

Alexander S Medvedev

List of Publications by Year in descending order

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82
papers

3,830
citations

101543

36
h-index

128289

60
g-index

92
all docs

92
docs citations

92
times ranked

2731
citing authors

#	ARTICLE	IF	CITATIONS
1	A chemical survey of exoplanets with ARIEL. <i>Experimental Astronomy</i> , 2018, 46, 135-209.	3.7	249
2	Loss of the Martian atmosphere to space: Present-day loss rates determined from MAVEN observations and integrated loss through time. <i>Icarus</i> , 2018, 315, 146-157.	2.5	216
3	Internal wave coupling processes in Earth's atmosphere. <i>Advances in Space Research</i> , 2015, 55, 983-1003.	2.6	192
4	Ozone climatology using interactive chemistry: Results from the Canadian Middle Atmosphere Model. <i>Journal of Geophysical Research</i> , 2000, 105, 26475-26491.	3.3	162
5	Parameterization of the effects of vertically propagating gravity waves for thermosphere general circulation models: Sensitivity study. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	157
6	Vertical evolution of gravity wave spectra and the parameterization of associated wave drag. <i>Journal of Geophysical Research</i> , 1995, 100, 25841.	3.3	119
7	Modeling the effects of gravity wave momentum deposition on the general circulation above the turbopause. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	119
8	The Atmospheric Chemistry Suite (ACS) of Three Spectrometers for the ExoMars 2016 Trace Gas Orbiter. <i>Space Science Reviews</i> , 2018, 214, 1.	8.1	119
9	No detection of methane on Mars from early ExoMars Trace Gas Orbiter observations. <i>Nature</i> , 2019, 568, 517-520.	27.8	111
10	Martian dust storm impact on atmospheric H ₂ O and D/H observed by ExoMars Trace Gas Orbiter. <i>Nature</i> , 2019, 568, 521-525.	27.8	107
11	Heating and cooling of the thermosphere by internal gravity waves. <i>Geophysical Research Letters</i> , 2009, 36, .	4.0	98
12	Influence of gravity waves on the Martian atmosphere: General circulation modeling. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	89
13	Parameterization of gravity wave momentum deposition based on nonlinear wave interactions: basic formulation and sensitivity tests. <i>Journal of Atmospheric and Solar-Terrestrial Physics</i> , 2000, 62, 1015-1033.	1.6	85
14	Internal gravity waves in the thermosphere during low and high solar activity: Simulation study. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	80
15	High-altitude gravity waves in the Martian thermosphere observed by MAVEN/NGIMS and modeled by a gravity wave scheme. <i>Geophysical Research Letters</i> , 2015, 42, 8993-9000.	4.0	79
16	Thermal effects of internal gravity waves in the Martian upper atmosphere. <i>Geophysical Research Letters</i> , 2012, 39, .	4.0	70
17	Global distribution and parameter dependences of gravity wave activity in the Martian upper thermosphere derived from MAVEN/NGIMS observations. <i>Journal of Geophysical Research: Space Physics</i> , 2017, 122, 2374-2397.	2.4	66
18	Description and climatology of a new general circulation model of the Martian atmosphere. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	63

