Aymeric Spiga

List of Publications by Year
in descending order

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139 papers	5,647 citations	71102 41 h-index	95266 68 g-index
162 all docs	162 docs citations	162 times ranked	2862 citing authors

#	Article	IF	Citations
1	Initial results from the InSight mission on Mars. Nature Geoscience, 2020, 13, 183-189.	12.9	274
2	Constraints on the shallow elastic and anelastic structure of Mars from InSight seismic data. Nature Geoscience, 2020, 13, 213-220.	12.9	207
3	3D climate modeling of close-in land planets: Circulation patterns, climate moist bistability, and habitability. Astronomy and Astrophysics, 2013, 554, A69.	5.1	203
4	The seismicity of Mars. Nature Geoscience, 2020, 13, 205-212.	12.9	194
5	Global climate modeling of the Martian water cycle with improved microphysics and radiatively active water ice clouds. Journal of Geophysical Research E: Planets, 2014, 119, 1479-1495.	3.6	162
6	The atmosphere of Mars as observed by InSight. Nature Geoscience, 2020, 13, 190-198.	12.9	161
7	Martian Year 34 Column Dust Climatology from Mars Climate Sounder Observations: Reconstructed Maps and Model Simulations. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006111.	3.6	137
8	THE MARTIAN ATMOSPHERIC BOUNDARY LAYER. Reviews of Geophysics, 2011, 49, .	23.0	119
9	A new model to simulate the Martian mesoscale and microscale atmospheric circulation: Validation and first results. Journal of Geophysical Research, 2009, 114, .	3.3	116
10	The influence of radiatively active water ice clouds on the Martian climate. Geophysical Research Letters, 2012, 39, .	4.0	115
11	Geology of the InSight landing site on Mars. Nature Communications, 2020, 11, 1014.	12.8	107
12	Exploring the faint young Sun problem and the possible climates of the Archean Earth with a 3â€Ð GCM. Journal of Geophysical Research D: Atmospheres, 2013, 118, 10,414.	3.3	106
13	Rocket dust storms and detached dust layers in the Martian atmosphere. Journal of Geophysical Research E: Planets, 2013, 118, 746-767.	3.6	98
14	The Marsquake catalogue from InSight, sols 0â€“478. Physics of the Earth and Planetary Interiors, 2021, 310, 106595.	1.9	97
15	Atmospheric Science with InSight. Space Science Reviews, 2018, 214, 1.	8.1	88
16	Nearâ€tropical subsurface ice on Mars. Geophysical Research Letters, 2010, 37, .	4.0	79
17	Winter and spring evolution of northern seasonal deposits on Mars from OMEGA on Mars Express. Journal of Geophysical Research, 2011, 116, .	3.3	79
18	Geology and Physical Properties Investigations by the InSight Lander. Space Science Reviews, 2018, 214, 1.	8.1	77

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19	Wide distribution and glacial origin of polar gypsum on Mars. Earth and Planetary Science Letters, 2012, 317-318, 44-55.	4.4	76
20	Recent Ice Ages on Mars: The role of radiatively active clouds and cloud microphysics. Geophysical Research Letters, 2014, 41, 4873-4879.	4.0	75
21	Planum Boreum basal unit topography, Mars: Irregularities and insights from SHARAD. Journal of Geophysical Research E: Planets, 2015, 120, 1357-1375.	3.6	72
22	Mapping the mesospheric CO2 clouds on Mars: MEx/OMEGA and MEx/HRSC observations and challenges for atmospheric models. Icarus, 2010, 209, 452-469.	2.5	71
23	Gravity waves, cold pockets and CO₂ clouds in the Martian mesosphere. Geophysical Research Letters, 2012, 39, .	4.0	71
24	Crustal and time-varying magnetic fields at the InSight landing site on Mars. Nature Geoscience, 2020, 13, 199-204.	12.9	68
25	The spiral troughs of Mars as cyclic steps. Journal of Geophysical Research E: Planets, 2013, 118, 1835-1857.	3.6	65
26	Companion guide to the marsquake catalog from InSight, Sols 0â€“478: Data content and non-seismic events. Physics of the Earth and Planetary Interiors, 2021, 310, 106597.	1.9	64
27	A thermal plume model for the Martian convective boundary layer. Journal of Geophysical Research E: Planets, 2013, 118, 1468-1487.	3.6	61
28	The Mars Analysis Correction Data Assimilation (<scp>MACDA</scp>) Dataset V1.0. Geoscience Data Journal, 2014, 1, 129-139.	4.4	61
29	The horizontal motion of dust devils on Mars derived from CRISM and CTX/HiRISE observations. Icarus, 2014, 227, 8-20.	2.5	59
30	Estimations of the Seismic Pressure Noise on Mars Determined from Large Eddy Simulations and Demonstration of Pressure Decorrelation Techniques for the Insight Mission. Space Science Reviews, 2017, 211, 457-483.	8.1	53
31	Diurnal Variations of Dust During the 2018 Global Dust Storm Observed by the Mars Climate Sounder. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006115.	3.6	52
32	Field measurements of horizontal forward motion velocities of terrestrial dust devils: Towards a proxy for ambient winds on Mars and Earth. Icarus, 2012, 221, 632-645.	2.5	51
33	Structure and dynamics of the convective boundary layer on Mars as inferred from largeâ€eddy simulations and remoteâ€sensing measurements. Quarterly Journal of the Royal Meteorological Society, 2010, 136, 414-428.	2.7	49
34	Scientific rationale for Saturn×³s in situ exploration. Planetary and Space Science, 2014, 104, 29-47.	1.7	49
35	Modeling of Ground Deformation and Shallow Surface Waves Generated by Martian Dust Devils and Perspectives for Near-Surface Structure Inversion. Space Science Reviews, 2017, 211, 501-524.	8.1	49
36	Global climate modeling of Saturnâ€™s atmosphere. Part I: Evaluation of the radiative transfer model. Icarus, 2014, 238, 110-124.	2.5	45

