Gerhard Wurm

List of Publications by Year
in descending order

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98
papers

3,037
citations

218677
26
h-index

189892
50
g-index

101
all docs

101
docs citations

101
times ranked

1664
citing authors

#	Article	IF	Citations
1	The Growth Mechanisms of Macroscopic Bodies in Protoplanetary Disks. Annual Review of Astronomy and Astrophysics, 2008, 46, 21-56.	24.3	672
2	Experiments on Preplanetary Dust Aggregation. Icarus, 1998, 132, 125-136.	2.5	172
3	Growth of planetesimals by impacts at â^¼25 m/s. Icarus, 2005, 178, 253-263.	2.5	156
4	High-velocity dust collisions: forming planetesimals in a fragmentation cascade with final accretion. Monthly Notices of the Royal Astronomical Society, 2009, 393, 1584-1594.	4.4	107
5	Contacts of Water Ice in Protoplanetary Disksâ€"Laboratory Experiments. Astrophysical Journal, 2019, 873, 58.	4.5	100
6	COLLISIONS OF CO₂ ICE GRAINS IN PLANET FORMATION. Astrophysical Journal, 2016, 818, 16.	4.5	80
7	PHOTOPHORETIC SEPARATION OF METALS AND SILICATES: THE FORMATION OF MERCURY-LIKE PLANETS AND METAL DEPLETION IN CHONDRITES. Astrophysical Journal, 2013, 769, 78.	4.5	78
8	The Brownian Motion of Dust Particles in the Solar Nebula: An Experimental Approach to the Problem of Pre-planetary Dust Aggregation. Icarus, 1996, 124, 441-451.	2.5	70
9	Sticking Properties of Silicates in Planetesimal Formation Revisited. Astrophysical Journal, 2019, 874, 60.	4.5	66
10	Concentration and sorting of chondrules and CAIs in the late Solar Nebula. Icarus, 2006, 180, 487-495.	2.5	48
11	ICE GRAIN COLLISIONS IN COMPARISON: CO₂, H₂O, AND THEIR MIXTURES. Astrophysical Journal, 2016, 827, 63.	4.5	48
12	Electrical charging overcomes the bouncing barrier in planet formation. Nature Physics, 2020, 16, 225-229.	16.7	48
13	Dust Eruptions by Photophoresis and Solid State Greenhouse Effects. Physical Review Letters, 2006, 96, 134301.	7.8	45
14	Light-induced disassembly of dusty bodies in inner protoplanetary discs: implications for the formation of planets. Monthly Notices of the Royal Astronomical Society, 2007, 380, 683-690.	4.4	42
15	The martian soil as a planetary gas pump. Nature Physics, 2014, 10, 17-20.	16.7	42
16	Impact angle influence in high velocity dust collisions during planetesimal formation. Icarus, 2011, 215, 596-598.	2.5	41
17	FROM PLANETESIMALS TO DUST: LOW-GRAVITY EXPERIMENTS ON RECYCLING SOLIDS AT THE INNER EDGES OF PROTOPLANETARY DISKS. Astrophysical Journal, 2013, 763, 11.	4.5	40
18	Breaking the ice: planetesimal formation at the snowline. Monthly Notices of the Royal Astronomical Society: Letters, 2011, 418, L1-L5.	3.3	38