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19	First results of <i>Herschel</i> -PACS observations of Neptune. <i>Astronomy and Astrophysics</i> , 2010, 518, L152.	5.1	60
20	Water and related chemistry in the solar system. A guaranteed time key programme for <i>Herschel</i> . <i>Planetary and Space Science</i> , 2009, 57, 1596-1606.	1.7	58
21	Thermal effects of saturating gravity waves in the atmosphere. <i>Journal of Geophysical Research</i> , 2003, 108, ACL 4-1.	3.3	57
22	<i>Herschel</i> /HIFI observations of Mars: First detection of O ₂ at submillimetre wavelengths and upper limits on HCl and H ₂ O. <i>Astronomy and Astrophysics</i> , 2010, 521, L49.	5.1	57
23	Gravity waves in the thermosphere during a sudden stratospheric warming. <i>Geophysical Research Letters</i> , 2012, 39, .	4.0	52
24	Cooling of the Martian thermosphere by CO ₂ radiation and gravity waves: An intercomparison study with two general circulation models. <i>Journal of Geophysical Research E: Planets</i> , 2015, 120, 913-927.	3.6	51
25	Seasonal Water "Pump" in the Atmosphere of Mars: Vertical Transport to the Thermosphere. <i>Geophysical Research Letters</i> , 2019, 46, 4161-4169.	4.0	50
26	Dynamical effects of internal gravity waves in the equinoctial thermosphere. <i>Journal of Atmospheric and Solar-Terrestrial Physics</i> , 2012, 90-91, 104-116.	1.6	49
27	General circulation modeling of the Martian upper atmosphere during global dust storms. <i>Journal of Geophysical Research E: Planets</i> , 2013, 118, 2234-2246.	3.6	49
28	Influence of parameterized small-scale gravity waves on the migrating diurnal tide in Earth's thermosphere. <i>Journal of Geophysical Research: Space Physics</i> , 2017, 122, 4846-4864.	2.4	49
29	The nonlinear mechanism of gravity wave generation by meteorological motions in the atmosphere. <i>Journal of Atmospheric and Solar-Terrestrial Physics</i> , 1995, 57, 1221-1231.	0.9	48
30	Estimates of gravity wave drag on Mars: Indication of a possible lower thermospheric wind reversal. <i>Icarus</i> , 2011, 211, 909-912.	2.5	48
31	On the role of an anisotropic gravity wave spectrum in maintaining the circulation of the middle atmosphere. <i>Geophysical Research Letters</i> , 1998, 25, 509-512.	4.0	47
32	Simulated variability of the high-latitude thermosphere induced by small-scale gravity waves during a sudden stratospheric warming. <i>Journal of Geophysical Research: Space Physics</i> , 2014, 119, 357-365.	2.4	44
33	Winter polar warmings and the meridional transport on Mars simulated with a general circulation model. <i>Icarus</i> , 2007, 186, 97-110.	2.5	42
34	Gravity Waves in Planetary Atmospheres: Their Effects and Parameterization in Global Circulation Models. <i>Atmosphere</i> , 2019, 10, 531.	2.3	41
35	Gravity waves and high-altitude CO ₂ ice cloud formation in the Martian atmosphere. <i>Geophysical Research Letters</i> , 2015, 42, 4294-4300.	4.0	39
36	Seasonal changes of the baroclinic wave activity in the northern hemisphere of Mars simulated with a GCM. <i>Geophysical Research Letters</i> , 2007, 34, .	4.0	37

