Douglas J Durian

List of Publications by Year
in descending order

160	8,999	34105	43889
papers	citations	52 h-index	91 g-index

163	163	163	5332
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Spatters and spills: Spreading dynamics for partially wetting droplets. Physics of Fluids, 2022, 34, 012112.	4.0	3
2	Desynchronous learning in a physics-driven learning network. Journal of Chemical Physics, 2022, 156, 144903.	3.0	11
3	Physical learning beyond the quasistatic limit. Physical Review Research, 2022, 4, .	3.6	12
4	Probing Gardner Physics in an Active Quasithermal Pressure-Controlled Granular System of Noncircular Particles. Physical Review Letters, 2022, 128, .	7.8	6
5	Demonstration of Decentralized Physics-Driven Learning. Physical Review Applied, 2022, 18, .	3.8	27
6	Experimentally testing a generalized coarsening model for individual bubbles in quasi-two-dimensional wet foams. Physical Review E, 2021, 103, 012610.	2.1	6
7	Resolving tensions surrounding massive pulleys. American Journal of Physics, 2021, 89, 277-283.	0.7	0
8	Quantifying the long-range structure of foams and other cellular patterns with hyperuniformity disorder length spectroscopy. Physical Review E, 2021, 103, 062609.	2.1	5
9	On the Multiplicity of Polyabolos and Tangrams with Four-Fold Symmetry. Mathematics Magazine, 2021, 94, 296-301.	0.1	0
10	Soft matter dynamics: A versatile microgravity platform to study dynamics in soft matter. Review of Scientific Instruments, 2021, 92, 124503.	1.3	7
11	Stagnant zone formation in a 2D bed of circular and elongated grains under penetration. Granular Matter, 2020, 22, 1.	2.2	4
12	Strain localization and failure of disordered particle rafts with tunable ductility during tensile deformation. Soft Matter, 2020, 16, 8226-8236.	2.7	9
13	Machine learning characterization of structural defects in amorphous packings of dimers and ellipses. Physical Review E, 2019, 99, 022903.	2.1	23
14	Note: Eliminating stripe artifacts in light-sheet fluorescence imaging. Review of Scientific Instruments, 2018, 89, 036107.	1.3	15
15	Anisotropic particles strengthen granular pillars under compression. Physical Review E, 2018, 97, 012904.	2.1	10
16	Spectrum of structure for jammed and unjammed soft disks. Physical Review E, 2018, 98, .	2.1	6
17	Dynamics and thermodynamics of air-driven active spinners. Soft Matter, 2018, 14, 5588-5594.	2.7	20
18	An instrument for studying granular media in low-gravity environment. Review of Scientific Instruments, 2018, 89, 075103.	1.3	18

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19	Diffusing wave spectroscopy (DWS) methods applied to double emulsions. Current Opinion in Colloid and Interface Science, 2018, 37, 74-87.	7.4	21
20	Observation of two branches in the hindered settling function at low Reynolds number. Physical Review Fluids, 2018, 3, .	2.5	7
21	The sands of time run faster near the end. Nature Communications, 2017, 8, 15551.	12.8	28
22	Effect of interstitial fluid on the fraction of flow microstates that precede clogging in granular hoppers. Physical Review E, 2017, 95, 032904.	2.1	29
23	Friction controls even submerged granular flows. Soft Matter, 2017, 13, 7657-7664.	2.7	23
24	Border-crossing model for the diffusive coarsening of two-dimensional and quasi-two-dimensional wet foams. Physical Review E, 2017, 96, 032805.	2.1	13
25	Characterizing pixel and point patterns with a hyperuniformity disorder length. Physical Review E, 2017, 96, 032909.	2.1	10
26	Hyperuniformity disorder length spectroscopy for extended particles. Physical Review E, 2017, 96, 032910.	2.1	5
27	Structure-property relationships from universal signatures of plasticity in disordered solids. Science, 2017, 358, 1033-1037.	12.6	218
28	Rheology of sediment transported by a laminar flow. Physical Review E, 2016, 94, 062609.	2.1	42
29	Intermittency and velocity fluctuations in hopper flows prone to clogging. Physical Review E, 2016, 94, 022901.	2.1	27
30	Divergence of Voronoi Cell Anisotropy Vector: A Threshold-Free Characterization of Local Structure in Amorphous Materials. Physical Review Letters, 2016, 116, 088001.	7.8	35
31	Deformation-driven diffusion and plastic flow in amorphous granular pillars. Physical Review E, 2015, 91, 062212.	2.1	27
32	Ballistic motion of a Brownian particle. Physics Today, 2015, 68, 10-11.	0.3	1
33	Identifying Structural Flow Defects in Disordered Solids Using Machine-Learning Methods. Physical Review Letters, 2015, 114, 108001.	7.8	301
34	Tunable Capillary-Induced Attraction between Vertical Cylinders. Langmuir, 2015, 31, 2421-2429.	3.5	18
35	Fraction of Clogging Configurations Sampled by Granular Hopper Flow. Physical Review Letters, 2015, 114, 178001.	7.8	107
36	Penetration depth scaling for impact into wet granular packings. Physical Review E, 2015, 91, 022202.	2.1	12

