John M Gray

List of Publications by Year in descending order

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91 papers	4,737 citations	87723 38 h-index	95083 68 g-index
94 all docs	94 docs citations	94 times ranked	1621 citing authors

#	Article	IF	Citations
1	Subcritical and supercritical granular flow around an obstacle on a rough inclined plane. Journal of Fluid Mechanics, 2022, 933, .	1.4	7
2	Formation of dry granular fronts and watery tails in debris flows. Journal of Fluid Mechanics, 2022, 943, .	1.4	10
3	Erosion-deposition dynamics and long distance propagation of granular avalanches. Journal of Fluid Mechanics, 2021, 915, .	1.4	14
4	An experimental scaling law for particle-size segregation in dense granular flows. Journal of Fluid Mechanics, 2021, 916, .	1.4	17
5	Size segregation of irregular granular materials captured by time-resolved 3D imaging. Scientific Reports, 2021, 11, 8352.	1.6	12
6	Large particle segregation in two-dimensional sheared granular flows. Physical Review Fluids, 2021, 6, .	1.0	10
7	Coupling rheology and segregation in granular flows. Journal of Fluid Mechanics, 2021, 909, .	1.4	39
8	Discrete and continuum modelling of grain size segregation during bedload transport. Journal of Fluid Mechanics, 2020, 895, .	1.4	19
9	Self-channelisation and levee formation in monodisperse granular flows. Journal of Fluid Mechanics, 2019, 876, 591-641.	1.4	41
10	Constitutive relations for compressible granular flow in the inertial regime. Journal of Fluid Mechanics, 2019, 874, 926-951.	1.4	40
11	Shedding dynamics and mass exchange by dry granular waves flowing over erodible beds. Earth and Planetary Science Letters, 2019, 523, 115700.	1.8	10
12	Frictional hysteresis and particle deposition in granular free-surface flows. Journal of Fluid Mechanics, 2019, 875, 1058-1095.	1.4	24
13	Retrogressive failure of a static granular layer on an inclined plane. Journal of Fluid Mechanics, 2019, 869, 313-340.	1.4	19
14	Bulbous head formation in bidisperse shallow granular flow over an inclined plane. Journal of Fluid Mechanics, 2019, 866, 263-297.	1.4	13
15	Les instabilitÃ©s hydrodynamiques dans les Ã©coulements granulaires gÃ©ophysiques. , 2019, , 32-36.	0.1	0
16	Particle Segregation in Dense Granular Flows. Annual Review of Fluid Mechanics, 2018, 50, 407-433.	10.8	200
17	Breaking size-segregation waves and mobility feedback in dense granular avalanches. Granular Matter, 2018, 20, 1.	1.1	11
18	The kinematics of bidisperse granular roll waves. Journal of Fluid Mechanics, 2018, 848, 836-875.	1.4	30

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19	Multiple solutions for granular flow over a smooth two-dimensional bump. Journal of Fluid Mechanics, 2017, 815, 77-116.	1.4	45
20	Well-posed continuum equations for granular flow with compressibility and Î¼ (I) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 7 473, 20160846.	1.0	54
21	Formation of levees, troughs and elevated channels by avalanches on erodible slopes. Journal of Fluid Mechanics, 2017, 823, 278-315.	1.4	37
22	Partial regularisation of the incompressible ?(I)-rheology for granular flow. Journal of Fluid Mechanics, 2017, 828, 5-32.	1.4	65
23	Granular avalanches on the Moon: Massâ€wasting conditions, processes, and features. Journal of Geophysical Research E: Planets, 2017, 122, 1893-1925.	1.5	53
24	Segregation-induced finger formation in granular free-surface flows. Journal of Fluid Mechanics, 2016, 809, 168-212.	1.4	46
25	A two-dimensional depth-averaged -rheology for dense granular avalanches. Journal of Fluid Mechanics, 2016, 787, 367-395.	1.4	76
26	Asymmetric breaking size-segregation waves in dense granular free-surface flows. Journal of Fluid Mechanics, 2016, 794, 460-505.	1.4	22
27	Well-posed and ill-posed behaviour of the -rheology for granular flow. Journal of Fluid Mechanics, 2015, 779, 794-818.	1.4	130
28	Particle-size andÂ-density segregation in granular free-surface flows. Journal of Fluid Mechanics, 2015, 779, 622-668.	1.4	50
29	Underlying Asymmetry within Particle Size Segregation. Physical Review Letters, 2015, 114, 238001.	2.9	97
30	Erosionâ€“deposition waves in shallow granular free-surface flows. Journal of Fluid Mechanics, 2015, 762, 35-67.	1.4	75
31	Particle-size segregation in dense granular avalanches. Comptes Rendus Physique, 2015, 16, 73-85.	0.3	34
32	Arrested coarsening of granular roll waves. Physics of Fluids, 2014, 26, .	1.6	30
33	Asymmetric flux models for particle-size segregation in granular avalanches. Journal of Fluid Mechanics, 2014, 757, 297-329.	1.4	54
34	Fine-grained linings of leveed channels facilitate runout of granular flows. Earth and Planetary Science Letters, 2014, 385, 172-180.	1.8	85
35	A depth-averaged -rheology for shallow granular free-surface flows. Journal of Fluid Mechanics, 2014, 755, 503-534.	1.4	162
36	Gravity-driven granular free-surface flow around a circular cylinder. Journal of Fluid Mechanics, 2013, 720, 314-337.	1.4	76