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37	Role of gravity waves in vertical coupling during sudden stratospheric warmings. <i>Geoscience Letters</i> , 2016, 3, .	3.3	36
38	A study of the distant activity of comet C/2006 W3 (Christensen) with <i>Herschel</i> and ground-based radio telescopes. <i>Astronomy and Astrophysics</i> , 2010, 518, L149.	5.1	35
39	Carbon dioxide ice clouds, snowfalls, and baroclinic waves in the northern winter polar atmosphere of Mars. <i>Geophysical Research Letters</i> , 2013, 40, 1484-1488.	4.0	35
40	Comparison of the Martian thermospheric density and temperature from IUVS/MAVEN data and general circulation modeling. <i>Geophysical Research Letters</i> , 2016, 43, 3095-3104.	4.0	34
41	From cold to warm gas giants: A three-dimensional atmospheric general circulation modeling. <i>Icarus</i> , 2013, 225, 228-235.	2.5	33
42	Dust Storm-Enhanced Gravity Wave Activity in the Martian Thermosphere Observed by MAVEN and Implication for Atmospheric Escape. <i>Geophysical Research Letters</i> , 2021, 48, e2020GL092095.	4.0	33
43	HIFI observations of water in the atmosphere of comet C/2008 Q3 (Garradd). <i>Astronomy and Astrophysics</i> , 2010, 518, L150.	5.1	31
44	The EChO science case. <i>Experimental Astronomy</i> , 2015, 40, 329-391.	3.7	31
45	Middle atmosphere polar warmings on Mars: Simulations and study on the validation with sub-millimeter observations. <i>Planetary and Space Science</i> , 2007, 55, 1103-1112.	1.7	30
46	On Forcing the Winter Polar Warmings in the Martian Middle Atmosphere during Dust Storms. <i>Journal of the Meteorological Society of Japan</i> , 2009, 87, 913-921.	1.8	28
47	Gravity Wave Activity in the Atmosphere of Mars During the 2018 Global Dust Storm: Simulations With a High-Resolution Model. <i>Journal of Geophysical Research E: Planets</i> , 2020, 125, e2020JE006556.	3.6	27
48	On advection and diffusion in the mesosphere and lower thermosphere: The role of rotational fluxes. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	26
49	Water production in comet 81P/Wild 2 as determined by <i>Herschel</i> /HIFI. <i>Astronomy and Astrophysics</i> , 2010, 521, L50.	5.1	25
50	A global view of gravity waves in the Martian atmosphere inferred from a high-resolution general circulation model. <i>Geophysical Research Letters</i> , 2015, 42, 9213-9222.	4.0	24
51	Influence of dust on the dynamics of the martian atmosphere above the first scale height. <i>Aeolian Research</i> , 2011, 3, 145-156.	2.7	23
52	Semiannual oscillations in the atmosphere of Mars. <i>Geophysical Research Letters</i> , 2008, 35, .	4.0	22
53	Influence of gravity waves on the climatology of high-altitude Martian carbon dioxide ice clouds. <i>Annales Geophysicae</i> , 2018, 36, 1631-1646.	1.6	22
54	Gravity Wave Activity in the Martian Atmosphere at Altitudes 20-160 km From ACS/TGO Occultation Measurements. <i>Journal of Geophysical Research E: Planets</i> , 2021, 126, e2021JE006899.	3.6	22

