Thorsten PÃ¶schel

List of Publications by Year
in descending order

135 papers	5,349 citations	126907 33 h-index	102487 66 g-index
140 all docs	140 docs citations	140 times ranked	2681 citing authors

#	Article	IF	Citations
1	Model for collisions in granular gases. Physical Review E, 1996, 53, 5382-5392.	2.1	695
2	Coefficient of restitution of colliding viscoelastic spheres. Physical Review E, 1999, 60, 4465-4472.	2.1	309
3	Particle-based simulation of powder application in additive manufacturing. Powder Technology, 2016, 288, 96-102.	4.2	271
4	The granular phase diagram. Journal of Statistical Physics, 1997, 86, 1385-1395.	1.2	231
5	Coefficient of normal restitution of viscous particles and cooling rate of granular gases. Physical Review E, 1998, 57, 650-654.	2.1	194
6	Coefficient of restitution and linearâ€“dashpot model revisited. Granular Matter, 2007, 9, 465-469.	2.2	145
7	Attractive particle interaction forces and packing density of fine glass powders. Scientific Reports, 2014, 4, 6227.	3.3	138
8	Collision dynamics of granular particles with adhesion. Physical Review E, 2007, 76, 051302.	2.1	134
9	Rotating robots move collectively and self-organize. Nature Communications, 2018, 9, 931.	12.8	116
10	Dissipative properties of vibrated granular materials. Physical Review E, 1999, 59, 4422-4425.	2.1	113
11	Velocity distribution in granular gases of viscoelastic particles. Physical Review E, 2000, 61, 5573-5587.	2.1	92
12	Energy Dissipation in Driven Granular Matter in the Absence of Gravity. Physical Review Letters, 2013, 111, 018001.	7.8	89
13	Coefficient of restitution for viscoelastic spheres: The effect of delayed recovery. Physical Review E, 2008, 78, 051304.	2.1	87
14	Close-Packed Floating Clusters: Granular Hydrodynamics Beyond the Freezing Point?. Physical Review Letters, 2003, 91, 024301.	7.8	84
15	Deviation from Maxwell distribution in granular gases with constant restitution coefficient. Physical Review E, 2000, 61, 2809-2812.	2.1	80
16	VIOLATION OF MOLECULAR CHAOS IN DISSIPATIVE GASES. International Journal of Modern Physics C, 2002, 13, 1263-1272.	1.7	69
17	Origins of barchan dune asymmetry: Insights from numerical simulations. Aeolian Research, 2014, 12, 121-133.	2.7	66
18	Translations and Rotations Are Correlated in Granular Gases. Physical Review Letters, 2007, 98, 128001.	7.8	65

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19	Velocity Distribution of a Homogeneously Driven Two-Dimensional Granular Gas. Physical Review Letters, 2017, 118, 198003.	7.8	64
20	Transient Structures in a Granular Gas. Physical Review Letters, 2004, 93, 134301.	7.8	62
21	Movers and shakers: Granular damping in microgravity. Physical Review E, 2011, 84, 011301.	2.1	61
22	Coefficient of tangential restitution for viscoelastic spheres. European Physical Journal E, 2008, 27, 107-114.	1.6	56
23	Breakdown of the Sonine expansion for the velocity distribution of granular gases. Europhysics Letters, 2006, 74, 424-430.	2.0	53
24	Coefficient of restitution as a fluctuating quantity. Physical Review E, 2011, 84, 041306.	2.1	49
25	Granular dampers for the reduction of vibrations of an oscillatory saw. Physica A: Statistical Mechanics and Its Applications, 2012, 391, 4442-4447.	2.6	48
26	Numerical modeling of the wind flow over a transverse dune. Scientific Reports, 2013, 3, 2858.	3.3	46
27	Numerical investigations of the evolution of sandpiles. Physica A: Statistical Mechanics and Its Applications, 1994, 202, 390-401.	2.6	45
28	Hydrodynamics and transport coefficients for dilute granular gases. Physical Review E, 2003, 67, 061304.	2.1	43
29	Increasing temperature of cooling granular gases. Nature Communications, 2018, 9, 797.	12.8	39
30	Collision of viscoelastic spheres: Compact expressions for the coefficient of normal restitution. Physical Review E, 2011, 84, 021302.	2.1	38
31	Morphodynamic modeling of aeolian dunes: Review and future plans. European Physical Journal: Special Topics, 2014, 223, 2269-2283.	2.6	37
32	Recurrent clogging and density waves in granular material flowing through a narrow pipe. Journal De Physique, I, 1994, 4, 499-506.	1.2	37
33	Molecular Dynamics of Arbitrarily Shaped Granular Particles. Journal De Physique, I, 1995, 5, 1431-1455.	1.2	37
34	Origin of Granular Capillarity Revealed by Particle-Based Simulations. Physical Review Letters, 2017, 118, 218001.	7.8	34
35	Packings of micron-sized spherical particles â€“ Insights from bulk density determination, X-ray microtomography and discrete element simulations. Advanced Powder Technology, 2020, 31, 2293-2304.	4.1	34
36	Granular dampers: does particle shape matter?. New Journal of Physics, 2016, 18, 073049.	2.9	33