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37	A Study of Daytime Convective Vortices and Turbulence in the Martian Planetary Boundary Layer Based on Halfâ€aâ€Year of InSight Atmospheric Measurements and Largeâ€Eddy Simulations. Journal of Geophysical Research E: Planets, 2021, 126, .	3.6	45
38	The impact of martian mesoscale winds on surface temperature and on the determination of thermal inertia. Icarus, 2011, 212, 504-519.	2.5	44
39	Subsurface Structure at the InSight Landing Site From Compliance Measurements by Seismic and Meteorological Experiments. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006387.	3.6	44
40	Gully formation on Mars: Two recent phases of formation suggested by links between morphology, slope orientation and insolation history. Icarus, 2010, 208, 658-666.	2.5	43
41	History and Applications of Dust Devil Studies. Space Science Reviews, 2016, 203, 5-37.	8.1	43
42	Aphelion waterâ€ice cloud mapping and property retrieval using the OMEGA imaging spectrometer onboard Mars Express. Journal of Geophysical Research, 2012, 117, .	3.3	42
43	The martian mesosphere as revealed by CO2 cloud observations and General Circulation Modeling. Icarus, 2011, 216, 10-22.	2.5	41
44	Elements of comparison between Martian and terrestrial mesoscale meteorological phenomena: Katabatic winds and boundary layer convection. Planetary and Space Science, 2011, 59, 915-922.	1.7	40
45	Remote sensing of surface pressure on Mars with the Mars Express/OMEGA spectrometer: 1. Retrieval method. Journal of Geophysical Research, 2007, 112, .	3.3	38
46	Idealised simulations of the deep atmosphere of hot Jupiters. Astronomy and Astrophysics, 2019, 632, A114.	5.1	38
47	Large-Eddy Simulations of Dust Devils and Convective Vortices. Space Science Reviews, 2016, 203, 245-275.	8.1	37
48	Preparing for InSight: An Invitation to Participate in a Blind Test for Martian Seismicity. Seismological Research Letters, 2017, 88, 1290-1302.	1.9	37
49	Dust Devil Sediment Transport: From Lab to Field to Global Impact. Space Science Reviews, 2016, 203, 377-426.	8.1	35
50	Multi-model Meteorological and Aeolian Predictions for Mars 2020 and the Jezero Crater Region. Space Science Reviews, 2021, 217, 20.	8.1	35
51	Unraveling the martian water cycle with high-resolution global climate simulations. Icarus, 2017, 291, 82-106.	2.5	34
52	Assessing the power law hypothesis for the sizeâ€“frequency distribution of terrestrial and martian dust devils. Icarus, 2010, 209, 851-853.	2.5	33
53	The water cycle and regolithâ€“atmosphere interaction at Gale crater, Mars. Icarus, 2017, 289, 56-79.	2.5	33
54	The Polarization of Ambient Noise on Mars. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006545.	3.6	33