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55	Annual Cycle of Gravity Wave Activity Derived From a High-Resolution Martian General Circulation Model. <i>Journal of Geophysical Research E: Planets</i> , 2019, 124, 1618-1632.	3.6	21
56	Realistic semiannual oscillation simulated in a middle atmosphere general circulation model. <i>Geophysical Research Letters</i> , 2001, 28, 733-736.	4.0	20
57	Global Distribution of Gravity Wave Sources and Fields in the Martian Atmosphere during Equinox and Solstice Inferred from a High-Resolution General Circulation Model. <i>Journals of the Atmospheric Sciences</i> , 2016, 73, 4895-4909.	1.7	20
58	Obscure waves in planetary atmospheres. <i>Physics Today</i> , 2019, 72, 40-46.	0.3	20
59	First results on Martian carbon monoxide from <i>Herschel</i> /HIFI observations. <i>Astronomy and Astrophysics</i> , 2010, 521, L48.	5.1	19
60	Density Fluctuations in the Lower Thermosphere of Mars Retrieved From the ExoMars Trace Gas Orbiter (TGO) Aerobraking. <i>Atmosphere</i> , 2019, 10, 620.	2.3	16
61	Modeling the Hydrological Cycle in the Atmosphere of Mars: Influence of a Bimodal Size Distribution of Aerosol Nucleation Particles. <i>Journal of Geophysical Research E: Planets</i> , 2018, 123, 508-526.	3.6	14
62	Effects of Latitude-Dependent Gravity Wave Source Variations on the Middle and Upper Atmosphere. <i>Frontiers in Astronomy and Space Sciences</i> , 2021, 7, .	2.8	14
63	Parameterization of radiative heating and cooling rates in the stratosphere of Jupiter. <i>Icarus</i> , 2014, 242, 149-157.	2.5	13
64	General circulation modeling of the Martian upper atmosphere during global dust storms. <i>Journal of Geophysical Research E: Planets</i> , 2013, 118, n/a-n/a.	3.6	10
65	Martian Dust Storms and Gravity Waves: Disentangling Water Transport to the Upper Atmosphere. <i>Journal of Geophysical Research E: Planets</i> , 2022, 127, .	3.6	10
66	Net radiative heating and diagnostics of the diabatic circulation in the 15–110 km height layer. <i>Journal of Atmospheric and Solar-Terrestrial Physics</i> , 1994, 56, 1571-1584.	0.9	9
67	The <i>Herschel</i> -SPIRE submillimetre spectrum of Mars. <i>Astronomy and Astrophysics</i> , 2010, 518, L151.	5.1	9
68	Extending the Parameterization of Gravity Waves into the Thermosphere and Modeling Their Effects. <i>Springer Atmospheric Sciences</i> , 2013, , 467-480.	0.3	9
69	Small-scale temperature fluctuations associated with gravity waves cause additional radiative cooling of mesopause the region. <i>Geophysical Research Letters</i> , 2007, 34, .	4.0	8
70	Ion Friction and Quantification of the Geomagnetic Influence on Gravity Wave Propagation and Dissipation in the Thermosphere-Ionosphere. <i>Journal of Geophysical Research: Space Physics</i> , 2017, 122, 12,464.	2.4	8
71	Variations of the Martian Thermospheric Gravity-wave Activity during the Recent Solar Minimum as Observed by MAVEN. <i>Astrophysical Journal</i> , 2021, 920, 69.	4.5	8
72	The water cycle in the general circulation model of the martian atmosphere. <i>Solar System Research</i> , 2016, 50, 90-101.	0.7	7

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73	Intense Zonal Wind in the Martian Mesosphere During the 2018 Planetâ€œEncircling Dust Event Observed by Groundâ€œBased Infrared Heterodyne Spectroscopy. Geophysical Research Letters, 2021, 48, e2021GL092413.	4.0	4
74	Evidence for Gravity Waves in the Thermosphere of Saturn and Implications for Global Circulation. Geophysical Research Letters, 2022, 49, .	4.0	4
75	Reply to â€œComments on the Gravity Wave Theory of J. Weinstock Concerning Dissipation Induced by Nonlinear Effectsâ€œ. Journals of the Atmospheric Sciences, 2007, 64, 1027-1041.	1.7	3
76	A NEW COUPLED 3D-MODEL OF THE DYNAMICS AND CHEMISTRY OF THE MARTIAN ATMOSPHERE. , 0, , 177-194.		2
77	Simulation of Water Vapor Photodissociation during Dust Storm Season on Mars. Solar System Research, 2022, 56, 23-31.	0.7	2
78	THE DOPPLER-SONNEMANN EFFECT (DSE) ON THE PHOTOCHEMISTRY ON MARS. , 0, , 163-175.		1
79	Definition of a generalized diabatic circulation based on a variational approach. Izvestiya - Atmospheric and Oceanic Physics, 2007, 43, 436-441.	0.9	0
80	MARTIAN ATMOSPHERE DURING THE 2001 GLOBAL DUST STORM: OBSERVATIONS WITH SWAS AND SIMULATIONS WITH A GENERAL CIRCULATION MODEL. , 2006, , 145-154.		0
81	Infra-red Radiative Cooling/Heating of the Mesosphere and Lower Thermosphere Due to the Small-Scale Temperature Fluctuations Associated with Gravity Waves. Springer Atmospheric Sciences, 2013, , 429-442.	0.3	0
82	Editorial: Coupling Processes in Terrestrial and Planetary Atmospheres. Frontiers in Astronomy and Space Sciences, 2022, 9, .	2.8	0