

Mark I Richardson

List of Publications by Year in descending order

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57
papers

4,099
citations

101384

36
h-index

143772

57
g-index

57
all docs

57
docs citations

57
times ranked

2034
citing authors

#	ARTICLE	IF	CITATIONS
1	Morphology and Composition of the Surface of Mars: Mars Odyssey THEMIS Results. <i>Science</i> , 2003, 300, 2056-2061.	6.0	368
2	PlanetWRF: A general purpose, local to global numerical model for planetary atmospheric and climate dynamics. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	220
3	Mars Climate Sounder limb profile retrieval of atmospheric temperature, pressure, and dust and water ice opacity. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	220
4	On the orbital forcing of Martian water and CO ₂ cycles: A general circulation model study with simplified volatile schemes. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	217
5	The origin, evolution, and trajectory of large dust storms on Mars during Mars years 24-30 (1999-2011). <i>Icarus</i> , 2015, 251, 112-127.	1.1	155
6	Investigation of the nature and stability of the Martian seasonal water cycle with a general circulation model. <i>Journal of Geophysical Research</i> , 2002, 107, 7-1.	3.3	153
7	Growth and form of the mound in Gale Crater, Mars: Slope wind enhanced erosion and transport. <i>Geology</i> , 2013, 41, 543-546.	2.0	147
8	Simulation of the Martian dust cycle with the GFDL Mars GCM. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	137
9	A topographically forced asymmetry in the martian circulation and climate. <i>Nature</i> , 2002, 416, 298-301.	13.7	123
10	Winds measured by the Rover Environmental Monitoring Station (REMS) during the Mars Science Laboratory (MSL) rover's Bagnold Dunes Campaign and comparison with numerical modeling using MarsWRF. <i>Icarus</i> , 2017, 291, 203-231.	1.1	119
11	Numerical simulation of Martian dust devils. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	108
12	Observations of the initiation and evolution of the 2001 Mars global dust storm. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	108
13	A survey of Martian dust devil activity using Mars Global Surveyor Mars Orbiter Camera images. <i>Journal of Geophysical Research</i> , 2005, 110, n/a-n/a.	3.3	105
14	Cyclones, tides, and the origin of a cross-equatorial dust storm on Mars. <i>Geophysical Research Letters</i> , 2003, 30, .	1.5	104
15	The impact of resolution on the dynamics of the martian global atmosphere: Varying resolution studies with the MarsWRF GCM. <i>Icarus</i> , 2012, 221, 276-288.	1.1	97
16	An assessment of the global, seasonal, and interannual spacecraft record of Martian climate in the thermal infrared. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	94
17	Threshold for sand mobility on Mars calibrated from seasonal variations of sand flux. <i>Nature Communications</i> , 2014, 5, 5096.	5.8	86
18	Water ice clouds in the Martian atmosphere: General circulation model experiments with a simple cloud scheme. <i>Journal of Geophysical Research</i> , 2002, 107, 2-1.	3.3	81

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19	Stratospheric superrotation in the TitanWRF model. <i>Icarus</i> , 2011, 213, 636-654.	1.1	81
20	Long-term evolution of transient liquid water on Mars. <i>Journal of Geophysical Research</i> , 2005, 110, n/a-n/a.	3.3	75
21	New dust opacity mapping from Viking infrared thermal mapper data. <i>Journal of Geophysical Research</i> , 1993, 98, 10941-10949.	3.3	69
22	Aeolian processes in Proctor Crater on Mars: Mesoscale modeling of dune-forming winds. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	68
23	Relationship between frontal dust storms and transient eddy activity in the northern hemisphere of Mars as observed by Mars Global Surveyor. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	68
24	Martian surface winds: Insensitivity to orbital changes and implications for aeolian processes. <i>Journal of Geophysical Research</i> , 2001, 106, 32885-32902.	3.3	67
25	Surface dust redistribution on Mars as observed by the Mars Global Surveyor and Viking orbiters. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	67
26	Observations and preliminary science results from the first 100 sols of MSL Rover Environmental Monitoring Station ground temperature sensor measurements at Gale Crater. <i>Journal of Geophysical Research E: Planets</i> , 2014, 119, 745-770.	1.5	67
27	The impact of surface dust source exhaustion on the martian dust cycle, dust storms and interannual variability, as simulated by the MarsWRF General Circulation Model. <i>Icarus</i> , 2015, 257, 47-87.	1.1	66
28	Thermal Emission Imaging System (THEMIS) infrared observations of atmospheric dust and water ice cloud optical depth. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	55
29	A first look at dust lifting and dust storms near the south pole of Mars with a mesoscale model. <i>Journal of Geophysical Research</i> , 2002, 107, 4-1.	3.3	54
30	Atmospheric modeling of Mars methane surface releases. <i>Planetary and Space Science</i> , 2011, 59, 227-237.	0.9	54
31	A mesoscale model for the Martian atmosphere. <i>Journal of Geophysical Research</i> , 2002, 107, 3-1.	3.3	49
32	THEMIS-VIS observations of clouds in the martian mesosphere: Altitudes, wind speeds, and decameter-scale morphology. <i>Icarus</i> , 2010, 210, 545-565.	1.1	46
33	Meteorology of proposed Mars Exploration Rover landing sites. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	44
34	Fitting the Viking lander surface pressure cycle with a Mars General Circulation Model. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	42
35	The sensitivity of solstitial pauses to atmospheric ice and dust in the MarsWRF General Circulation Model. <i>Icarus</i> , 2018, 311, 23-34.	1.1	40
36	The impact of a realistic vertical dust distribution on the simulation of the Martian General Circulation. <i>Journal of Geophysical Research E: Planets</i> , 2013, 118, 980-993.	1.5	37