#	ARTICLE	IF	CITATIONS
19	Aerodynamical sticking of dust aggregates. Physical Review E, 2001, 64, 046301.	2.1	36
20	Greenhouse and thermophoretic effects in dust layers: The missing link for lifting of dust on Mars. Geophysical Research Letters, 2008, 35, .	4.0	33
21	Experiments on the photophoretic motion of chondrules and dust aggregatesâ€"Indications for the transport of matter in protoplanetary disks. Icarus, 2010, 208, 482-491.	2.5	33
22	Saltation under Martian gravity and its influence on the global dust distribution. Icarus, 2018, 306, 25-31.	2.5	33
23	An Experimental Study on the Structure of Cosmic Dust Aggregates and Their Alignment by Motion Relative to Gas. Astrophysical Journal, 2000, 529, L57-L60.	4.5	30
24	Experiments on negative photophoresis and application to the atmosphere. Atmospheric Environment, 2008, 42, 2682-2690.	4.1	30
25	Sticking and restitution in collisions of charged sub-mm dielectric grains. Journal of Physics Communications, 2018, 2, 095009.	1.2	30
26	Ejection of dust by elastic waves in collisions between millimeter- and centimeter-sized dust aggregates at16.5to37.5mâˆ•simpact velocities. Physical Review E, 2005, 71, 021304.	2.1	29
27	On the Importance of Gas Flow through Porous Bodies for the Formation of Planetesimals. Astrophysical Journal, 2004, 606, 983-987.	4.5	28
28	Outward transport of CAIs during FUâ€Orionis events. Meteoritics and Planetary Science, 2009, 44, 689-699.	1.6	27
29	The implications of particle rotation on the effect of photophoresis. Monthly Notices of the Royal Astronomical Society, 2012, 420, 183-186.	4.4	27
30	FAILED GROWTH AT THE BOUNCING BARRIER IN PLANETESIMAL FORMATION. Astrophysical Journal, 2016, 827, 110.	4.5	27
31	Eolian Erosion of Dusty Bodies in Protoplanetary Disks. Astrophysical Journal, 2006, 648, 1219-1227.	4.5	26
32	Self-Sustained Levitation of Dust Aggregate Ensembles by Temperature-Gradient-Induced Overpressures. Physical Review Letters, 2009, 103, 215502.	7.8	26
33	Ice aggregate contacts at the nm-scale. Monthly Notices of the Royal Astronomical Society, 2014, 437, 690-702.	4.4	26
34	Seeding the Formation of Mercurys: An Iron-sensitive Bouncing Barrier in Disk Magnetic Fields. Astrophysical Journal, 2018, 869, 45.	4.5	26
35	Preplanetary scavengers: Growing tall in dust collisions. Astronomy and Astrophysics, 2013, 559, A123.	5.1	25
36	Dust ejection from planetary bodies by temperature gradients: Laboratory experiments. Icarus, 2011, 212, 935-940.	2.5	24

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37	Growing into and out of the bouncing barrier in planetesimal formation. Astronomy and Astrophysics, 2017, 600, A103.	5.1	23
38	Scattering matrices of martian dust analogs at 488nm and 647nm. Icarus, 2015, 250, 83-94.	2.5	22
39	Understanding planet formation using microgravity experiments. Nature Reviews Physics, 2021, 3, 405-421.	26.6	22
40	Impacts into weak dust targets under microgravity and the formation of planetesimals. Icarus, 2007, 191, 779-789.	2.5	21
41	Is There a Temperature Limit in Planet Formation at 1000 K?. Astrophysical Journal, 2017, 846, 48.	4.5	21
42	The deâ€agglomeration and dispersion of small dust particlesâ€"Principles and applications. Review of Scientific Instruments, 1996, 67, 589-595.	1.3	20
43	Thermal creep-assisted dust lifting on Mars: Wind tunnel experiments for the entrainment threshold velocity. Journal of Geophysical Research E: Planets, 2015, 120, 1346-1356.	3.6	20
44	An insolation activated dust layer on Mars. Icarus, 2015, 260, 23-28.	2.5	18
45	A challenge for martian lightning: Limits of collisional charging at low pressure. Icarus, 2019, 331, 103-109.	2.5	18
46	Coagulation as Unifying Element for Interstellar Polarization. Astrophysical Journal, 2002, 567, 370-375.	4.5	18
47	Composition and Size Dependent Sorting in Preplanetary Growth: Seeding the Formation of Mercury-like Planets. Planetary Science Journal, 2020, 1, 23.	3.6	18
48	Radiative cooling within illuminated layers of dust on (pre)-planetary surfaces and its effect on dust ejection. Icarus, 2011, 211, 832-838.	2.5	17
49	The Allende multicompound chondrule (<scp>ACC</scp>)â€"Chondrule formation in a local superâ€dense region of the early solar system. Meteoritics and Planetary Science, 2017, 52, 906-924.	1.6	16
50	Measurements of dipole moments and a Q-patch model of collisionally charged grains. New Journal of Physics, 2020, 22, 093025.	2.9	16
51	Radiation pressure forces on individual micron-size dust particles: a new experimental approach. Journal of Quantitative Spectroscopy and Radiative Transfer, 2004, 89, 179-189.	2.3	15
52	Photophoresis on polydisperse basalt microparticles under microgravity. Journal of Aerosol Science, 2014, 76, 126-137.	3.8	14
53	Wind erosion on Mars and other small terrestrial planets. Icarus, 2020, 337, 113438.	2.5	14
54	Lifting grains by the transient low pressure in a martian dust devil. Icarus, 2020, 339, 113569.	2.5	14

