

Michael G Worster

List of Publications by Year in descending order

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111
papers

6,040
citations

61984
43
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74163
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112
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112
docs citations

112
times ranked

3205
citing authors

#	ARTICLE	IF	CITATIONS
1	Colloidal mushy layers. <i>Journal of Fluid Mechanics</i> , 2021, 914, .	3.4	7
2	Transpiration through hydrogels. <i>Journal of Fluid Mechanics</i> , 2021, 925, .	3.4	9
3	Thermal regelation of single particles and particle clusters in ice. <i>Soft Matter</i> , 2021, 17, 1779-1787.	2.7	1
4	Can unconfined ice shelves provide buttressing via hoop stresses?. <i>Journal of Glaciology</i> , 2020, 66, 349-361.	2.2	7
5	The formation of grounding zone wedges: theory and experiments. <i>Journal of Fluid Mechanics</i> , 2020, 898, .	3.4	6
6	Permeability measurements using oscillatory flows. <i>Experiments in Fluids</i> , 2020, 61, 1.	2.4	1
7	Instability of radially spreading extensional flows. Part 1. Experimental analysis. <i>Journal of Fluid Mechanics</i> , 2019, 881, 722-738.	3.4	11
8	Instability of radially spreading extensional flows. Part 2. Theoretical analysis. <i>Journal of Fluid Mechanics</i> , 2019, 881, 739-771.	3.4	8
9	Stability of lubricated viscous gravity currents. Part 1. Internal and frontal analyses and stabilisation by horizontal shear. <i>Journal of Fluid Mechanics</i> , 2019, 871, 970-1006.	3.4	11
10	Stability of lubricated viscous gravity currents. Part 2. Global analysis and stabilisation by buoyancy forces. <i>Journal of Fluid Mechanics</i> , 2019, 871, 1007-1027.	3.4	11
11	Controls on microstructural features during solidification of colloidal suspensions. <i>Acta Materialia</i> , 2018, 157, 288-297.	7.9	17
12	Dynamics of laterally confined marine ice sheets. <i>Journal of Fluid Mechanics</i> , 2016, 790, .	3.4	10
13	Flow-induced compaction of a deformable porous medium. <i>Physical Review E</i> , 2016, 93, 023116.	2.1	28
14	On the thermodynamic boundary conditions of a solidifying mushy layer with outflow. <i>Journal of Fluid Mechanics</i> , 2015, 762, .	3.4	4
15	Lubricated viscous gravity currents. <i>Journal of Fluid Mechanics</i> , 2015, 766, 626-655.	3.4	18
16	Assessment of ice flow dynamics in the zone close to the calving front of Antarctic ice shelves. <i>Journal of Glaciology</i> , 2015, 61, 1194-1206.	2.2	9
17	Sea-ice thermodynamics and brine drainage. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2015, 373, 20140166.	3.4	32
18	Freezing colloidal suspensions: periodic ice lenses and compaction. <i>Journal of Fluid Mechanics</i> , 2014, 758, 786-808.	3.4	35

