Philip T Metzger

List of Publications by Year
in descending order

52	852	567281 15	552781 26
papers	citations	h-index	g-index

55	55	55	521
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Jet-Induced Cratering of a Granular Surface with Application to Lunar Spaceports. Journal of Aerospace Engineering, 2009, 22, 24-32.	1.4	72
2	Apollo 12 Lunar Module exhaust plume impingement on Lunar Surveyor III. Icarus, 2011, 211, 1089-1102.	2.5	72
3	Phenomenology of soil erosion due to rocket exhaust on the Moon and the Mauna Kea lunar test site. Journal of Geophysical Research, 2011, 116, .	3.3	65
4	Commercial lunar propellant architecture: A collaborative study of lunar propellant production. Reach, 2019, 13, 100026.	0.7	65
5	Apollo video photogrammetry estimation of plume impingement effects. Icarus, 2011, 214, 46-52.	2.5	47
6	Affordable, Rapid Bootstrapping of the Space Industry and Solar System Civilization. Journal of Aerospace Engineering, 2013, 26, 18-29.	1.4	42
7	Granular contact force density of states and entropy in a modified Edwards ensemble. Physical Review E, 2004, 70, 051303.	2.1	40
8	ISRU Implications for Lunar and Martian Plume Effects. , 2009, , .		32
9	Space development and space science together, an historic opportunity. Space Policy, 2016, 37, 77-91.	1.5	29
10	Simulated asteroid materials based on carbonaceous chondrite mineralogies. Meteoritics and Planetary Science, 2019, 54, 2067-2082.	1.6	28
11	Estimation of Apollo Lunar Dust Transport using Optical Extinction Measurements. Acta Geophysica, 2015, 63, 568-599.	2.0	27
12	Craters Formed in Granular Beds by Impinging Jets of Gas. , 2009, , .		26
13	Permeability of JSC-1A: A lunar soil simulant. Icarus, 2011, 212, 383-389.	2.5	25
14	Role of collisions in erosion of regolith during a lunar landing. Physical Review E, 2013, 87, 022205.	2.1	25
15	Elegance of Disordered Granular Packings: A Validation of Edwardâ€™s Hypothesis. Physical Review Letters, 2005, 94, 148001.	7.8	22
16	Soil Test Apparatus for Lunar Surfaces. , 2010, , .		19
17	Measuring the fidelity of asteroid regolith and cobble simulants. Icarus, 2019, 321, 632-646.	2.5	19
18	Lagrangian Trajectory Modeling of Lunar Dust Particles. , 2008, , .		18

#	Article	IF	Citations
19	Thermal extraction of water ice from the lunar surface - A 3D numerical model. Planetary and Space Science, 2020, 193, 105082.	1.7	18
20	Cratering and Blowing Soil by Rocket Engines during Lunar Landings. Advances in Engineering, 2010, , 551-576.	0.1	14
21	Htheorem for contact forces in granular materials. Physical Review E, 2008, 77, 011307.	2.1	12
22	Modification of Roberts' Theory for Rocket Exhaust Plumes Eroding Lunar Soil. , 2008, , .		12
23	Special Issue on In Situ Resource Utilization. Journal of Aerospace Engineering, 2013, 26, 1-4.	1.4	12
24	Apollo Video Photogrammetry Estimation of Plume Impingement Effects. , 2008, , .		10
25	Thermal Extraction of Volatiles from Lunar and Asteroid Regolith in Axisymmetric Crankâ€"Nicolson Modeling. Journal of Aerospace Engineering, 2020, 33, .	1.4	10
26	Numerical estimations of lunar regolith trajectories and damage potential due to rocket plumes. Acta Astronautica, 2022, 195, 169-182.	3.2	9
27	Comment on â€œMechanical analog of temperature for the description of force distribution in static granular packingsâ€. Physical Review E, 2004, 69, 053301; discussion 053302.	2.1	8
28	Off Earth Landing and Launch Pad Constructionâ€"A Critical Technology for Establishing a Long-Term Presence on Extraterrestrial Surfaces. , 2021, , .		7
29	Instant Landing Pads for Lunar Missions. , 2021, , .		6
30	The Physical State of Lunar Soil in the Permanently Shadowed Craters of the Moon. , 2010, , .		5
31	Design, Test, and Simulation of Lunar and Mars Landing Pad Soil Stabilization Built with In Situ Rock Utilization. , 2016, , .		5
32	Phobos regolith simulants PGI-1 and PCA-1. Advances in Space Research, 2021, 67, 3308-3327.	2.6	5
33	In situ disdrometer calibration using multiple DSD moments. Acta Geophysica, 2014, 62, 1450-1477.	2.0	4
34	Rocket Exhaust Blowing Soil in Near Vacuum Conditions Is Faster than Predicted by Continuum Scaling Laws. , 2016, , .		4
35	A phenomenological relationship between vertical air motion and disdrometer derived A - b coefficients. Atmospheric Research, 2018, 208, 94-105.	4.1	4
36	Force Density Function Relationships in 2-D Granular Media. SIAM Journal on Applied Mathematics, 2005, 65, 1855-1869.	1.8	3

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37	Hyperstaticity and loops in frictional granular packings. , 2009, , .		3
38	Photogrammetry and ballistic analysis of a high-flying projectile in the STS-124 space shuttle launch. Acta Astronautica, 2010, 67, 217-229.	3.2	3
39	Further Analysis on the Mystery of the Surveyor III Dust Deposits. , 2012, , .		3
40	Model for asteroid regolith to guide simulant development. Icarus, 2020, 350, 113904.	2.5	3
41	The Damage to Lunar Orbiting Spacecraft Caused by the Ejecta of Lunar Landers. , 2021, , .		3
42	Moons are planets: Scientific usefulness versus cultural teleology in the taxonomy of planetary science. Icarus, 2021, , 114768.	2.5	3
43	Analysis of Thermal/Water Propulsion for CubeSats that Refuel in Space. , 2016, , .		2
44	The reclassification of asteroids from planets to non-planets. Icarus, 2019, 319, 21-32.	2.5	2
45	NASA Lunabotics Robotic Mining Competition 10th Anniversary (2010â€“2019): Taxonomy and Technology Review. , 2021, , .		2
46	Deep Regolith Cratering and Plume Effects Modeling for Lunar Landing Sites. , 2021, , .		2
47	Spatial and Temporal Extrapolation of Disdrometer Size Distributions Based on a Lagrangian Trajectory Model of Falling Rain. The Open Atmospheric Science Journal, 2009, 3, 172-186.	0.5	2
48	Pad for Humanity: Lunar Spaceports as Critical Shared Infrastructure. , 2021, , .		1
49	Rocket Cratering in Simulated Lunar and Martian Environments. , 2010, , .		0
50	Practical and Economic Rocket Mining of Lunar Ice. , 2021, , .		0
51	Evaluation of Different RANS Turbulence Models for Rocket Plume on Mars Environment. , 2022, , .		0
52	Rocket Plume Interacting with Mars Soil Particulates. , 2022, , .		0