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55	The cosmic dust aggregation experiment CODAG. Measurement Science and Technology, 1999, 10, 836-844.	2.6	13
56	Are Pebble Pile Planetesimals Doomed?. Monthly Notices of the Royal Astronomical Society, 2019, 484, 2779-2785.	4.4	13
57	Experimental Study of Light Scattering by Large Dust Aggregates Consisting of Micronâ€sized SiO2Monospheres. Astrophysical Journal, 2003, 595, 891-899.	4.5	13
58	Gas flow within Martian soil: experiments on granular Knudsen compressors. Astrophysics and Space Science, 2017, 362, 1.	1.4	12
59	Dense Particle Clouds in Laboratory Experiments in Context of Drafting and Streaming Instability. Astrophysical Journal, 2019, 872, 3.	4.5	12
60	A Smoking Gun for Planetesimal Formation: Charge-driven Growth into a New Size Range. Astrophysical Journal Letters, 2021, 908, L22.	8.3	12
61	ARISE: A granular matter experiment on the International Space Station. Review of Scientific Instruments, 2019, 90, .	1.3	11
62	Constraints on compound chondrule formation from laboratory high-temperature collisions. Icarus, 2019, 319, 133-139.	2.5	11
63	Planetesimals in rarefied gas: wind erosion in slip flow. Monthly Notices of the Royal Astronomical Society, 2020, 493, 5456-5463.	4.4	11
64	Light scattering experiments with micron-sized dust aggregates: results on ensembles of SiO2 monospheres and of irregularly shaped graphite particles. Journal of Quantitative Spectroscopy and Radiative Transfer, 2004, 89, 371-384.	2.3	10
65	PHOTOPHORETIC STRENGTH ON CHONDRULES. 2. EXPERIMENT. Astrophysical Journal, 2014, 792, 73.	4.5	10
66	Photophoretic force on aggregate grains. Monthly Notices of the Royal Astronomical Society, 2016, 455, 2582-2591.	4.4	9
67	Planetesimal Formation in the Warm, Inner Disk: Experiments with Tempered Dust. Astrophysical Journal, 2017, 837, 59.	4.5	8
68	Analog Experiments on Tensile Strength of Dusty and Cometary Matter. Icarus, 2017, 296, 110-116.	2.5	8
69	Tracing Thermal Creep Through Granular Media. Microgravity Science and Technology, 2017, 29, 325-330.	1.4	8
70	Onset of planet formation in the warm inner disk. Astronomy and Astrophysics, 2019, 629, A66.	5.1	8
71	Drifting inwards in protoplanetary discs I Sticking of chondritic dust at increasing temperatures. Astronomy and Astrophysics, 2020, 638, A151.	5.1	8
72	Experiments on light scattering and extinction by small, micrometer-sized aggregates of spheres. Applied Optics, 2002, 41, 1175.	2.1	7