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19	Dynamics of Marine Ice Sheets. Procedia IUTAM, 2014, 10, 263-272.	1.2	2
20	A physically based parameterization of gravity drainage for sea-ice modeling. Journal of Geophysical Research: Oceans, 2014, 119, 5599-5621.	2.6	23
21	Lateral controls on grounding-line dynamics. Journal of Fluid Mechanics, 2013, 722, .	3.4	23
22	Fluxes through steady chimneys in a mushy layer during binary alloy solidification. Journal of Fluid Mechanics, 2013, 714, 127-151.	3.4	23
23	Axisymmetric gravity currents of power-law fluids over a rigid horizontal surface. Journal of Fluid Mechanics, 2013, 716, .	3.4	25
24	An experimental and theoretical study of the dynamics of grounding lines. Journal of Fluid Mechanics, 2013, 728, 5-28.	3.4	13
25	A simple dynamical model for gravity drainage of brine from growing sea ice. Geophysical Research Letters, 2013, 40, 307-311.	4.0	19
26	Elastic dynamics and tidal migration of grounding lines modify subglacial lubrication and melting. Geophysical Research Letters, 2013, 40, 5877-5881.	4.0	42
27	Release of a viscous power-law fluid over an inviscid ocean. Journal of Fluid Mechanics, 2012, 700, 63-76.	3.4	11
28	Dynamics of a viscous layer flowing radially over an inviscid ocean. Journal of Fluid Mechanics, 2012, 696, 152-174.	3.4	28
29	Periodic Ice Banding in Freezing Colloidal Dispersions. Langmuir, 2012, 28, 16512-16523.	3.5	50
30	Melting and dissolving of a vertical solid surface with laminar compositional convection. Journal of Fluid Mechanics, 2011, 687, 118-140.	3.4	18
31	Elastic response of a grounded ice sheet coupled to a floating ice shelf. Physical Review E, 2011, 84, 036111.	2.1	30
32	Patterns of convection in solidifying binary solutions. Geophysical and Astrophysical Fluid Dynamics, 2011, 105, 304-328.	1.2	2
33	On the mechanisms of icicle evolution. Journal of Fluid Mechanics, 2010, 647, 287-308.	3.4	16
34	Interactions between steady and oscillatory convection in mushy layers. Journal of Fluid Mechanics, 2010, 645, 411-434.	3.4	16
35	Dynamics of viscous grounding lines. Journal of Fluid Mechanics, 2010, 648, 363-380.	3.4	29
36	Linear stability of a solid-vapour interface. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2010, 466, 1005-1025.	2.1	3

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37	Stability of ice-sheet grounding lines. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2010, 466, 1597-1620.	2.1	80
38	Ice growth in a spherical cavity of a porous medium. Journal of Glaciology, 2010, 56, 271-277.	2.2	48
39	Frost flower formation on sea ice and lake ice. Geophysical Research Letters, 2009, 36, .	4.0	51
40	Desalination processes of sea ice revisited. Journal of Geophysical Research, 2009, 114, .	3.3	157
41	Axisymmetric viscous gravity currents flowing over a porous medium. Journal of Fluid Mechanics, 2009, 622, 135-144.	3.4	18
42	Simulation of directional solidification, thermochemical convection, and chimney formation in a Hele-Shaw cell. Journal of Computational Physics, 2008, 227, 9823-9840.	3.8	59
43	Conditions for defect-free solidification of aqueous ammonium chloride in a quasi two-dimensional directional solidification facility. Journal of Crystal Growth, 2008, 310, 3545-3551.	1.5	11
44	In situ measurements of the evolution of young sea ice. Journal of Geophysical Research, 2008, 113, .	3.3	93
45	A geophysical-scale model of vertical natural convection boundary layers. Journal of Fluid Mechanics, 2008, 609, 111-137.	3.4	59
46	Steady-state solidification of aqueous ammonium chloride. Journal of Fluid Mechanics, 2008, 599, 465-476.	3.4	59
47	Comment on "A quantitative framework for interpretation of basal ice facies formed by ice accretion over subglacial sediment" by Poul Christoffersen et al.. Journal of Geophysical Research, 2007, 112, .	3.3	7
48	Steady-state mushy layers: experiments and theory. Journal of Fluid Mechanics, 2007, 570, 69-77.	3.4	42
49	Morphological instability in freezing colloidal suspensions. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2007, 463, 723-733.	2.1	82
50	Free convection in laterally solidifying mushy regions. Journal of Fluid Mechanics, 2006, 558, 69.	3.4	13
51	Solidification of colloidal suspensions. Journal of Fluid Mechanics, 2006, 554, 147.	3.4	158
52	Nonlinear oscillatory convection in mushy layers. Journal of Fluid Mechanics, 2006, 553, 419.	3.4	21
53	Magnetic resonance imaging of structure and convection in solidifying mushy layers. Journal of Fluid Mechanics, 2006, 552, 99.	3.4	43
54	Interfacial conditions between a pure fluid and a porous medium: implications for binary alloy solidification. Journal of Fluid Mechanics, 2006, 550, 149.	3.4	265

