Richard C A Hindmarsh

List of Publications by Year
in descending order

109 papers	8,137 citations	70961 41 h-index	51492 86 g-index
118 all docs	118 docs citations	118 times ranked	4576 citing authors

#	Article	IF	Citations
1	Bedmap2: improved ice bed, surface and thickness datasets for Antarctica. Cryosphere, 2013, 7, 375-393.	1.5	1,455
2	Sediment deformation beneath glaciers: Rheology and geological consequences. Journal of Geophysical Research, 1987, 92, 9059-9082.	3.3	818
3	Potential sea-level rise from Antarctic ice-sheet instability constrained by observations. Nature, 2015, 528, 115-118.	13.7	298
4	Formation of mega-scale glacial lineations observed beneath a West Antarctic ice stream. Nature Geoscience, 2009, 2, 585-588.	5.4	281
5	Recent Antarctic Peninsula warming relative to Holocene climate and ice-shelf history. Nature, 2012, 489, 141-144.	13.7	265
6	Benchmark experiments for higher-order and full-Stokes ice sheet models (ISMIPâ€“HOM). Cryosphere, 2008, 2, 95-108.	1.5	221
7	Thin-Film Flows with Wall Slip: An Asymptotic Analysis of Higher Order Glacier Flow Models. Quarterly Journal of Mechanics and Applied Mathematics, 2010, 63, 73-114.	0.5	193
8	Results of the Marine Ice Sheet Model Intercomparison Project, MISMIP. Cryosphere, 2012, 6, 573-588.	1.5	191
9	Getting around Antarctica: new high-resolution mappings of the grounded and freely-floating boundaries of the Antarctic ice sheet created for the International Polar Year. Cryosphere, 2011, 5, 569-588.	1.5	187
10	Grounding-line migration in plan-view marine ice-sheet models: results of the ice2sea MISMIP3d intercomparison. Journal of Glaciology, 2013, 59, 410-422.	1.1	179
11	A numerical comparison of approximations to the Stokes equations used in ice sheet and glacier modeling. Journal of Geophysical Research, 2004, 109, .	3.3	145
12	Styles of subglacial glaciotectonic deformation within the context of the anglian ice-sheet. Earth Surface Processes and Landforms, 1990, 15, 227-241.	1.2	142
13	Coupling of iceâ€shelf melting and buttressing is a key process in iceâ€sheets dynamics. Geophysical Research Letters, 2010, 37, .	1.5	125
14	On the reconstruction of palaeo-ice sheets: Recent advances and future challenges. Quaternary Science Reviews, 2015, 125, 15-49.	1.4	125
15	Where to find 1.5 million yr old ice for the IPICS "Oldest-Ice" ice core. Climate of the Past, 2013, 9, 2489-2505.	1.3	123
16	Dynamical processes involved in the retreat of marine ice sheets. Journal of Glaciology, 2001, 47, 271-282.	1.1	110
17	Antarctic ice rises and rumples: Their properties and significance for ice-sheet dynamics and evolution. Earth-Science Reviews, 2015, 150, 724-745.	4.0	103
18	Drumlinization and drumlin-forming instabilities: viscous till mechanisms. Journal of Glaciology, 1998, 44, 293-314.	1.1	101