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73	PHOTOPHORETIC STRENGTH ON CHONDRULES. 1. MODELING. Astrophysical Journal, 2013, 778, 101.	4.5	7
74	Amplification of dust loading in Martian dust devils by self-shadowing. Icarus, 2016, 274, 249-252.	2.5	7
75	Laboratory Experiments on the Motion of Dense Dust Clouds in Protoplanetary Disks. Astrophysical Journal Letters, 2019, 886, L36.	8.3	7
76	Analog experiments on thermal creep gas flow through Martian soil. Planetary and Space Science, 2019, 166, 131-134.	1.7	7
77	Laboratory impact splash experiments to simulate asteroid surfaces. Icarus, 2020, 341, 113646.	2.5	7
78	Observation of bottom-up formation for charged grain aggregates related to pre-planetary evolution beyond the bouncing barrier. Astronomy and Astrophysics, 2021, 650, A77.	5.1	7
79	Violation of triboelectric charge conservation on colliding particles. Physical Review E, 2021, 104, L022601.	2.1	6
80	Lifting of Tribocharged Grains by Martian Winds. Planetary Science Journal, 2021, 2, 238.	3.6	6
81	Ice particles trapped by temperature gradients at mbar pressure. Review of Scientific Instruments, 2011, 82, 115105.	1.3	5
82	Cosmic radiation does not prevent collisional charging in (pre)-planetary atmospheres. Icarus, 2021, 355, 114127.	2.5	5
83	Experimental study of clusters in dense granular gas and implications for the particle stopping time in protoplanetary disks. Icarus, 2021, 360, 114307.	2.5	5
84	Corona discharge of a vibrated insulating box with granular medium. Granular Matter, 2021, 23, 1.	2.2	5
85	Accretion of eroding pebbles and planetesimals in planetary envelopes. Astronomy and Astrophysics, 2020, 641, A99.	5.1	5
86	Radiative forces on macroscopic porous bodies in protoplanetary disks: laboratory experiments. Astronomy and Astrophysics, 2013, 558, A70.	5.1	4
87	Lifting particles in martian dust devils by pressure excursions. Planetary and Space Science, 2017, 145, 9-13.	1.7	4
88	Tracing Thermal Creep and Thermophoresis in Porous Structures at Low Ambient Pressure and Low Gravity. Microgravity Science and Technology, 2017, 29, 485-491.	1.4	4
89	Aggregation of sub-mm particles in strong electric fields under microgravity conditions. Icarus, 2022, 373, 114766.	2.5	4
90	Charge transfer of pre-charged dielectric grains impacting electrodes in strong electric fields. Journal of Electrostatics, 2022, 117, 103705.	1.9	4

#	ARTICLE	IF	CITATIONS
91	Selective Aggregation Experiments on Planetesimal Formation and Mercury-Like Planets. Geosciences (Switzerland), 2018, 8, 310.	2.2	3
92	Fractal Aggregates in Space. , 2002, , 89-102.		3
93	Destruction of eccentric planetesimals by ram pressure and erosion. Astronomy and Astrophysics, 2020, 644, A20.	5.1	3
94	Traveling to the origins of the Solar System. Science, 2019, 364, 230-231.	12.6	3
95	Optical particle and particle motion analysis with PATRICIA*. Measurement Science and Technology, 2002, 13, 796-802.	2.6	2
96	Measuring electric dipole moments of trapped sub-mm particles. Journal of Electrostatics, 2022, 115, 103637.	1.9	2
97	Drop tower experiments on sticking, restructuring, and fragmentation of preplanetary dust aggregates. Microgravity Science and Technology, 2001, 13, 29-34.	1.4	1
98	Collisional Charging in the Low Pressure Range of Protoplanetary Disks. Monthly Notices of the Royal Astronomical Society, 0, , .	4.4	1