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55	Numerical modelling of convection in a reactive porous medium with a mobile mushy-liquid interface. <i>Journal of Fluid Mechanics</i> , 2006, 549, 99.	3.4	9
56	A one-dimensional enthalpy model of sea ice. <i>Annals of Glaciology</i> , 2006, 44, 123-128.	1.4	25
57	Solidification of a binary alloy: Finite-element, single-domain simulation and new benchmark solutions. <i>Journal of Computational Physics</i> , 2006, 216, 247-263.	3.8	32
58	PREMELTING DYNAMICS. <i>Annual Review of Fluid Mechanics</i> , 2006, 38, 427-452.	25.0	199
59	Solidification using smoothed particle hydrodynamics. <i>Journal of Computational Physics</i> , 2005, 206, 684-705.	3.8	89
60	A non-destructive method for measuring the salinity and solid fraction of growing sea ice in situ. <i>Journal of Glaciology</i> , 2005, 51, 159-166.	2.2	67
61	Surface Transport in Premelted Films with Application to Grain-Boundary Grooving. <i>Physical Review Letters</i> , 2005, 95, 176102.	7.8	7
62	A time-dependent formulation of the mushy-zone free-boundary problem. <i>Journal of Fluid Mechanics</i> , 2005, 541, 193.	3.4	18
63	Time-dependent fluxes across double-diffusive interfaces. <i>Journal of Fluid Mechanics</i> , 2004, 505, 287-307.	3.4	24
64	Premelting dynamics in a continuum model of frost heave. <i>Journal of Fluid Mechanics</i> , 2004, 498, 227-244.	3.4	194
65	Solidification and compositional convection of a ternary alloy. <i>Journal of Fluid Mechanics</i> , 2003, 497, 167-199.	3.4	19
66	Impact of underwater-ice evolution on Arctic summer sea ice. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	114
67	Steady-state chimneys in a mushy layer. <i>Journal of Fluid Mechanics</i> , 2002, 455, 387-411.	3.4	44
68	The influence of ocean flow on newly forming sea ice. <i>Journal of Geophysical Research</i> , 2002, 107, 1-1.	3.3	41
69	SESSILE DROP SOLIDIFICATION. , 2002, , 283-283.		0
70	Two-dimensional viscous gravity currents flowing over a deep porous medium. <i>Journal of Fluid Mechanics</i> , 2001, 440, 359-380.	3.4	97
71	Diffusion-controlled solidification of a ternary melt from a cooled boundary. <i>Journal of Fluid Mechanics</i> , 2001, 432, 201-217.	3.4	38
72	Particle trapping at an advancing solidification front with interfacial-curvature effects. <i>Journal of Crystal Growth</i> , 2001, 223, 420-432.	1.5	76

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73	Possible displacement of the climate signal in ancient ice by premelting and anomalous diffusion. Nature, 2001, 411, 568-571.	27.8	124
74	Mushy Zones with Fully Developed Chimneys. , 2001, , 71-80.		5
75	Similarity solutions describing the melting of a mushy layer. Journal of Crystal Growth, 2000, 208, 746-756.	1.5	16
76	Solidification of leads: Theory, experiment, and field observations. Journal of Geophysical Research, 2000, 105, 1123-1134.	3.3	59
77	The interaction between a particle and an advancing solidification front. Journal of Crystal Growth, 1999, 205, 427-440.	1.5	131
78	Weak convection, liquid inclusions and the formation of chimneys in mushy layers. Journal of Fluid Mechanics, 1999, 388, 197-215.	3.4	62
79	Flow-induced morphological instability of a mushy layer. Journal of Fluid Mechanics, 1999, 391, 337-357.	3.4	38
80	Corrugations of the Sea-Ice-Ocean Interface Caused By Ocean Shear. , 1999, , 285-287.		0
81	A numerical investigation of steady convection in mushy layers during the directional solidification of binary alloys. Journal of Fluid Mechanics, 1998, 356, 199-220.	3.4	51
82	Natural convection during solidification of an alloy from above with application to the evolution of sea ice. Journal of Fluid Mechanics, 1997, 344, 291-316.	3.4	166
83	Natural Convection, Solute Trapping, and Channel Formation during Solidification of Saltwater. Journal of Physical Chemistry B, 1997, 101, 6132-6136.	2.6	95
84	the phase evolution of Young Sea Ice. Geophysical Research Letters, 1997, 24, 1251-1254.	4.0	67
85	CONVECTION IN MUSHY LAYERS. Annual Review of Fluid Mechanics, 1997, 29, 91-122.	25.0	260
86	A new oscillatory instability in a mushy layer during the solidification of binary alloys. Journal of Fluid Mechanics, 1996, 307, 245-267.	3.4	62
87	The case for a dynamic contact angle in containerless solidification. Journal of Crystal Growth, 1996, 163, 329-338.	1.5	108
88	A Theory of Premelting Dynamics for all Power Law Forces. Physical Review Letters, 1996, 76, 3602-3605.	7.8	69
89	Dynamics of premelted films: Frost heave in a capillary. Physical Review E, 1995, 51, 4679-4689.	2.1	50
90	Weakly nonlinear analysis of convection in mushy layers during the solidification of binary alloys. Journal of Fluid Mechanics, 1995, 302, 307-331.	3.4	99