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37	Simulating Titan's methane cycle with the TitanWRF General Circulation Model. <i>Icarus</i> , 2016, 267, 106-134.	1.1	37
38	A reanalysis of water abundances in the Martian atmosphere at high obliquity. <i>Geophysical Research Letters</i> , 2005, 32, .	1.5	34
39	The Ashima/MIT Mars GCM and argon in the martian atmosphere. <i>Icarus</i> , 2012, 218, 1043-1070.	1.1	30
40	On the relationship between surface pressure, terrain elevation, and air temperature. Part I: The large diurnal surface pressure range at Gale Crater, Mars and its origin due to lateral hydrostatic adjustment. <i>Planetary and Space Science</i> , 2018, 164, 132-157.	0.9	30
41	Seasonal variation of aerosols in the Martian atmosphere. <i>Journal of Geophysical Research</i> , 2000, 105, 4109-4121.	3.3	26
42	Convective instability in the martian middle atmosphere. <i>Icarus</i> , 2010, 208, 574-589.	1.1	25
43	Zonal wavenumber three traveling waves in the northern hemisphere of Mars simulated with a general circulation model. <i>Icarus</i> , 2013, 223, 654-676.	1.1	23
44	Warm early Mars surface enabled by high-altitude water ice clouds. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	23
45	High-resolution atmospheric observations by the Mars Odyssey Thermal Emission Imaging System. <i>Icarus</i> , 2007, 192, 378-395.	1.1	22
46	The cascade from local to global dust storms on Mars: Temporal and spatial thresholds on thermal and dynamical feedback. <i>Icarus</i> , 2018, 302, 514-536.	1.1	21
47	An initial assessment of the impact of postulated orbit-spin coupling on Mars dust storm variability in fully interactive dust simulations. <i>Icarus</i> , 2019, 317, 649-668.	1.1	20
48	Comparison of microwave and infrared measurements of Martian atmospheric temperatures: Implications for short-term climate variability. <i>Journal of Geophysical Research</i> , 1998, 103, 5911-5918.	3.3	19
49	General circulation models of the dynamics of Pluto's volatile transport on the eve of the New Horizons encounter. <i>Icarus</i> , 2015, 254, 306-323.	1.1	17
50	Large Eddy Simulations of the Dusty Martian Convective Boundary Layer With MarsWRF. <i>Journal of Geophysical Research E: Planets</i> , 2021, 126, e2020JE006752.	1.5	17
51	Constraints on Mars's recent equatorial wind regimes from layered deposits and comparison with general circulation model results. <i>Icarus</i> , 2014, 230, 81-95.	1.1	15
52	Replication of the historic record of martian global dust storm occurrence in an atmospheric general circulation model. <i>Icarus</i> , 2019, 317, 197-208.	1.1	12
53	Curvilinear features in the southern hemisphere observed by Mars Global Surveyor Mars Orbiter Camera. <i>Icarus</i> , 2011, 215, 242-252.	1.1	11
54	Gravity Wave Observations by the Mars Science Laboratory REMS Pressure Sensor and Comparison With Mesoscale Atmospheric Modeling With MarsWRF. <i>Journal of Geophysical Research E: Planets</i> , 2021, 126, e2021JE006907.	1.5	11

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55	Angular momentum conservation in a simplified Venus General Circulation Model. <i>Icarus</i> , 2012, 221, 1173-1176.	1.1	7
56	Sensitivity of simulated Martian atmospheric temperature to prescribed dust opacity distribution: Comparison of model results with reconstructed data from Mars Exploration Rover missions. <i>Journal of Geophysical Research E: Planets</i> , 2015, 120, 2002-2019.	1.5	7
57	Mars: The next steps. <i>Eos</i> , 2000, 81, 302.	0.1	1