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37	Onset of sediment transport is a continuous transition driven by fluid shear and granular creep. Nature Communications, 2015, 6, 6527.	12.8	119
38	Rain water transport and storage in a model sandy soil with hydrogel particle additives. European Physical Journal E, 2014, 37, 97.	1.6	13
39	Publisher's Note: Drag force scaling for penetration into granular media [Phys. Rev. E87, 052208 (2013)]. Physical Review E, 2014, 89, .	2.1	1
40	Publisherâ€™s Note: Depth-Dependent Resistance of Granular Media to Vertical Penetration [Phys. Rev. Lett. 111, 168002 (2013)]. Physical Review Letters, 2014, 112, .	7.8	0
41	Kinetics of gravity-driven water channels under steady rainfall. Physical Review E, 2014, 90, 042205.	2.1	5
42	Rheology of soft colloids across the onset of rigidity: scaling behavior, thermal, and non-thermal responses. Soft Matter, 2014, 10, 3027.	2.7	57
43	Morphology of Rain Water Channeling in Systematically Varied Model Sandy Soils. Physical Review Applied, 2014, 2, .	3.8	24
44	Multiple light scattering as a probe of foams and emulsions. Current Opinion in Colloid and Interface Science, 2014, 19, 242-252.	7.4	43
45	Reply to the Commentary on "Granular discharge rate for submerged hoppers". Papers in Physics, 2014, 6, .	0.2	1
46	Coffee rings and coffee disks: Physics on the edge. Physics Today, 2013, 66, 60-61.	0.3	15
47	Effects of Particle Shape on Growth Dynamics at Edges of Evaporating Drops of Colloidal Suspensions. Physical Review Letters, 2013, 110, 035501.	7.8	127
48	Bubble statistics and coarsening dynamics for quasi-two-dimensional foams with increasing liquid content. Physical Review E, 2013, 87, 042304.	2.1	28
49	Geometry dependence of the clogging transition in tilted hoppers. Physical Review E, 2013, 87, 052201.	2.1	80
50	Structure and coarsening at the surface of a dry three-dimensional aqueous foam. Physical Review E, 2013, 88, 062302.	2.1	3
51	Drag force scaling for penetration into granular media. Physical Review E, 2013, 87, 052208.	2.1	69
52	YunkeretÂal.Reply:. Physical Review Letters, 2013, 111, 209602.	7.8	12
53	Effect of hydrogel particle additives on water-accessible pore structure of sandy soils: A custom pressure plate apparatus and capillary bundle model. Physical Review E, 2013, 87, 053013.	2.1	28
54	Depth-Dependent Resistance of Granular Media to Vertical Penetration. Physical Review Letters, 2013, 111, 168002.	7.8	109

