

# John M Gray

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

87  
papers

3,664  
citations

33  
h-index

59  
g-index

94  
ext. papers

4,205  
ext. citations

3.5  
avg, IF

5.99  
L-index

#	Paper	IF	Citations
87	Coupling rheology and segregation in granular flows. <i>Journal of Fluid Mechanics</i> , <b>2021</b> , 909,	3.7	16
86	Erosion-deposition dynamics and long distance propagation of granular avalanches. <i>Journal of Fluid Mechanics</i> , <b>2021</b> , 915,	3.7	1
85	An experimental scaling law for particle-size segregation in dense granular flows. <i>Journal of Fluid Mechanics</i> , <b>2021</b> , 916,	3.7	6
84	Size segregation of irregular granular materials captured by time-resolved 3D imaging. <i>Scientific Reports</i> , <b>2021</b> , 11, 8352	4.9	2
83	Large particle segregation in two-dimensional sheared granular flows. <i>Physical Review Fluids</i> , <b>2021</b> , 6,	2.8	3
82	Discrete and continuum modelling of grain size segregation during bedload transport. <i>Journal of Fluid Mechanics</i> , <b>2020</b> , 895,	3.7	9
81	Frictional hysteresis and particle deposition in granular free-surface flows. <i>Journal of Fluid Mechanics</i> , <b>2019</b> , 875, 1058-1095	3.7	10
80	Retrogressive failure of a static granular layer on an inclined plane. <i>Journal of Fluid Mechanics</i> , <b>2019</b> , 869, 313-340	3.7	8
79	Bulbous head formation in bidisperse shallow granular flow over an inclined plane. <i>Journal of Fluid Mechanics</i> , <b>2019</b> , 866, 263-297	3.7	8
78	Self-channelisation and levee formation in monodisperse granular flows. <i>Journal of Fluid Mechanics</i> , <b>2019</b> , 876, 591-641	3.7	20
77	Constitutive relations for compressible granular flow in the inertial regime. <i>Journal of Fluid Mechanics</i> , <b>2019</b> , 874, 926-951	3.7	18
76	Shedding dynamics and mass exchange by dry granular waves flowing over erodible beds. <i>Earth and Planetary Science Letters</i> , <b>2019</b> , 523, 115700	5.3	3
75	Les instabilit� hydrodynamiques dans les �coulements granulaires g�ophysiques <b>2019</b> , 32-36	0.1	
74	Breaking size-segregation waves and mobility feedback in dense granular avalanches. <i>Granular Matter</i> , <b>2018</b> , 20, 1	2.6	7
73	The kinematics of bidisperse granular roll waves. <i>Journal of Fluid Mechanics</i> , <b>2018</b> , 848, 836-875	3.7	14
72	Particle Segregation in Dense Granular Flows. <i>Annual Review of Fluid Mechanics</i> , <b>2018</b> , 50, 407-433	22	124
71	Multiple solutions for granular flow over a smooth two-dimensional bump. <i>Journal of Fluid Mechanics</i> , <b>2017</b> , 815, 77-116	3.7	31

70	Well-posed continuum equations for granular flow with compressibility and $\mu(I)$ -rheology. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , <b>2017</b> , 473, 20160846 <sup>2-4</sup>	45
69	Formation of levees, troughs and elevated channels by avalanches on erodible slopes. <i>Journal of Fluid Mechanics</i> , <b>2017</b> , 823, 278-315	3.7 22
68	Partial regularisation of the incompressible $\mu(I)$ -rheology for granular flow. <i>Journal of Fluid Mechanics</i> , <b>2017</b> , 828, 5-32	3.7 43
67	Granular avalanches on the Moon: Mass-wasting conditions, processes, and features. <i>Journal of Geophysical Research E: Planets</i> , <b>2017</b> , 122, 1893-1925	4.1 28
66	Segregation-induced finger formation in granular free-surface flows. <i>Journal of Fluid Mechanics</i> , <b>2016</b> , 809, 168-212	3.7 33
65	A two-dimensional depth-averaged $\mu(I)$ -rheology for dense granular avalanches. <i>Journal of Fluid Mechanics</i> , <b>2016</b> , 787, 367-395	3.7 54
64	Asymmetric breaking size-segregation waves in dense granular free-surface flows. <i>Journal of Fluid Mechanics</i> , <b>2016</b> , 794, 460-505	3.7 20
63	Erosion-deposition waves in shallow granular free-surface flows. <i>Journal of Fluid Mechanics</i> , <b>2015</b> , 762, 35-67	3.7 54
62	Particle-size segregation in dense granular avalanches. <i>Comptes Rendus Physique</i> , <b>2015</b> , 16, 73-85	1.4 29
61	Well-posed and ill-posed behaviour of the $\mu(I)$ -rheology for granular flow. <i>Journal of Fluid Mechanics</i> , <b>2015</b> , 779, 794-818	3.7 98
60	Particle-size and $\mu(I)$ -density segregation in granular free-surface flows. <i>Journal of Fluid Mechanics</i> , <b>2015</b> , 779, 622-668	3.7 42
59	Underlying Asymmetry within Particle Size Segregation. <i>Physical Review Letters</i> , <b>2015</b> , 114, 238001	7.4 76
58	Fine-grained linings of leveed channels facilitate runout of granular flows. <i>Earth and Planetary Science Letters</i> , <b>2014</b> , 385, 172-180	5.3 69
57	A depth-averaged $\mu(I)$ -rheology for shallow granular free-surface flows. <i>Journal of Fluid Mechanics</i> , <b>2014</b> , 755, 503-534	3.7 118
56	Arrested coarsening of granular roll waves. <i>Physics of Fluids</i> , <b>2014</b> , 26, 123305	4.4 16
55	Asymmetric flux models for particle-size segregation in granular avalanches. <i>Journal of Fluid Mechanics</i> , <b>2014</b> , 757, 297-329	3.7 44
54	Gravity-driven granular free-surface flow around a circular cylinder. <i>Journal of Fluid Mechanics</i> , <b>2013</b> , 720, 314-337	3.7 61
53	A hierarchy of particle-size segregation models: From polydisperse mixtures to depth-averaged theories <b>2013</b> ,	4