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19	Deforming beds: Viscous and plastic scales of deformation. Quaternary Science Reviews, 1997, 16, 1039-1056.	1.4	97
20	Widespread low rates of Antarctic glacial isostatic adjustment revealed by GPS observations. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	92
21	The instability theory of drumlin formation and its explanation of their varied composition and internal structure. Quaternary Science Reviews, 2013, 62, 77-96.	1.4	90
22	Full Stokes modeling of marine ice sheets: influence of the grid size. Annals of Glaciology, 2009, 50, 109-114.	2.8	77
23	Drumlinization and drumlin-forming instabilities: viscous till mechanisms. Journal of Glaciology, 1998, 44, 293-314.	1.1	75
24	Regular Patterns in Frictional Resistance of Ice-Stream Beds Seen by Surface Data Inversion. Science, 2013, 342, 1086-1089.	6.0	74
25	The role of membrane-like stresses in determining the stability and sensitivity of the Antarctic ice sheets: back pressure and grounding line motion. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2006, 364, 1733-1767.	1.6	72
26	The stability of a viscous till sheet coupled with ice flow, considered at wavelengths less than the ice thickness. Journal of Glaciology, 1998, 44, 285-292.	1.1	71
27	Bed Ribbing Instability Explanation: Testing a numerical model of ribbed moraine formation arising from coupled flow of ice and subglacial sediment. Journal of Geophysical Research, 2008, 113, .	3.3	67
28	Time-step limits for stable solutions of the ice-sheet equation. Annals of Glaciology, 1996, 23, 74-85.	2.8	66
29	Qualitative Dynamics of Marine Ice Sheets. , 1993, , 67-99.		66
30	Consistent generation of iceâ€streams via thermoâ€viscous instabilities modulated by membrane stresses. Geophysical Research Letters, 2009, 36, .	1.5	64
31	Sublimation of ice through sediment in beacon valley, antarctica. Geografiska Annaler, Series A: Physical Geography, 1998, 80, 209-219.	0.6	63
32	The stability of a viscous till sheet coupled with ice flow, considered at wavelengths less than the ice thickness. Journal of Glaciology, 1998, 44, 285-292.	1.1	62
33	Similarity of organized patterns in driving and basal stresses of Antarctic and Greenland ice sheets beneath extensive areas of basal sliding. Geophysical Research Letters, 2014, 41, 3925-3932.	1.5	58
34	Did ice streams shape the largest channels on Mars?. Geophysical Research Letters, 2007, 34, .	1.5	57
35	Flow speed within the Antarctic ice sheet and its controls inferred from satellite observations. Journal of Geophysical Research F: Earth Surface, 2015, 120, 1171-1188.	1.0	57
36	A 2700-year annual timescale and accumulation history for an ice core from Roosevelt Island, West Antarctica. Climate of the Past, 2019, 15, 751-779.	1.3	55

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37	Subglacial Lake Ellsworth: A candidate forin situexploration in West Antarctica. Geophysical Research Letters, 2004, 31, .	1.5	53
38	Late Holocene ice-flow reconfiguration in the Weddell Sea sector of West Antarctica. Quaternary Science Reviews, 2013, 78, 98-107.	1.4	53
39	Modes of Operation of Thermo-Mechanically Coupled Ice Sheets. Annals of Glaciology, 1989, 12, 57-69.	2.8	52
40	In-situquantification of ice rheology and direct measurement of the Raymond Effect at Summit, Greenland using a phase-sensitive radar. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	49
41	Low post-glacial rebound rates in the Weddell Sea due to Late Holocene ice-sheet readvance. Earth and Planetary Science Letters, 2015, 413, 79-89.	1.8	48
42	Stability of ice rises and uncoupled marine ice sheets. Annals of Glaciology, 1996, 23, 105-115.	2.8	44
43	The Ross Sea Dipole â€“ temperature, snow accumulation and sea ice variability in the Ross Sea region, Antarctica, over the past 2700Âyears. Climate of the Past, 2018, 14, 193-214.	1.3	44
44	Draping or overriding: The effect of horizontal stress gradients on internal layer architecture in ice sheets. Journal of Geophysical Research, 2006, 111, .	3.3	43
45	On the numerical computation of temperature in an ice sheet. Journal of Glaciology, 1999, 45, 568-574.	1.1	40
46	Three-dimensional flow influences on radar layer stratigraphy. Annals of Glaciology, 2007, 46, 22-28.	2.8	40
47	On the effects of divide migration, alongâ€ridge flow, and basal sliding on isochrones near an ice divide. Journal of Geophysical Research, 2009, 114, .	3.3	39
48	Modelling the dynamics of ice sheets. Progress in Physical Geography, 1993, 17, 391-412.	1.4	38
49	Recommendations for the collection and synthesis of Antarctic Ice Sheet mass balance data. Global and Planetary Change, 2004, 42, 1-15.	1.6	38
50	Time-scales and degrees of freedom operating in the evolution of continental ice-sheets. Transactions of the Royal Society of Edinburgh: Earth Sciences, 1990, 81, 371-384.	1.0	37
51	Dating ice flow change near the flow divide at Roosevelt Island, Antarctica, by using a thermomechanical model to predict radar stratigraphy. Journal of Geophysical Research, 2006, 111, .	3.3	37
52	Full-depth englacial vertical ice sheet velocities measured using phase-sensitive radar. Journal of Geophysical Research F: Earth Surface, 2014, 119, 2604-2618.	1.0	37
53	Modes of Operation of Thermo-Mechanically Coupled Ice Sheets. Annals of Glaciology, 1989, 12, 57-69.	2.8	36
54	Influence of a non-uniform velocity field on isochrone geometry along a steady flowline of an ice sheet. Journal of Glaciology, 2007, 53, 612-622.	1.1	36