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55	Temperature-Pressure Scaling for Air-Fluidized Grains near Jamming. Physical Review Letters, 2012, 108, 138001.	7.8	12
56	Coarsening of a two-dimensional foam on a dome. Physical Review E, 2012, 86, 021402.	2.1	10
57	Permeability of mixed soft and hard granular material: Hydrogels as drainage modifiers. European Physical Journal E, 2011, 34, 65.	1.6	10
58	Air-fluidized balls in a background of smaller beads. Journal of Statistical Mechanics: Theory and Experiment, 2011, 2011, P03027.	2.3	2
59	Propagating waves in a monolayer of gas-fluidized rods. Physical Review E, 2011, 83, 061304.	2.1	7
60	Abrasion of flat rotating shapes. Physical Review E, 2011, 83, 031303.	2.1	5
61	Dynamical heterogeneity in soft-particle suspensions under shear. Physical Review E, 2011, 84, 021403.	2.1	30
62	Final bubble lengths for aqueous foam coarsened in a horizontal cylinder. Philosophical Magazine, 2011, 91, 4357-4366.	1.6	1
63	Dynamical heterogeneities in grains and foams. , 2011, , 203-228.		7
64	Making a frothy shampoo or beer. Physics Today, 2010, 63, 62-63.	0.3	12
65	Granular discharge and clogging for tilted hoppers. Granular Matter, 2010, 12, 579-585.	2.2	86
66	Microfluidic Rheology of Soft Colloids above and below Jamming. Physical Review Letters, 2010, 105, 175701.	7.8	162
67	Centrifugal compression of soft particle packings: Theory and experiment. Physical Review E, 2010, 82, 041403.	2.1	27
68	Jamming and growth of dynamical heterogeneities versus depth for granular heap flow. Soft Matter, 2010, 6, 3023.	2.7	49
69	Characterization of the drag force in an air-moderated granular bed. Soft Matter, 2010, 6, 3038.	2.7	46
70	Dynamics of gas-fluidized granular rods. Physical Review E, 2009, 79, 041301.	2.1	25
71	The effects of polymer molecular weight on filament thinning and drop breakup in microchannels. New Journal of Physics, 2009, 11, 115006.	2.9	54
72	Gas and liquid transport in steady-state aqueous foam. European Physical Journal E, 2008, 26, 309-316.	1.6	32

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73	Statistics of bubble rearrangement dynamics in a coarsening foam. Physical Review E, 2008, 78, 066313.	2.1	25
74	Polymeric filament thinning and breakup in microchannels. Physical Review E, 2008, 77, 036309.	2.1	88
75	Effective Temperatures and Activated Dynamics for a Two-Dimensional Air-Driven Granular System on Two Approaches to Jamming. Physical Review Letters, 2008, 101, 245701.	7.8	44
76	Projectile Interactions in Granular Impact Cratering. Physical Review Letters, 2008, 101, 068001.	7.8	70
77	Avalanche statistics and time-resolved grain dynamics for a driven heap. Physical Review E, 2007, 76, 061301.	2.1	21
78	Shape and erosion of pebbles. Physical Review E, 2007, 75, 021301.	2.1	19
79	Polymer drop breakup in microchannels. Chaos, 2007, 17, 041102.	2.5	5
80	Topological persistence and dynamical heterogeneities near jamming. Physical Review E, 2007, 76, 021306.	2.1	69
81	Spatially heterogeneous dynamics in a granular system near jamming. Chaos, 2007, 17, 041107.	2.5	1
82	Measurement of growing dynamical length scales and prediction of the jamming transition in a granular material. Nature Physics, 2007, 3, 260-264.	16.7	330
83	Unified force law for granular impactÂcratering. Nature Physics, 2007, 3, 420-423.	16.7	262
84	Gaussian and non-Gaussian speckle fluctuations in the diffusing-wave spectroscopy signal of a coarsening foam. Applied Optics, 2006, 45, 2199.	2.1	11
85	Bubble kinetics in a steady-state column of aqueous foam. Europhysics Letters, 2006, 76, 683-689.	2.0	35
86	What Is in a Pebble Shape?. Physical Review Letters, 2006, 97, 028001.	7.8	57
87	Approach to jamming in an air-fluidized granular bed. Physical Review E, 2006, 74, 031308.	2.1	102
88	Noise Model for Laser Speckle Contrast Imaging. , 2006, , .		0
89	Speckle-visibility spectroscopy: A tool to study time-varying dynamics. Review of Scientific Instruments, 2005, 76, 093110.	1.3	313
90	Penetration depth for shallow impact cratering. Physical Review E, 2005, 71, 051305.	2.1	83

