Mark I Richardson

List of Publications by Year
in descending order

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	Warm early Mars surface enabled by high-altitude water ice clouds. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	23
2	Gravity Wave Observations by the Mars Science Laboratory REMS Pressure Sensor and Comparison With Mesoscale Atmospheric Modeling With MarsWRF. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006907.	1.5	11
3	Large Eddy Simulations of the Dusty Martian Convective Boundary Layer With MarsWRF. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006752.	1.5	17
4	Replication of the historic record of martian global dust storm occurrence in an atmospheric general circulation model. Icarus, 2019, 317, 197-208.	1.1	12
5	An initial assessment of the impact of postulated orbit-spin coupling on Mars dust storm variability in fully interactive dust simulations. Icarus, 2019, 317, 649-668.	1.1	20
6	The cascade from local to global dust storms on Mars: Temporal and spatial thresholds on thermal and dynamical feedback. Icarus, 2018, 302, 514-536.	1.1	21
7	The sensitivity of solsticial pauses to atmospheric ice and dust in the MarsWRF General Circulation Model. Icarus, 2018, 311, 23-34.	1.1	40
8	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. Planetary and Space Science, 2018, 164, 132-157.	0.9	30
9	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. Icarus, 2017, 291, 203-231.	1.1	119
10	Simulating Titanâ€™s methane cycle with the TitanWRF General Circulation Model. Icarus, 2016, 267, 106-134.	1.1	37
11	Sensitivity of simulated Martian atmospheric temperature to prescribed dust opacity distribution: Comparison of model results with reconstructed data from Mars Exploration Rover missions. Journal of Geophysical Research E: Planets, 2015, 120, 2002-2019.	1.5	7
12	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. Icarus, 2015, 257, 47-87.	1.1	66
13	General circulation models of the dynamics of Plutoâ€™s volatile transport on the eve of the New Horizons encounter. Icarus, 2015, 254, 306-323.	1.1	17
14	The origin, evolution, and trajectory of large dust storms on Mars during Mars years 24â€“30 (1999â€“2011). Icarus, 2015, 251, 112-127.	1.1	155
15	Threshold for sand mobility on Mars calibrated from seasonal variations of sand flux. Nature Communications, 2014, 5, 5096.	5.8	86
16	Constraints on Marsâ€™ recent equatorial wind regimes from layered deposits and comparison with general circulation model results. Icarus, 2014, 230, 81-95.	1.1	15
17	Observations and preliminary science results from the first 100 sols of MSL Rover Environmental Monitoring Station ground temperature sensor measurements at Gale Crater. Journal of Geophysical Research E: Planets, 2014, 119, 745-770.	1.5	67
18	Zonal wavenumber three traveling waves in the northern hemisphere of Mars simulated with a general circulation model. Icarus, 2013, 223, 654-676.	1.1	23

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19	The impact of a realistic vertical dust distribution on the simulation of the Martian General Circulation. Journal of Geophysical Research E: Planets, 2013, 118, 980-993.	1.5	37
20	Growth and form of the mound in Gale Crater, Mars: Slope wind enhanced erosion and transport. Geology, 2013, 41, 543-546.	2.0	147
21	The impact of resolution on the dynamics of the martian global atmosphere: Varying resolution studies with the MarsWRF GCM. Icarus, 2012, 221, 276-288.	1.1	97
22	Angular momentum conservation in a simplified Venus General Circulation Model. Icarus, 2012, 221, 1173-1176.	1.1	7
23	The Ashima/MIT Mars GCM and argon in the martian atmosphere. Icarus, 2012, 218, 1043-1070.	1.1	30
24	Curvilinear features in the southern hemisphere observed by Mars Global Surveyor Mars Orbiter Camera. Icarus, 2011, 215, 242-252.	1.1	11
25	Atmospheric modeling of Mars methane surface releases. Planetary and Space Science, 2011, 59, 227-237.	0.9	54
26	Stratospheric superrotation in the TitanWRF model. Icarus, 2011, 213, 636-654.	1.1	81
27	Convective instability in the martian middle atmosphere. Icarus, 2010, 208, 574-589.	1.1	25
28	THEMIS-VIS observations of clouds in the martian mesosphere: Altitudes, wind speeds, and decameter-scale morphology. Icarus, 2010, 210, 545-565.	1.1	46
29	Mars Climate Sounder limb profile retrieval of atmospheric temperature, pressure, and dust and water ice opacity. Journal of Geophysical Research, 2009, 114, .	3.3	220
30	Fitting the Viking lander surface pressure cycle with a Mars General Circulation Model. Journal of Geophysical Research, 2009, 114, .	3.3	42
31	PlanetWRF: A general purpose, local to global numerical model for planetary atmospheric and climate dynamics. Journal of Geophysical Research, 2007, 112, .	3.3	220
32	High-resolution atmospheric observations by the Mars Odyssey Thermal Emission Imaging System. Icarus, 2007, 192, 378-395.	1.1	22
33	Surface dust redistribution on Mars as observed by the Mars Global Surveyor and Viking orbiters. Journal of Geophysical Research, 2006, 111, .	3.3	67
34	A survey of Martian dust devil activity using Mars Global Surveyor Mars Orbiter Camera images. Journal of Geophysical Research, 2005, 110, n/a-n/a.	3.3	105
35	A reanalysis of water abundances in the Martian atmosphere at high obliquity. Geophysical Research Letters, 2005, 32, .	1.5	34
36	Aeolian processes in Proctor Crater on Mars: Mesoscale modeling of dune-forming winds. Journal of Geophysical Research, 2005, 110, .	3.3	68