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37	A hierarchy of particle-size segregation models: From polydisperse mixtures to depth-averaged theories. AIP Conference Proceedings, 2013, , .	0.3	5
38	Grainâ€size segregation and levee formation in geophysical mass flows. Journal of Geophysical Research, 2012, 117, .	3.3	234
39	Segregation-induced fingering instabilities in granular free-surface flows. Journal of Fluid Mechanics, 2012, 709, 543-580.	1.4	65
40	Multi-component particle-size segregation in shallow granular avalanches. Journal of Fluid Mechanics, 2011, 678, 535-588.	1.4	113
41	Granular jets and hydraulic jumps on an inclined plane. Journal of Fluid Mechanics, 2011, 675, 87-116.	1.4	57
42	Experimental investigation into segregating granular flows down chutes. Physics of Fluids, 2011, 23, .	1.6	104
43	Large particle segregation, transport and accumulation in granular free-surface flows â€“ ERRATUM. Journal of Fluid Mechanics, 2010, 657, 539-539.	1.4	18
44	Large particle segregation, transport and accumulation in granular free-surface flows. Journal of Fluid Mechanics, 2010, 652, 105-137.	1.4	90
45	Particle size segregation in granular avalanches: A brief review of recent progress. AIP Conference Proceedings, 2010, , .	0.3	8
46	Granular jets and hydraulic jumps on an inclined plane. , 2010, , .		0
47	Segregation, recirculation and deposition of coarse particles near two-dimensional avalanche fronts. Journal of Fluid Mechanics, 2009, 629, 387-423.	1.4	119
48	Breaking size segregation waves and particle recirculation in granular avalanches. Journal of Fluid Mechanics, 2008, 596, 261-284.	1.4	38
49	Stable solutions of a scalar conservation law for particle-size segregation in dense granular avalanches. European Journal of Applied Mathematics, 2008, 19, 61-86.	1.4	25
50	Deflecting dams and the formation of oblique shocks in snow avalanches at Flateyri, Iceland. Journal of Geophysical Research, 2007, 112, .	3.3	42
51	Weak, strong and detached oblique shocks in gravity-driven granular free-surface flows. Journal of Fluid Mechanics, 2007, 579, 113-136.	1.4	75
52	Particle-size segregation and diffusive remixing in shallow granular avalanches. Journal of Fluid Mechanics, 2006, 569, 365.	1.4	157
53	Time-dependent solutions for particle-size segregation in shallow granular avalanches. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2006, 462, 947-972.	1.0	46
54	A three-phase mixture theory for particle size segregation in shallow granular free-surface flows. Journal of Fluid Mechanics, 2006, 550, 1.	1.4	81