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55	A Comodulation Analysis of Atmospheric Energy Injection Into the Ground Motion at InSight, Mars. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006538.	3.6	33
56	Snow precipitation on Mars driven by cloud-induced night-time convection. Nature Geoscience, 2017, 10, 652-657.	12.9	32
57	Remote sensing of surface pressure on Mars with the Mars Express/OMEGA spectrometer: 2. Meteorological maps. Journal of Geophysical Research, 2007, 112, .	3.3	31
58	Threeâ€Dimensional Turbulenceâ€Resolving Modeling of the Venusian Cloud Layer and Induced Gravity Waves: Inclusion of Complete Radiative Transfer and Wind Shear. Journal of Geophysical Research E: Planets, 2018, 123, 2773-2789.	3.6	31
59	Global climate modeling of Saturn's atmosphere. Part II: Multi-annual high-resolution dynamical simulations. Icarus, 2020, 335, 113377.	2.5	31
60	Pressure Effects on the SEISâ€InSight Instrument, Improvement of Seismic Records, and Characterization of Long Period Atmospheric Waves From Ground Displacements. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006278.	3.6	31
61	Seismic Noise Autocorrelations on Mars. Earth and Space Science, 2021, 8, e2021EA001755.	2.6	31
62	Seasonal Variability of the Daytime and Nighttime Atmospheric Turbulence Experienced by InSight on Mars. Geophysical Research Letters, 2021, 48, e2021GL095453.	4.0	31
63	Modeling the microphysics of CO2 ice clouds within wave-induced cold pockets in the martian mesosphere. Icarus, 2014, 237, 239-261.	2.5	30
64	Effects of a Large Dust Storm in the Nearâ€Surface Atmosphere as Measured by InSight in Elysium Planitia, Mars. Comparison With Contemporaneous Measurements by Mars Science Laboratory. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006493.	3.6	30
65	Monitoring of Dust Devil Tracks Around the InSight Landing Site, Mars, and Comparison With In Situ Atmospheric Data. Geophysical Research Letters, 2020, 47, e2020GL087234.	4.0	30
66	Identification of the sources of inertia-gravity waves in the Andes Cordillera region. Annales Geophysicae, 2008, 26, 2551-2568.	1.6	29
67	TRAPPIST Habitable Atmosphere Intercomparison (THAI) Workshop Report. Planetary Science Journal, 2021, 2, 106.	3.6	29
68	Initial results from radio occultation measurements with the Mars Reconnaissance Orbiter: A nocturnal mixed layer in the tropics and comparisons with polar profiles from the Mars Climate Sounder. Icarus, 2014, 243, 91-103.	2.5	28
69	Parameterization of Rocket Dust Storms on Mars in the LMD Martian GCM: Modeling Details and Validation. Journal of Geophysical Research E: Planets, 2018, 123, 982-1000.	3.6	28
70	Martian Infrasound: Numerical Modeling and Analysis of InSight's Data. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006376.	3.6	28
71	Fast and accurate estimation of solar irradiance on Martian slopes. Geophysical Research Letters, 2008, 35, .	4.0	27
72	Planetary boundary layer and slope winds on Venus. Icarus, 2018, 314, 149-158.	2.5	27

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73	Aeolian processes as drivers of landform evolution at the South Pole of Mars. Geomorphology, 2015, 240, 54-69.	2.6	25
74	Study of gravity waves distribution and propagation in the thermosphere of Mars based on MGS, ODY, MRO and MAVEN density measurements. Planetary and Space Science, 2019, 178, 104708.	1.7	25
75	Mesoscale modeling of Venus' bow-shape waves. Icarus, 2020, 335, 113376.	2.5	24
76	A New Crater Near InSight: Implications for Seismic Impact Detectability on Mars. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006382.	3.6	24
77	Scientific Observations With the InSight Solar Arrays: Dust, Clouds, and Eclipses on Mars. Earth and Space Science, 2020, 7, e2019EA000992.	2.6	24
78	Impact of Gravity Waves on the Middle Atmosphere of Mars: A Nonâ€Orographic Gravity Wave Parameterization Based on Global Climate Modeling and MCS Observations. Journal of Geophysical Research E: Planets, 2020, 125, e2018JE005873.	3.6	23
79	Vortexâ€Dominated Aeolian Activity at InSight's Landing Site, Part 1: Multiâ€Instrument Observations, Analysis, and Implications. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006757.	3.6	23
80	Lander and rover histories of dust accumulation on and removal from solar arrays on Mars. Planetary and Space Science, 2021, 207, 105337.	1.7	23
81	Seasonal changes in Saturnâ€™s stratosphere inferred from Cassini/CIRS limb observations. Icarus, 2015, 258, 224-238.	2.5	22
82	Soil Thermophysical Properties Near the InSight Lander Derived From 50 Sols of Radiometer Measurements. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006859.	3.6	22
83	Gravity waves mapped by the OMEGA/MEX instrument through O₂ dayglow at 1.27 Î¼m: Data analysis and atmospheric modeling. Journal of Geophysical Research, 2012, 117, .	3.3	21
84	On the dynamical nature of Saturnâ€™s North Polar hexagon. Icarus, 2017, 297, 59-70.	2.5	21
85	Sedimentation waves on the Martian North Polar Cap: Analogy with megadunes in Antarctica. Earth and Planetary Science Letters, 2014, 403, 56-66.	4.4	20
86	Finite-Difference Modeling of Acoustic and Gravity Wave Propagation in Mars Atmosphere: Application to Infrasounds Emitted by Meteor Impacts. Space Science Reviews, 2017, 211, 547-570.	8.1	20
87	The whirlwinds of Elysium: A catalog and meteorological characteristics of â€œdust devilâ€•vortices observed by InSight on Mars. Icarus, 2021, 355, 114119.	2.5	20
88	Threeâ€dimensional turbulenceâ€resolving modeling of the Venusian cloud layer and induced gravity waves. Journal of Geophysical Research E: Planets, 2017, 122, 134-149.	3.6	19
89	Equatorial Oscillation and Planetary Wave Activity in Saturn's Stratosphere Through the Cassini Epoch. Journal of Geophysical Research E: Planets, 2018, 123, 246-261.	3.6	19
90	The DREAMS Experiment Onboard the Schiaparelli Module of the ExoMars 2016 Mission: Design, Performances and Expected Results. Space Science Reviews, 2018, 214, 1.	8.1	19

