppler Lidars and USU Temperature Mapper. EPJ Web of Conferences, 2016, 119, 13003.	0.1	0