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91	Dynamics of shallow impact cratering. Physical Review E, 2005, 72, 041305.	2.1	97
92	Statistical characterization of the forces on spheres in an upflow of air. Physical Review E, 2005, 71, 016313.	2.1	16
93	Partition of energy for air-fluidized grains. Physical Review E, 2005, 72, 031305.	2.1	16
94	Electrical conductivity of dispersions: from dry foams to dilute suspensions. Journal of Physics Condensed Matter, 2005, 17, 6301-6305.	1.8	84
95	Photon channelling in foams. Europhysics Letters, 2004, 65, 414-419.	2.0	37
96	Dynamics of normal and superfluid fogs using diffusing-wave spectroscopy. Physical Review E, 2004, 69, 061408.	2.1	4
97	Statistical mechanics of a gas-fluidized particle. Nature, 2004, 427, 521-523.	27.8	147
98	Light scattering from superfluid fog. Physica B: Condensed Matter, 2003, 329-333, 230-231.	2.7	0
99	Projectile-shape dependence of impact craters in loose granular media. Physical Review E, 2003, 68, 060301.	2.1	62
100	Relaxing in Foam. Physical Review Letters, 2003, 91, 188303.	7.8	98
101	Speckle Visibility Spectroscopy and Variable Granular Fluidization. Physical Review Letters, 2003, 90, 184302.	7.8	85
102	Low-Speed Impact Craters in Loose Granular Media. Physical Review Letters, 2003, 90, 194301.	7.8	204
103	Static and dynamic properties of highly turbid media determined by spatially resolved diffusive-wave spectroscopy. Applied Optics, 2002, 41, 7294.	2.1	6
104	Effective Temperatures of a Driven System Near Jamming. Physical Review Letters, 2002, 89, 095703.	7.8	201
105	Enhanced Drainage and Coarsening in Aqueous Foams. Physical Review Letters, 2002, 88, 088304.	7.8	66
106	Quasi-elastic light scattering for intermittent dynamics. Applied Optics, 2001, 40, 3984.	2.1	16
107	Diffusing-wave spectroscopy for arbitrary geometries: numerical analysis by a boundary-element method. Applied Optics, 2001, 40, 4179.	2.1	4
108	Scattering optics of foam. Applied Optics, 2001, 40, 4210.	2.1	123

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109	Spatial sampling by diffuse photons. Applied Optics, 2001, 40, 4228.	2.1	10
110	In search of soft solutions. Nature, 2001, 412, 391-392.	27.8	8
111	Reply to the Comment by S. J. Cox and D. Weaire on "Free drainage of aqueous foams: Container shape effects on capillarity and vertical gradients". Europhysics Letters, 2001, 55, 447-448.	2.0	4
112	Hysteresis and packing in gas-fluidized beds. Physical Review E, 2000, 62, 4442-4445.	2.1	22
113	Instabilities in a Liquid-Fluidized Bed of Gas Bubbles. Physical Review Letters, 2000, 84, 3001-3004.	7.8	39
114	From Avalanches to Fluid Flow: A Continuous Picture of Grain Dynamics Down a Heap. Physical Review Letters, 2000, 85, 4273-4276.	7.8	126
115	Free drainage of aqueous foams: Container shape effects on capillarity and vertical gradients. Europhysics Letters, 2000, 50, 695-701.	2.0	49
116	Collisions and intermittency in granular flow. Journal of Physics Condensed Matter, 2000, 12, A507-A512.	1.8	7
117	Detecting and characterizing intermittency using higher-order intensity correlation functions. , 2000, , .		0
118	Statistics of shear-induced rearrangements in a two-dimensional model foam. Physical Review E, 1999, 60, 4385-4396.	2.1	95
119	Shear-Induced â€œMeltingâ€•of an Aqueous Foam. Journal of Colloid and Interface Science, 1999, 213, 169-178.	9.4	119
120	Vanishing elasticity for wet foams: Equivalence with emulsions and role of polydispersity. Journal of Rheology, 1999, 43, 1411-1422.	2.6	151
121	Uniform foam production by turbulent mixing: new results on free drainage vs. liquid content. European Physical Journal B, 1999, 12, 67-73.	1.5	72
122	Spatially resolved backscattering: implementation of extrapolation boundary condition and exponential source. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1999, 16, 837.	1.5	28
123	Investigating non-Gaussian scattering processes by using nth -order intensity correlation functions. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1999, 16, 1651.	1.5	189
124	Diffusing-light spectroscopies beyond the diffusion limit:â€ƒThe role of ballistic transport and anisotropic scattering. Physical Review E, 1998, 57, 4498-4515.	2.1	96
125	The diffusion coefficient depends on absorption. Optics Letters, 1998, 23, 1502.	3.3	50
126	Photon migration at short times and distances and in cases of strong absorption:â€ƒerrata. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1998, 15, 2443.	1.5	0