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37	Observations of the initiation and evolution of the 2001 Mars global dust storm. Journal of Geophysical Research, 2005, 110, .	3.3	108
38	Long-term evolution of transient liquid water on Mars. Journal of Geophysical Research, 2005, 110, n/a-n/a.	3.3	75
39	Relationship between frontal dust storms and transient eddy activity in the northern hemisphere of Mars as observed by Mars Global Surveyor. Journal of Geophysical Research, 2005, 110, .	3.3	68
40	Simulation of the Martian dust cycle with the GFDL Mars GCM. Journal of Geophysical Research, 2004, 109, .	3.3	137
41	Morphology and Composition of the Surface of Mars: Mars Odyssey THEMIS Results. Science, 2003, 300, 2056-2061.	6.0	368
42	Cyclones, tides, and the origin of a cross-equatorial dust storm on Mars. Geophysical Research Letters, 2003, 30, .	1.5	104
43	An assessment of the global, seasonal, and interannual spacecraft record of Martian climate in the thermal infrared. Journal of Geophysical Research, 2003, 108, .	3.3	94
44	Numerical simulation of Martian dust devils. Journal of Geophysical Research, 2003, 108, .	3.3	108
45	On the orbital forcing of Martian water and CO2cycles: A general circulation model study with simplified volatile schemes. Journal of Geophysical Research, 2003, 108, .	3.3	217
46	Meteorology of proposed Mars Exploration Rover landing sites. Journal of Geophysical Research, 2003, 108, .	3.3	44
47	Thermal Emission Imaging System (THEMIS) infrared observations of atmospheric dust and water ice cloud optical depth. Journal of Geophysical Research, 2003, 108, .	3.3	55
48	Investigation of the nature and stability of the Martian seasonal water cycle with a general circulation model. Journal of Geophysical Research, 2002, 107, 7-1.	3.3	153
49	A first look at dust lifting and dust storms near the south pole of Mars with a mesoscale model. Journal of Geophysical Research, 2002, 107, 4-1.	3.3	54
50	Water ice clouds in the Martian atmosphere: General circulation model experiments with a simple cloud scheme. Journal of Geophysical Research, 2002, 107, 2-1.	3.3	81
51	A mesoscale model for the Martian atmosphere. Journal of Geophysical Research, 2002, 107, 3-1.	3.3	49
52	A topographically forced asymmetry in the martian circulation and climate. Nature, 2002, 416, 298-301.	13.7	123
53	Martian surface winds: Insensitivity to orbital changes and implications for aeolian processes. Journal of Geophysical Research, 2001, 106, 32885-32902.	3.3	67
54	Seasonal variation of aerosols in the Martian atmosphere. Journal of Geophysical Research, 2000, 105, 4109-4121.	3.3	26

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55	Mars: The next steps. Eos, 2000, 81, 302.	0.1	1
56	Comparison of microwave and infrared measurements of Martian atmospheric temperatures: Implications for short-term climate variability. Journal of Geophysical Research, 1998, 103, 5911-5918.	3.3	19
57	New dust opacity mapping from Viking infrared thermal mapper data. Journal of Geophysical Research, 1993, 98, 10941-10949.	3.3	69