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55	Pattern selection by a granular wave in a rotating drum. Physical Review E, 2006, 73, 061302.	0.8	60
56	A theory for particle size segregation in shallow granular free-surface flows. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2005, 461, 1447-1473.	1.0	217
57	Shock waves, dead zones and particle-free regions in rapid granular free-surface flows. Journal of Fluid Mechanics, 2003, 491, 161-181.	1.4	262
58	Rapid Granular Avalanches. Lecture Notes in Applied and Computational Mechanics, 2003, , 3-42.	2.0	4
59	Particle Image Velocimetry (PIV) for Granular Avalanches on Inclined Planes. Lecture Notes in Applied and Computational Mechanics, 2003, , 195-218.	2.0	14
60	Shock-Capturing and Front-Tracking Methods for Granular Avalanches. Journal of Computational Physics, 2002, 175, 269-301.	1.9	112
61	Granular flow in partially filled slowly rotating drums. Journal of Fluid Mechanics, 2001, 441, 1-29.	1.4	149
62	Flow of dense avalanches past obstructions. Annals of Glaciology, 2001, 32, 281-284.	2.8	54
63	An accurate shock-capturing finite-difference method to solve the Savage-Hutter equations in avalanche dynamics. Annals of Glaciology, 2001, 32, 263-267.	2.8	19
64	Dense Granular Avalanches: Mathematical Description and Experimental Validation. , 2001, , 339-366.		13
65	Steady Motion of a Finite Granular Mass in a Rotating Drum. Journal of Mechanics, 2000, 16, 67-72.	0.7	2
66	Shock Waves and Particle Size Segregation in Shallow Granular Flows. Solid Mechanics and Its Applications, 2000, , 269-276.	0.1	1
67	Gravity-driven free surface flow of granular avalanches over complex basal topography. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 1999, 455, 1841-1874.	1.0	349
68	Loss of Hyperbolicity and Ill-posedness of the Viscousâ€“Plastic Sea Ice Rheology in Uniaxial Divergent Flow. Journal of Physical Oceanography, 1999, 29, 2920-2929.	0.7	29
69	Methods of similitude in granular avalanche flows. Lecture Notes in Physics, 1999, , 415-428.	0.3	14
70	Channelized free-surface flow of cohesionless granular avalanches in a chute with shallow lateral curvature. Journal of Fluid Mechanics, 1999, 392, 73-100.	1.4	126
71	Limiting stress states in granular avalanches. Annals of Glaciology, 1998, 26, 272-276.	2.8	13
72	On the inclusion of a velocity-dependent basal drag in avalanche models. Annals of Glaciology, 1998, 26, 277-280.	2.8	4

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73	Physik granularer Lawinen. Physik Journal, 1998, 54, 37-43.	0.1	18
74	On the inclusion of a velocity-dependent basal drag in avalanche models. Annals of Glaciology, 1998, 26, 277-280.	2.8	9
75	Particle Size Segregation, Granular Shocks and Stratification Patterns. , 1998, , 697-702.		10
76	Limiting stress states in granular avalanches. Annals of Glaciology, 1998, 26, 272-276.	2.8	7
77	Depth-hoar growth rates near a rocky outcrop. Journal of Glaciology, 1998, 44, 477-484.	1.1	0
78	Pattern formation in granular avalanches. Continuum Mechanics and Thermodynamics, 1997, 9, 341-345.	1.4	143
79	Interaction models for mixtures with application to phase transitions. International Journal of Engineering Science, 1997, 35, 55-74.	2.7	7
80	Granular Avalanches on Complex Topography. Solid Mechanics and Its Applications, 1997, , 275-286.	0.1	2
81	Sea Ice Ridging Schemes. Journal of Physical Oceanography, 1996, 26, 2420-2428.	0.7	9
82	Balance relations for classical mixtures containing a moving non-material surface with application to phase transitions. Continuum Mechanics and Thermodynamics, 1996, 8, 171-187.	1.4	7
83	Water movement in wet snow. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 1996, 354, 465-500.	1.6	14
84	Stability of the Viscous-Plastic Sea Ice Rheology. Journal of Physical Oceanography, 1995, 25, 971-978.	0.7	23
85	Phase change interactions and singular fronts. Continuum Mechanics and Thermodynamics, 1995, 7, 387-414.	1.4	13
86	A phase-changing dry snowpack model. Journal of Glaciology, 1995, 41, 11-29.	1.1	1
87	A phase-changing dry snowpack model. Journal of Glaciology, 1995, 41, 11-29.	1.1	10
88	The compaction of polar snow packs. Cold Regions Science and Technology, 1995, 23, 109-119.	1.6	14
89	The effect of change in thermal properties on the propagation of a periodic thermal wave: Application to a snow-buried rocky outcrop. Journal of Geophysical Research, 1995, 100, 15267-15279.	3.3	3
90	A dry snow pack model. Cold Regions Science and Technology, 1994, 22, 135-148.	1.6	16

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91	Evolution of a Mixing Zone in Granular Avalanches. Applied Mathematics Research EXpress, 0, , .	1.0	2