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37	Long-time behavior of granular gases with impact-velocity dependent coefficient of restitution. Physica A: Statistical Mechanics and Its Applications, 2003, 325, 274-283.	2.6	31
38	Ratcheting and tumbling motion of Vibrots. New Journal of Physics, 2016, 18, 123001.	2.9	31
39	Complex Velocity Dependence of the Coefficient of Restitution of a Bouncing Ball. Physical Review Letters, 2013, 110, 254301.	7.8	28
40	Helical inner-wall texture prevents jamming in granular pipe flows. Soft Matter, 2015, 11, 4295-4305.	2.7	28
41	Granular hydrodynamics and pattern formation in vertically oscillated granular disk layers. Journal of Fluid Mechanics, 2008, 597, 119-144.	3.4	27
42	Micromechanical Behavior of DNAâ€1A Lunar Regolith Simulant in Comparison to Ottawa Sand. Journal of Geophysical Research: Solid Earth, 2019, 124, 8077-8100.	3.4	27
43	The MyoRobot: A novel automated biomechatronics system to assess voltage/Ca2+ biosensors and active/passive biomechanics in muscle and biomaterials. Biosensors and Bioelectronics, 2018, 102, 589-599.	10.1	24
44	Surfactants and rotelles in active chiral fluids. Science Advances, 2021, 7, .	10.3	24
45	Correlation of spin and velocity in the homogeneous cooling state of a granular gas of rough particles. European Physical Journal: Special Topics, 2009, 179, 91-111.	2.6	23
46	Oblique impact of frictionless spheres: on the limitations of hard sphere models for granular dynamics. Granular Matter, 2012, 14, 115-120.	2.2	23
47	Positron emission particle tracking in fluidized beds with secondary gas injection. Powder Technology, 2015, 279, 113-122.	4.2	23
48	Correction of beam hardening in X-ray radiograms. Review of Scientific Instruments, 2019, 90, 025108.	1.3	23
49	Fractal Substructure of a Nanopowder. Physical Review Letters, 2008, 100, 218002.	7.8	22
50	Swirling granular matter: From rotation to reptation. Physical Review E, 1996, 54, R4560-R4563.	2.1	20
51	Langevin equation approach to granular flow in a narrow pipe. Journal of Statistical Physics, 1997, 86, 421-430.	1.2	20
52	Pattern formation in a horizontally shaken granular submonolayer. Granular Matter, 2013, 15, 377-387.	2.2	20
53	Stochastic behavior of the coefficient of normal restitution. Physical Review E, 2014, 89, 022205.	2.1	20
54	Scale and water effects on the friction angles of two granular soils with different roughness. Powder Technology, 2021, 377, 813-826.	4.2	20

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55	Onset of fluidization in vertically shaken granular material. Physical Review E, 2000, 62, 1361-1367.	2.1	18
56	An instrument for studying granular media in low-gravity environment. Review of Scientific Instruments, 2018, 89, 075103.	1.3	18
57	Convection in horizontally shaken granular material. European Physical Journal E, 2000, 1, 55-59.	1.6	17
58	Coefficient of restitution of aspherical particles. Physical Review E, 2014, 90, 052204.	2.1	17
59	Stable algorithm for event detection in event-driven particle dynamics. Computational Particle Mechanics, 2014, 1, 191-198.	3.0	17
60	Heaping and secondary flows in sheared granular materials. New Journal of Physics, 2016, 18, 113006.	2.9	17
61	Packing structure of semiflexible rings. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 3382-3387.	7.1	17
62	Two-dimensional airflow modeling underpredicts the wind velocity over dunes. Scientific Reports, 2015, 5, 16572.	3.3	16
63	Probing the validity of an effective-one-particle description of granular dampers in microgravity. Granular Matter, 2015, 17, 73-82.	2.2	16
64	Impact of high-energy tails on granular gas properties. Physical Review E, 2006, 74, 041302.	2.1	15
65	Nonuniformities in the Angle of Repose and Packing Fraction of Large Heaps of Particles. Physical Review Letters, 2012, 109, 128001.	7.8	15
66	Can we obtain the coefficient of restitution from the sound of a bouncing ball?. Physical Review E, 2016, 93, 032901.	2.1	15
67	Interactions of a short hyaluronan chain with a phospholipid membrane. Colloids and Surfaces B: Biointerfaces, 2019, 184, 110539.	5.0	15
68	Soft particles reinforce robotic grippers: robotic grippers based on granular jamming of soft particles. Granular Matter, 2022, 24, 1.	2.2	15
69	Granular jet impact: probing the ideal fluid description. Journal of Fluid Mechanics, 2014, 751, 601-626.	3.4	14
70	Relaxation of a spring with an attached granular damper. New Journal of Physics, 2013, 15, 093023.	2.9	13
71	Fluidization of a horizontally driven granular monolayer. Physical Review E, 2015, 91, 062213.	2.1	13
72	Hydrodynamic memory can boost enormously driven nonlinear diffusion and transport. Physical Review E, 2020, 102, 012139.	2.1	13