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127	Bubble-scale model of foam mechanics:mMelting, nonlinear behavior, and avalanches. Physical Review E, 1997, 55, 1739-1751.	2.1	246
128	Particle Motions in a Gas-Fluidized Bed of Sand. Physical Review Letters, 1997, 79, 3407-3410.	7.8	117
129	Diffusing-Wave Spectroscopy of Dynamics in a Three-Dimensional Granular Flow. Science, 1997, 275, 1920-1922.	12.6	167
130	Fast thermal dynamics in aqueous foams. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1997, 14, 150.	1.5	19
131	Photon migration at short times and distances and in cases of strong absorption. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1997, 14, 235.	1.5	86
132	Photon migration at short times and distances and in cases of strong absorption:â€ƒerratum. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1997, 14, 940.	1.5	2
133	Angular distribution of diffusely backscattered light. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1997, 14, 2800.	1.5	10
134	Fast, nonevolutionary dynamics in foams. Current Opinion in Colloid and Interface Science, 1997, 2, 615-621.	7.4	10
135	Angular distribution of diffusely transmitted light. Physical Review E, 1996, 53, 3215-3224.	2.1	84
136	Dynamics of Grains in Driven Granular Media. Materials Research Society Symposia Proceedings, 1996, 463, 313.	0.1	0
137	Two-stream theory of diffusing light spectroscopies. Physica A: Statistical Mechanics and Its Applications, 1996, 229, 218-235.	2.6	10
138	Letter: Importance of boundary reflections in the theory of diffusive light scattering [see 33(12)3849-3852(Dec1994)]. Optical Engineering, 1995, 34, 3344.	1.0	3
139	Foam Mechanics at the Bubble Scale. Physical Review Letters, 1995, 75, 4780-4783.	7.8	491
140	Penetration depth for diffusing-wave spectroscopy. Applied Optics, 1995, 34, 7100.	2.1	22
141	Accuracy of diffusing-wave spectroscopy theories. Physical Review E, 1995, 51, 3350-3358.	2.1	57
142	Nonlinear Bubble Dynamics in a Slowly Driven Foam. Physical Review Letters, 1995, 75, 2610-2613.	7.8	123
143	Relaxation in Aqueous Foams. MRS Bulletin, 1994, 19, 20-23.	3.5	4
144	Influence of boundary reflection and refraction on diffusive photon transport. Physical Review E, 1994, 50, 857-866.	2.1	89

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145	Viscous and elastic fingering instabilities in foam. Physical Review Letters, 1994, 72, 3347-3350.	7.8	67
146	Diffusingâ€wave spectroscopy and interferometry. Macromolecular Symposia, 1994, 79, 31-44.	0.7	2
147	Diffusing-wave spectroscopy: The technique and some applications. Physica Scripta, 1993, T49B, 610-621.	2.5	117
148	Scaling of transient hydrodynamic interactions in concentrated suspensions. Physical Review Letters, 1992, 68, 2559-2562.	7.8	102
149	Principles and Applications of Diffusing-Wave Spectroscopy. , 1992, , 731-748.		27
150	Scaling behavior in shaving cream. Physical Review A, 1991, 44, R7902-R7905.	2.5	194
151	Multiple Light-Scattering Probes of Foam Structure and Dynamics. Science, 1991, 252, 686-688.	12.6	299
152	Scaliing in Three-Dimensional Foams. Materials Research Society Symposia Proceedings, 1991, 248, 295.	0.1	2
153	Dynamics and coarsening in three-dimensional foams. Journal of Physics Condensed Matter, 1990, 2, SA433-SA436.	1.8	30
154	Wetting transitions in a cylindrical pore. Physical Review Letters, 1990, 65, 1897-1900.	7.8	167
155	Capillary behavior of binary liquid mixtures near criticality: Rise and kinetics. Physical Review A, 1990, 42, 4724-4734.	2.5	10
156	Temperature-driven motion of a wetting layer. Physical Review A, 1989, 40, 5220-5223.	2.5	12
157	Wetting phenomena of binary liquid mixtures on chemically altered substrates. Physical Review Letters, 1987, 59, 555-558.	7.8	77
158	Continued exploration of the wetting phase diagram. Physical Review B, 1987, 36, 7307-7310.	3.2	15
159	Wetting Phenomena of Binary Liquid Mixtures on Chemically Altered Substrates. Physical Review Letters, 1987, 59, 1492-1492.	7.8	7
160	Granular discharge rate for submerged hoppers. Papers in Physics, 0, 6, 060009.	0.2	31