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91	Flow focusing instability in a solidifying mushy layer. Journal of Fluid Mechanics, 1995, 297, 293-305.	3.4	18
92	Segregation and flow during the solidification of alloys. Journal of Crystal Growth, 1994, 139, 134-146.	1.5	18
93	The transient behaviour of alloys solidified from below prior to the formation of chimneys. Journal of Fluid Mechanics, 1994, 269, 23-44.	3.4	41
94	The crystallization of lava lakes. Journal of Geophysical Research, 1993, 98, 15891-15901.	3.3	61
95	Instabilities of the liquid and mushy regions during solidification of alloys. Journal of Fluid Mechanics, 1992, 237, 649-669.	3.4	273
96	On measurement and prediction of the solid fraction within mushy layers. Journal of Crystal Growth, 1992, 125, 487-494.	1.5	21
97	Vigorous Motions in Magma Chambers and Lava Lakes. The IMA Volumes in Mathematics and Its Applications, 1992,, 141-173.	0.5	8
98	Natural convection in a mushy layer. Journal of Fluid Mechanics, 1991, 224, 335-359.	3.4	179
99	Measurement of the solid fraction in the crystallization of a binary melt. Journal of Crystal Growth, 1991, 113, 566-574.	1.5	20
100	Structure of a Convecting Mushy Layer. Applied Mechanics Reviews, 1990, 43, S59-S62.	10.1	4
101	Solidification of an alloy cooled from above. Part 3. Compositional stratification within the solid. Journal of Fluid Mechanics, 1990, 218, 337.	3.4	30
102	Solidification of an alloy cooled from above Part 2. Non-equilibrium interfacial kinetics. Journal of Fluid Mechanics, 1990, 217, 331-348.	3.4	56
103	Solidification of an alloy cooled from above Part 1. Equilibrium growth. Journal of Fluid Mechanics, 1990, 216, 323-342.	3.4	99
104	Fluid Sciences and Materials Science in Space. Edited by H. U. WALTER. Springer-Verlag, 1987. 745 pp. DM 320.. Journal of Fluid Mechanics, 1990, 211, 657-659.	3.4	0
105	Convection and crystallization in magma cooled from above. Earth and Planetary Science Letters, 1990, 101, 78-89.	4.4	114
106	Disequilibrium and macrosegregation during solidification of a binary melt. Nature, 1989, 340, 357-362.	27.8	68
107	Solidification of an alloy from a cooled boundary. Journal of Fluid Mechanics, 1986, 167, 481.	3.4	282
108	The Axisymmetric Laminar Plume: Asymptotic Solution for Large Prandtl Number. Studies in Applied Mathematics, 1986, 75, 139-152.	2.4	32

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109	Dynamic solidification of a binary melt. Nature, 1985, 314, 703-707.	27.8	170
110	Laminar free convection in confined regions. Journal of Fluid Mechanics, 1985, 156, 301.	3.4	41
111	Time-dependent density profiles in a filling box. Journal of Fluid Mechanics, 1983, 132, 457-466.	3.4	78