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73	Absence of Subharmonic Response in Vibrated Granular Systems under Microgravity Conditions. Physical Review Applied, 2015, 3, .	3.8	12
74	Nonequilibrium Phase Transition to Anomalous Diffusion and Transport in a Basic Model of Nonlinear Brownian Motion. Physical Review Letters, 2021, 127, 110601.	7.8	12
75	Finite-range viscoelastic subdiffusion in disordered systems with inclusion of inertial effects. New Journal of Physics, 2020, 22, 113018.	2.9	12
76	Vertically shaken column of spheres. Onset of fluidization. European Physical Journal E, 2001, 4, 233-239.	1.6	11
77	Introduction of a New Technique to Measure the Coefficient of Restitution for Nanoparticles. Chemie-Ingenieur-Technik, 2014, 86, 365-374.	0.8	11
78	Steepest descent ballistic deposition of complex shaped particles. Journal of Computational Physics, 2016, 308, 421-437.	3.8	11
79	Janssen effect in dynamic particulate systems. Physical Review E, 2019, 100, 022902.	2.1	11
80	MyoRobot 2.0: An advanced biomechatronics platform for automated, environmentally controlled skeletal muscle single fiber biomechanics assessment employing inbuilt real-time optical imaging. Biosensors and Bioelectronics, 2019, 138, 111284.	10.1	11
81	Granular dampers in microgravity: sharp transition between modes of operation. Granular Matter, 2020, 22, 1.	2.2	11
82	Hydrodynamics of binary mixtures of granular gases with stochastic coefficient of restitution. Journal of Fluid Mechanics, 2015, 781, 595-621.	3.4	10
83	Isotropy of sphere packings in a cylindrical confinement. Chemical Engineering Journal, 2019, 377, 119820.	12.7	10
84	Fingerprints of viscoelastic subdiffusion in random environments: Revisiting some experimental data and their interpretations. Physical Review E, 2021, 104, 034125.	2.1	10
85	Dissipation of Energy by Dry Granular Matter in a Rotating Cylinder. Scientific Reports, 2016, 6, 26833.	3.3	9
86	Impact on granular bed: validation of discrete element modeling results by means of two-dimensional finite element analysis. Granular Matter, 2020, 22, 1.	2.2	9
87	Recurrent inflation and collapse in horizontally shaken granular materials. Physical Review E, 2012, 85, 031307.	2.1	8
88	Orientation-dependent properties of nanoparticle impact. Physical Review E, 2018, 98, 022902.	2.1	8
89	The microscopic structure of mono-disperse granular heaps and sediments of particles on inclined surfaces. Soft Matter, 2016, 12, 3184-3188.	2.7	7
90	Influence of particle shape in additive manufacturing: Discrete element simulations of polyamide 11 and polyamide 12. Additive Manufacturing, 2020, 36, 101421.	3.0	7

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91	Collective granular dynamics in a shaken container at low gravity conditions. , 2013, , .		6
92	Homogeneous cooling state of dilute granular gases of charged particles. Physics of Fluids, 2017, 29, 083303.	4.0	6
93	Limitation of stochastic rotation dynamics to represent hydrodynamic interaction between colloidal particles. Physics of Fluids, 2018, 30, .	4.0	6
94	The MyoRobot technology discloses a premature biomechanical decay of skeletal muscle fiber bundles derived from R349P desminopathy mice. Scientific Reports, 2019, 9, 10769.	3.3	6
95	Granular Leidenfrost effect in microgravity. Granular Matter, 2020, 22, 1.	2.2	6
96	Fluctuations and like-torque clusters at the onset of the discontinuous shear thickening transition in granular materials. Communications Physics, 2021, 4, .	5.3	6
97	Characteristics of large three-dimensional heaps of particles produced by ballistic deposition from extended sources. Philosophical Magazine, 2013, 93, 4090-4107.	1.6	5
98	Stable algorithm for event detection in event-driven particle dynamics: logical states. Computational Particle Mechanics, 2016, 3, 383-388.	3.0	5
99	Particle-based simulations of powder coating in additive manufacturing suggest increase in powder bed roughness with coating speed. EPJ Web of Conferences, 2017, 140, 15013.	0.3	5
100	How to measure the volume fraction of granular assemblies using x-ray radiography. Powder Technology, 2019, 356, 439-442.	4.2	5
101	X-ray tomography in micro-gravity. Review of Scientific Instruments, 2019, 90, 105103.	1.3	5
102	Migrating Shear Bands in Shaken Granular Matter. Physical Review Letters, 2020, 125, 048001.	7.8	5
103	Micro-mechanics and dynamics of cohesive particle systems. Granular Matter, 2013, 15, 389-390.	2.2	4
104	Self-organized shocks in the sedimentation of a granular gas. Physical Review E, 2015, 91, 062214.	2.1	4
105	Vertical motion of particles in vibration-induced granular capillarity. EPJ Web of Conferences, 2017, 140, 16008.	0.3	4
106	Isotropic stochastic rotation dynamics. Physical Review Fluids, 2017, 2, .	2.5	4
107	Weight of an hourglassâ€"Theory and experiment in quantitative comparison. American Journal of Physics, 2017, 85, 98-107.	0.7	3
108	Liquidlike sloshing dynamics of monodisperse granulate. Physical Review E, 2017, 96, 040901.	2.1	3