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91	Vortexâ€Dominated Aeolian Activity at InSight's Landing Site, Part 2: Local Meteorology, Transport Dynamics, and Model Analysis. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006514.	3.6	19
92	Stratospheric benzene and hydrocarbon aerosols detected in Saturnâ€™s auroral regions. Astronomy and Astrophysics, 2015, 580, A89.	5.1	19
93	An assessment of the impact of local processes on dust lifting in martian climate models. Icarus, 2015, 252, 212-227.	2.5	17
94	6th international conference on Mars polar science and exploration: Conference summary and five top questions. Icarus, 2018, 308, 2-14.	2.5	17
95	Mars's Twilight Cloud Band: A New Cloud Feature Seen During the Mars Year 34 Global Dust Storm. Geophysical Research Letters, 2020, 47, e2019GL084997.	4.0	16
96	Constraining Martian Regolith and Vortex Parameters From Combined Seismic and Meteorological Measurements. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006410.	3.6	16
97	Orbital radar, imagery, and atmospheric modeling reveal an aeolian origin for Abalos Mensa, Mars. Geophysical Research Letters, 2013, 40, 1334-1339.	4.0	15
98	The Origin of Observed Magnetic Variability for a Sol on Mars From InSight. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006505.	3.6	15
99	Katabatic jumps in the Martian northern polar regions. Icarus, 2018, 308, 197-208.	2.5	14
100	First quantification of relationship between dune orientation and sediment availability, Olympia Undae, Mars. Earth and Planetary Science Letters, 2018, 489, 241-250.	4.4	14
101	Seasonal variability in winds in the north polar region of Mars. Icarus, 2018, 308, 188-196.	2.5	14
102	ExoMars Atmospheric Mars Entry and Landing Investigations and Analysis (AMELIA). Space Science Reviews, 2019, 215, 1.	8.1	14
103	Anatomy of Continuous Mars SEIS and Pressure Data from Unsupervised Learning. Bulletin of the Seismological Society of America, 2021, 111, 2964-2981.	2.3	14
104	The DREAMS experiment on the ExoMars 2016 mission for the study of Martian environment during the dust storm season. , 2014, , .		13
105	Seasonal seismic activity on Mars. Earth and Planetary Science Letters, 2021, 576, 117171.	4.4	13
106	Distribution and time-variation of spire streaks at Pavonis Mons on Mars. Planetary and Space Science, 2011, 59, 672-682.	1.7	12
107	Stratospheric aftermath of the 2010 Storm on Saturn as observed by the TEXES instrument. I. Temperature structure. Icarus, 2016, 277, 196-214.	2.5	12
108	Global climate modeling of Saturn's atmosphere. Part III: Global statistical picture of zonostrophic turbulence in high-resolution 3D-turbulent simulations. Icarus, 2020, 345, 113705.	2.5	12