52	Segregation-induced fingering instabilities in granular free-surface flows. <i>Journal of Fluid Mechanics</i> , <b>2012</b> , 709, 543-580	3.7	54
51	Grain-size segregation and levee formation in geophysical mass flows. <i>Journal of Geophysical Research</i> , <b>2012</b> , 117, n/a-n/a		177
50	Multi-component particle-size segregation in shallow granular avalanches. <i>Journal of Fluid Mechanics</i> , <b>2011</b> , 678, 535-588	3.7	93
49	Granular jets and hydraulic jumps on an inclined plane. <i>Journal of Fluid Mechanics</i> , <b>2011</b> , 675, 87-116	3.7	44
48	Experimental investigation into segregating granular flows down chutes. <i>Physics of Fluids</i> , <b>2011</b> , 23, 013301	4.0	94
47	Large particle segregation, transport and accumulation in granular free-surface flows. <i>Journal of Fluid Mechanics</i> , <b>2010</b> , 652, 105-137	3.7	76
46	Particle size segregation in granular avalanches: A brief review of recent progress <b>2010</b> ,		8
45	Large particle segregation, transport and accumulation in granular free-surface flows [ERRATUM]. <i>Journal of Fluid Mechanics</i> , <b>2010</b> , 657, 539-539	3.7	18
44	Segregation, recirculation and deposition of coarse particles near two-dimensional avalanche fronts. <i>Journal of Fluid Mechanics</i> , <b>2009</b> , 629, 387-423	3.7	99
43	Breaking size segregation waves and particle recirculation in granular avalanches. <i>Journal of Fluid Mechanics</i> , <b>2008</b> , 596, 261-284	3.7	33
42	Stable solutions of a scalar conservation law for particle-size segregation in dense granular avalanches. <i>European Journal of Applied Mathematics</i> , <b>2008</b> , 19, 61-86	1	20
41	Deflecting dams and the formation of oblique shocks in snow avalanches at Flateyri, Iceland. <i>Journal of Geophysical Research</i> , <b>2007</b> , 112,		36
40	Weak, strong and detached oblique shocks in gravity-driven granular free-surface flows. <i>Journal of Fluid Mechanics</i> , <b>2007</b> , 579, 113-136	3.7	60
39	Pattern selection by a granular wave in a rotating drum. <i>Physical Review E</i> , <b>2006</b> , 73, 061302	2.4	40
38	Particle-size segregation and diffusive remixing in shallow granular avalanches. <i>Journal of Fluid Mechanics</i> , <b>2006</b> , 569, 365	3.7	131
37	Time-dependent solutions for particle-size segregation in shallow granular avalanches. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , <b>2006</b> , 462, 947-972	2.4	29
36	A three-phase mixture theory for particle size segregation in shallow granular free-surface flows. <i>Journal of Fluid Mechanics</i> , <b>2006</b> , 550, 1	3.7	68
35	A theory for particle size segregation in shallow granular free-surface flows. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , <b>2005</b> , 461, 1447-1473	2.4	176

