Karen E Daniels

List of Publications by Citations

91 papers	2,185 citations	27 h-index	43 g-index
101 ext. papers	2,595 ext. citations	3.9 avg, IF	5.49 L-index

#	Paper	IF	Citations
91	Force chains in seismogenic faults visualized with photoelastic granular shear experiments. *Journal of Geophysical Research*, **2008**, 113,		95
90	Hysteresis and competition between disorder and crystallization in sheared and vibrated granular flow. *Physical Review Letters*, **2005**, 94, 168001	7.4	86
89	Defect turbulence and generalized statistical mechanics. *Physica D: Nonlinear Phenomena*, **2004**, 193, 208-217	3.3	82
88	The Statistical Physics of Athermal Materials. *Annual Review of Condensed Matter Physics*, **2015**, 6, 63-83	19.7	79
87	Influence of network topology on sound propagation in granular materials. *Physical Review E*, **2012**, 86, 041306	2.4	79
86	Photoelastic force measurements in granular materials. *Review of Scientific Instruments*, **2017**, 88, 051808	1.7	77
85	Extraction of force-chain network architecture in granular materials using community detection. *Soft Matter*, **2015**, 11, 2731-44	3.6	75
84	Equilibrating temperaturelike variables in jammed granular subsystems. *Physical Review Letters*, **2013**, 110, 058001	7.4	73
83	Shear-driven size segregation of granular materials: modeling and experiment. *Physical Review E*, **2010**, 81, 051301	2.4	68
82	Sound propagation and force chains in granular materials. *Europhysics Letters*, **2011**, 94, 54005	1.6	67
81	Network analysis of particles and grains. *Journal of Complex Networks*, **2018**, 6, 485-565	1.7	66
80	Elastocapillary deformations on partially-wetting substrates: rival contact-line models. *Soft Matter*, **2014**, 10, 7361-9	3.6	66
79	Mixing and segregation rates in sheared granular materials. *Physical Review E*, **2009**, 80, 042301	2.4	66
78	Solid capillarity: when and how does surface tension deform soft solids?. *Soft Matter*, **2016**, 12, 2993-6	3.6	63
77	Defect turbulence in inclined layer convection. *Physical Review Letters*, **2002**, 88, 034501	7.4	61
76	Granular Controls on Periodicity of Stick-Slip Events: Kinematics and Force-Chains in an Experimental Fault. *Pure and Applied Geophysics*, **2011**, 168, 2239-2257	2.2	58
75	Pattern formation in inclined layer convection. *Physical Review Letters*, **2000**, 84, 5320-3	7.4	46

74	Evolution of network architecture in a granular material under compression. *Physical Review E*, **2016**, 94, 032908	2.4	45
73	Oxidation-Mediated Fingering in Liquid Metals. *Physical Review Letters*, **2017**, 119, 174502	7.4	41
72	Universal shapes formed by two interacting cracks. *Physical Review Letters*, **2010**, 105, 125505	7.4	41
71	Enlightening force chains: a review of photoelasticimetry in granular matter. *Granular Matter*, **2019**, 21, 1	2.6	35
70	Equipartition of rotational and translational energy in a dense granular gas. *Physical Review Letters*, **2012**, 108, 018001	7.4	34
69	Fluorescent visualization of a spreading surfactant. *New Journal of Physics*, **2010**, 12, 073029	2.9	34
68	Fluctuations, correlations and transitions in granular materials: statistical mechanics for a non-conventional system. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2008**, 366, 493-504	3	33
67	Nonlocal rheology of dense granular flow in annular shear experiments. *Soft Matter*, **2018**, 14, 3040-3048	3.6	30
66	Viewing Earth's surface as a soft-matter landscape. *Nature Reviews Physics*, **2019**, 1, 716-730	23.6	29
65	Instabilities in droplets spreading on gels. *Physical Review Letters*, **2007**, 99, 124501	7.4	29
64	A Dual-Species Biofilm with Emergent Mechanical and Protective Properties. *Journal of Bacteriology*, **2019**, 201,	3.5	27
63	Local properties of patterned vegetation: quantifying endogenous and exogenous effects. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2013**, 371, 20120359	3	27
62	Local origins of volume fraction fluctuations in dense granular materials. *Physical Review E*, **2011**, 83, 041301	2.4	25
61	Dynamics of meteor impacts. *Chaos*, **2004**, 14, S4	3.3	24
60	Topological and geometric measurements of force-chain structure. *Physical Review E*, **2016**, 94, 032909	2.4	24
59	Preface: Focus on imaging methods in granular physics. *Review of Scientific Instruments*, **2017**, 88, 051701	1.7	21
58	Scalar Conservation Laws with Nonconstant Coefficients with Application to Particle Size Segregation in Granular Flow. *Journal of Nonlinear Science*, **2010**, 20, 689-707	2.8	21
57	Spatiotemporal measurement of surfactant distribution on gravity–capillary waves. *Journal of Fluid Mechanics*, **2015**, 777, 523-543	3.7	20