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109	InSight Pressure Data Recalibration, and Its Application to the Study of Longâ€Term Pressure Changes on Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	12
110	A Seasonally Recurrent Annular Cyclone in Mars Northern Latitudes and Observations of a Companion Vortex. Journal of Geophysical Research E: Planets, 2018, 123, 3020-3034.	3.6	11
111	Radiative-equilibrium model of Jupiterâ€™s atmosphere and application to estimating stratospheric circulations. Icarus, 2020, 351, 113935.	2.5	11
112	The Mars system revealed by the Martian Moons eXploration mission. Earth, Planets and Space, 2022, 74, .	2.5	11
113	Geophysical Observations of Phobos Transits by InSight. Geophysical Research Letters, 2020, 47, e2020GL089099.	4.0	10
114	The Mars Climate Database (version 4.3). , 0, , .		9
115	The DREAMS experiment flown on the ExoMars 2016 mission for the study of Martian environment during the dust storm season. Measurement: Journal of the International Measurement Confederation, 2018, 122, 484-493.	5.0	9
116	Mars perihelion cloud trails as revealed by MARCI: Mesoscale topographically focused updrafts and gravity wave forcing of high altitude clouds. Icarus, 2021, 362, 114411.	2.5	9
117	Seismic constraints from a Mars impact experiment using InSight and Perseverance. Nature Astronomy, 2022, 6, 59-64.	10.1	9
118	Troposphere-to-mesosphere microphysics of carbon dioxide ice clouds in a Mars Global Climate Model. Icarus, 2022, 385, 115098.	2.5	9
119	Global climate modeling of Saturnâ€™s atmosphere. Part IV: Stratospheric equatorial oscillation. Icarus, 2021, 354, 114042.	2.5	8
120	Search for Infrasound Signals in InSight Data Using Coupled Pressure/Ground Deformation Methods. Bulletin of the Seismological Society of America, 2021, 111, 3055-3064.	2.3	8
121	Marsâ€™ Background Free Oscillations. Space Science Reviews, 2019, 215, 1.	8.1	7
122	Comment on ''Observing desert dust devils with a pressure logger" by Lorenz (2012) â€“ insights on measured pressure fluctuations from large-eddy simulations. Geoscientific Instrumentation, Methods and Data Systems, 2012, 1, 151-154.	1.6	7
123	Spectral Analysis of the Martian Atmospheric Turbulence: InSight Observations. Geophysical Research Letters, 2022, 49, .	4.0	7
124	MOSAIC: A Satellite Constellation to Enable Groundbreaking Mars Climate System Science and Prepare for Human Exploration. Planetary Science Journal, 2021, 2, 211.	3.6	6
125	Joint evolution of equatorial oscillation and interhemispheric circulation in Saturnâ€™s stratosphere. Nature Astronomy, 2022, 6, 804-811.	10.1	6
126	Mesoscale Meteorology. , 2017, , 203-228.		5

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127	Preparing for InSight: Evaluation of the Blind Test for Martian Seismicity. Seismological Research Letters, 0, , .	1.9	5
128	Listening for the Landing: Seismic Detections of Perseverance's Arrival at Mars With InSight. Earth and Space Science, 2021, 8, e2020EA001585.	2.6	5
129	Nighttime convection in water-ice clouds at high northern latitudes on Mars. Icarus, 2022, 371, 114693.	2.5	5
130	Mapping the zonal winds of Jupiterâ€™s stratospheric equatorial oscillation. Astronomy and Astrophysics, 2021, 652, A125.	5.1	4
131	Turbulence in the Lower Atmosphere of Mars Enhanced by Transported Dust Particles. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE007066.	3.6	4
132	Investigation of magnetic field signals during vortex-induced pressure drops at InSight. Planetary and Space Science, 2022, 217, 105487.	1.7	3
133	Editorial: Topical Volume on Dust Devils. Space Science Reviews, 2016, 203, 1-4.	8.1	2
134	Large-Eddy Simulations of Dust Devils and Convective Vortices. Space Sciences Series of ISSI, 2017, , 245-275.	0.0	2
135	Questions to Heaven. Astronomy and Geophysics, 2021, 62, 6.22-6.25.	0.2	2
136	History and Applications of Dust Devil Studies. Space Sciences Series of ISSI, 2017, , 5-37.	0.0	1
137	Special Issue on Dust Devils. Space Sciences Series of ISSI, 2017, , 1-4.	0.0	1
138	Dust Devil Sediment Transport: From Lab to Field to Global Impact. Space Sciences Series of ISSI, 2017, , 377-426.	0.0	1
139	Polarimetry as a Tool for Observing Orographic Gravity Waves on Venus. Planetary Science Journal, 2021, 2, 96.	3.6	0