34	Shock waves, dead zones and particle-free regions in rapid granular free-surface flows. <i>Journal of Fluid Mechanics</i> , <b>2003</b> , 491, 161-181	3.7	227
33	Rapid Granular Avalanches. <i>Lecture Notes in Applied and Computational Mechanics</i> , <b>2003</b> , 3-42	0.3	4
32	Particle Image Velocimetry (PIV) for Granular Avalanches on Inclined Planes. <i>Lecture Notes in Applied and Computational Mechanics</i> , <b>2003</b> , 195-218	0.3	13
31	Shock-Capturing and Front-Tracking Methods for Granular Avalanches. <i>Journal of Computational Physics</i> , <b>2002</b> , 175, 269-301	4.1	104
30	Granular flow in partially filled slowly rotating drums. <i>Journal of Fluid Mechanics</i> , <b>2001</b> , 441, 1-29	3.7	128
29	Flow of dense avalanches past obstructions. <i>Annals of Glaciology</i> , <b>2001</b> , 32, 281-284	2.5	50
28	An accurate shock-capturing finite-difference method to solve the Savage-Hutter equations in avalanche dynamics. <i>Annals of Glaciology</i> , <b>2001</b> , 32, 263-267	2.5	16
27	Dense Granular Avalanches: Mathematical Description and Experimental Validation <b>2001</b> , 339-366		12
26	Steady Motion of a Finite Granular Mass in a Rotating Drum. <i>Journal of Mechanics</i> , <b>2000</b> , 16, 67-72	1	2
25	Shock Waves and Particle Size Segregation in Shallow Granular Flows. <i>Solid Mechanics and Its Applications</i> , <b>2000</b> , 269-276	0.4	1
24	Gravity-driven free surface flow of granular avalanches over complex basal topography. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , <b>1999</b> , 455, 1841-1874	2.4	304
23	Loss of Hyperbolicity and Ill-posedness of the Viscous Elastic Sea Ice Rheology in Uniaxial Divergent Flow. <i>Journal of Physical Oceanography</i> , <b>1999</b> , 29, 2920-2929	2.4	22
22	Methods of similitude in granular avalanche flows <b>1999</b> , 415-428		10
21	Channelized free-surface flow of cohesionless granular avalanches in a chute with shallow lateral curvature. <i>Journal of Fluid Mechanics</i> , <b>1999</b> , 392, 73-100	3.7	115
20	Limiting stress states in granular avalanches. <i>Annals of Glaciology</i> , <b>1998</b> , 26, 272-276	2.5	12
19	On the inclusion of a velocity-dependent basal drag in avalanche models. <i>Annals of Glaciology</i> , <b>1998</b> , 26, 277-280	2.5	2
18	Physik granularer Lawinen. <i>Physik Journal</i> , <b>1998</b> , 54, 37-43		15
17	On the inclusion of a velocity-dependent basal drag in avalanche models. <i>Annals of Glaciology</i> , <b>1998</b> , 26, 277-280	2.5	9

16	Limiting stress states in granular avalanches. <i>Annals of Glaciology</i> , <b>1998</b> , 26, 272-276	2.5	4
15	Particle Size Segregation, Granular Shocks and Stratification Patterns <b>1998</b> , 697-702		6
14	Depth-hoar growth rates near a rocky outcrop. <i>Journal of Glaciology</i> , <b>1998</b> , 44, 477-484	3.4	
13	Pattern formation in granular avalanches. <i>Continuum Mechanics and Thermodynamics</i> , <b>1997</b> , 9, 341-345	3.5	111
12	Interaction models for mixtures with application to phase transitions. <i>International Journal of Engineering Science</i> , <b>1997</b> , 35, 55-74	5.7	6
11	Granular Avalanches on Complex Topography. <i>Solid Mechanics and Its Applications</i> , <b>1997</b> , 275-286	0.4	1
10	Water movement in wet snow. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , <b>1996</b> , 354, 465-500	3	12
9	Sea Ice Ridging Schemes. <i>Journal of Physical Oceanography</i> , <b>1996</b> , 26, 2420-2428	2.4	9
8	Balance relations for classical mixtures containing a moving non-material surface with application to phase transitions. <i>Continuum Mechanics and Thermodynamics</i> , <b>1996</b> , 8, 171-187	3.5	7
7	Phase change interactions and singular fronts. <i>Continuum Mechanics and Thermodynamics</i> , <b>1995</b> , 7, 387-414	3.4	10
6	A phase-changing dry snowpack model. <i>Journal of Glaciology</i> , <b>1995</b> , 41, 11-29	3.4	1
5	A phase-changing dry snowpack model. <i>Journal of Glaciology</i> , <b>1995</b> , 41, 11-29	3.4	9
4	The compaction of polar snow packs. <i>Cold Regions Science and Technology</i> , <b>1995</b> , 23, 109-119	3.8	11
3	The effect of change in thermal properties on the propagation of a periodic thermal wave: Application to a snow-buried rocky outcrop. <i>Journal of Geophysical Research</i> , <b>1995</b> , 100, 15267-15279		3
2	Stability of the Viscous-Plastic Sea Ice Rheology. <i>Journal of Physical Oceanography</i> , <b>1995</b> , 25, 971-978	2.4	18
1	A dry snow pack model. <i>Cold Regions Science and Technology</i> , <b>1994</b> , 22, 135-148	3.8	13