56	Characterization of a freezing/melting transition in a vibrated and sheared granular medium. *Journal of Statistical Mechanics: Theory and Experiment*, **2006**, 2006, P07018-P07018	1.9	20
55	Overcoming Rayleigh-Plateau instabilities: Stabilizing and destabilizing liquid-metal streams via electrochemical oxidation. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 19026-19032	11.5	20
54	Capillary fracture of soft gels. *Physical Review E*, **2013**, 88, 042410	2.4	19
53	Statistics of defect motion in spatiotemporal chaos in inclined layer convection. *Chaos*, **2003**, 13, 55-63	3.3	19
52	Betweenness centrality as predictor for forces in granular packings. *Soft Matter*, **2019**, 15, 1793-1798	3.6	18
51	Competition and bistability of ordered undulations and undulation chaos in inclined layer convection. *Journal of Fluid Mechanics*, **2008**, 597, 261-282	3.7	17
50	Interfacial Tension Modulation of Liquid Metal via Electrochemical Oxidation. *Advanced Intelligent Systems*, **2021**, 3, 2100024	6	17
49	Equilibration of granular subsystems. *Soft Matter*, **2010**, 6, 3074	3.6	16
48	Protocol Dependence and State Variables in the Force-Moment Ensemble. *Physical Review Letters*, **2019**, 122, 038001	7.4	15
47	Acoustic measurement of a granular density of modes. *Soft Matter*, **2013**, 9, 1214-1219	3.6	15
46	Statistics of defect trajectories in spatio-temporal chaos in inclined layer convection and the complex Ginzburg-Landau equation. *Chaos*, **2004**, 14, 864-74	3.3	14
45	Symmetry-reversals in chiral active matter. *Soft Matter*, **2018**, 14, 5572-5580	3.6	14
44	Forecasting failure locations in 2-dimensional disordered lattices. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 16742-16749	11.5	13
43	The role of force networks in granular materials. *EPJ Web of Conferences*, **2017**, 140, 01006	0.3	12
42	Dynamics of a grain-scale intruder in a two-dimensional granular medium with and without basal friction. *Physical Review E*, **2019**, 100, 032905	2.4	11
41	Focus on granular segregation. *New Journal of Physics*, **2013**, 15, 035017	2.9	11
40	Localized transverse bursts in inclined layer convection. *Physical Review Letters*, **2003**, 91, 114501	7.4	11
39	Spatio-temporal patterns in inclined layer convection. *Journal of Fluid Mechanics*, **2016**, 794, 719-745	3.7	11