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109	Ping-pong ball cannon: Why do barrel and balls fly in the same direction?. American Journal of Physics, 2019, 87, 255-263.	0.7	3
110	Growing Old Too Early: Skeletal Muscle Single Fiber Biomechanics in Ageing R349P Desmin Knock-in Mice Using the MyoRobot Technology. International Journal of Molecular Sciences, 2020, 21, 5501.	4.1	3
111	Robust event-driven particle tracking in complex geometries. Computer Physics Communications, 2020, 254, 107229.	7.5	3
112	Can Minkowski tensors of a simply connected porous microstructure characterize its permeability?. Physics of Fluids, 2021, 33, 042010.	4.0	3
113	Insufficient evidence for ageing in protein dynamics. Nature Physics, 2021, 17, 773-774.	16.7	3
114	Spontaneous formation of density waves in granular matter under swirling excitation. Physics of Fluids, 2021, 33, .	4.0	3
115	Collective motion of granular matter subjected to swirling excitation. Physical Review E, 2022, 105, L022902.	2.1	3
116	Residual Defect Density in Random Disks Deposits. Scientific Reports, 2015, 5, 12703.	3.3	2
117	Structure of a three-dimensional nano-powder subjected to repeated fragmentation and sedimentation. New Journal of Physics, 2015, 17, 013024.	2.9	2
118	Instability of smoothed particle hydrodynamics applied to Poiseuille flows. Computers and Mathematics With Applications, 2018, 76, 1447-1457.	2.7	2
119	Inelastic collapse of perfectly inelastic particles. Communications Physics, 2019, 2, .	5.3	2
120	Impact in granular matter: Force at the base of a container made with one movable wall. Physical Review E, 2020, 102, 012903.	2.1	2
121	Event-driven DEM of soft spheres. , 2013, , .		1
122	Fractal substructure of a nanopowder generated by repeated fragmentation and sedimentation: the rÃ´le of the dust. Granular Matter, 2016, 18, 1.	2.2	1
123	Homogenization of granular pipe flow by means of helical inner-wall texture. EPJ Web of Conferences, 2017, 140, 03069.	0.3	1
124	Systematic Onset of Periodic Patterns in Random Disk Packings. Physical Review Letters, 2018, 120, 148002.	7.8	1
125	Stochastic Nature of Particle Collisions and its Impact on Granular Material Properties. , 2019, , 565-590.		1
126	A first-order segregation phenomenon in fluid-immersed granular systems. Powder Technology, 2020, 373, 357-361.	4.2	1

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127	Transport coefficients for granular gases of electrically charged particles. Journal of Fluid Mechanics, 2022, 935, .	3.4	1
128	Hydrodynamics at the Navier-Stokes level applied to fast, transient, supersonic granular flows. , 2012, , .		0
129	Subharmonic instability of a self-organized granular jet. Scientific Reports, 2016, 6, 22520.	3.3	0
130	Effect of particle shape on the efficiency of granular dampers. EPJ Web of Conferences, 2017, 140, 06006.	0.3	0
131	Rapid Impact of Nanoparticles on Surfaces. , 2019, , 517-563.		0
132	Misconceptions about gyroscopic stabilization. American Journal of Physics, 2020, 88, 175-181.	0.7	0
133	A robust numerical method for granular hydrodynamics in three dimensions. Journal of Fluid Mechanics, 2021, 917, .	3.4	0
134	10.1063/5.0056143.1. , 2021, , .		0
135	Fragmentation and abrasion in granular matter systems. Computational Particle Mechanics, 2021, 8, 1003-1004.	3.0	0