38	Self-healing dynamics of surfactant coatings on thin viscous films. *Physics of Fluids*, **2014**, 26, 042109	4.4	10
37	Flow-driven formation of solid-like microsphere heaps. *Soft Matter*, **2013**, 9, 543-549	3.6	10
36	Force fluctuations at the transition from quasi-static to inertial granular flow. *Soft Matter*, **2019**, 15, 8532-8542	3.6	10
35	Surfactant spreading on a thin liquid film: reconciling models and experiments. *Journal of Engineering Mathematics*, **2015**, 94, 63-79	1.2	9
34	Friction and pressure-dependence of force chain communities in granular materials. *Granular Matter*, **2016**, 18, 1	2.6	9
33	Rigidity percolation control of the brittle-ductile transition in disordered networks. *Physical Review Materials*, **2019**, 3,	3.2	9
32	Capillary fracture of ultrasoft gels: variability and delayed nucleation. *Soft Matter*, **2017**, 13, 2962-2966	3.6	8
31	Deformation of an elastic substrate due to a resting sessile droplet. *European Journal of Applied Mathematics*, **2018**, 29, 281-300	1	8
30	A porous convection model for grass patterns. *American Naturalist*, **2010**, 175, E10-5	3.7	8
29	High refractive index immersion liquid for superresolution 3D imaging using sapphire-based aplanatic numerical aperture increasing lens optics. *Applied Optics*, **2016**, 55, 3165-9	1.7	8
28	Correlations between electrical and mechanical signals during granular stick-slip events. *Granular Matter*, **2014**, 16, 217-222	2.6	7
27	Trajectory entanglement in dense granular materials. *Journal of Statistical Mechanics: Theory and Experiment*, **2012**, 2012, P06008	1.9	7
26	Starbursts and wispy drops: surfactants spreading on gels. *Chaos*, **2005**, 15, 041107	3.3	7
25	Sounds of Failure: Passive Acoustic Measurements of Excited Vibrational Modes. *Physical Review Letters*, **2018**, 120, 218003	7.4	7
24	Spongelike Rigid Structures in Frictional Granular Packings. *Physical Review Letters*, **2021**, 126, 088002	7.4	6
23	Simulating surfactant spreading: Influence of a physically motivated equation of state *European Journal of Applied Mathematics*, **2018**, 29, 30-54	1	5
22	Gradient-induced droplet motion over soft solids. *IMA Journal of Applied Mathematics*, **2020**, 85, 495-512	1	4
21	Nonlinear elasticity of microsphere heaps. *Physical Review E*, **2014**, 90, 022304	2.4	4

20	Granular Materials in Space Exploration **2016**,		3
19	Analysis of Self-Organized Patterned Surface Oxide Spots on Ejected Spatter Produced during Laser Powder Bed Fusion. *Additive Manufacturing*, **2020**, 35, 101320	6.1	3
18	Distinguishing deformation mechanisms in elastocapillary experiments. *Soft Matter*, **2019**, 15, 9426-9436	3.6	3
17	Delicate memory structure of origami switches. *Physical Review Research*, **2022**, 4,	3.9	3
16	Boundary conditions and event scaling of granular stick-slip events **2009**,		2
15	Generating ensembles and measuring mixing in a model granular system **2009**,		2
14	Stress propagation in locally loaded packings of disks and pentagons. *Soft Matter*, **2021**, 17, 10120-10127	3.6	2
13	Particle dynamics in two-dimensional point-loaded granular media composed of circular or pentagonal grains. *EPJ Web of Conferences*, **2021**, 249, 06010	0.3	2
12	The Gray-Thornton Model of Granular Segregation **2010**,		1
11	Student Blogging about Physics. *Physics Teacher*, **2010**, 48, 366-367	0.4	1
10	Rubble-Pile Near Earth Objects: Insights from Granular Physics **2013**, 271-286		1
9	The effect of boundary roughness on dense granular flows. *EPJ Web of Conferences*, **2021**, 249, 03014	0.3	1
8	Stick-slip Dynamics in Penetration Experiments on Simulated Regolith. *Planetary Science Journal*, **2021**, 2, 243	2.9	1
7	Nonaffine deformation under compression and decompression of a flow-stabilized solid. *Journal of Statistical Mechanics: Theory and Experiment*, **2016**, 2016, 084003	1.9	0
6	Granular rheology: measuring boundary forces with laser-cut leaf springs. *EPJ Web of Conferences*, **2017**, 140, 03035	0.3	0
5	Probing regolith-covered surfaces in low gravity. *EPJ Web of Conferences*, **2021**, 249, 02005	0.3	0
4	Generating ensembles of two-dimensional granular configurations. *Chaos*, **2009**, 19, 041108	3.3	
3	Introduction: Sixth Annual Gallery of Nonlinear Images (Pittsburgh, Pennsylvania, 2009). *Chaos*, **2009**, 19, 041101	3.3	

2 An experimental investigation of the force network ensemble. *EPJ Web of Conferences*, **2017**, 140, 02024 0.3

1 Local properties of patterned vegetation: quantifying endogenous and exogenous effects. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2013**, 371, 20120359 3