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55	Coupled iceâ€“till dynamics and the seeding of drumlins and bedrock forms. Annals of Glaciology, 1999, 28, 221-230.	2.8	35
56	An observationally validated theory of viscous flow dynamics at the ice-shelf calving front. Journal of Glaciology, 2012, 58, 375-387.	1.1	35
57	Numerical fixed domain mapping solution of free-surface flows coupled with an evolving interior field. International Journal for Numerical and Analytical Methods in Geomechanics, 1988, 12, 437-459.	1.7	34
58	Timeâ€dependence of the spatial pattern of accumulation rate in East Antarctica deduced from isochronic radar layers using a 3â€D numerical ice flow model. Journal of Geophysical Research, 2011, 116, .	3.3	33
59	Sensitivity of the divide position at Siple Dome, West Antarctica, to boundary forcing. Annals of Glaciology, 1998, 27, 207-214.	2.8	31
60	Analytical solutions for the effect of topography, accumulation rate and lateral flow divergence on isochrone layer geometry. Journal of Glaciology, 2006, 52, 191-202.	1.1	31
61	Holocene stability of the Amundsen-Weddell ice divide, West Antarctica. Geology, 2011, 39, 935-938.	2.0	31
62	Computing the volume response of the Antarctic Peninsula ice sheet to warming scenarios to 2200. Journal of Glaciology, 2013, 59, 397-409.	1.1	31
63	Evidence for a large surface ablation zone in central East Antarctica during the last Ice Age. Quaternary Research, 2003, 59, 114-121.	1.0	30
64	Frequency response of ice streams. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 3285-3310.	1.0	29
65	Grounding line transient response in marine ice sheet models. Cryosphere, 2013, 7, 395-406.	1.5	29
66	Stabilists strike again. Nature, 1995, 376, 389-391.	13.7	28
67	A large-scale numerical model for computing isochrone geometry. Annals of Glaciology, 2009, 50, 130-140.	2.8	28
68	Automated processing to derive dip angles of englacial radar reflectors in ice sheets. Journal of Glaciology, 2011, 57, 260-266.	1.1	28
69	The unsteady plane flow of ice-sheets: A parabolic problem with two moving boundaries. Geophysical and Astrophysical Fluid Dynamics, 1987, 39, 183-225.	0.4	26
70	Formation mechanisms for iceâ€stream lateral shear margin moraines. Earth Surface Processes and Landforms, 2008, 33, 610-626.	1.2	25
71	Notes on Basic Glaciological Computational Methods and Algorithms. , 2001, , 222-249.		24
72	Ice-stream surface texture, sticky spots, waves and breathers: the coupled flow of ice, till and water. Journal of Glaciology, 1998, 44, 589-614.	1.1	23

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73	Thermoviscous stability of ice-sheet flows. Journal of Fluid Mechanics, 2004, 502, 17-40.	1.4	23
74	Basal freeze-on generates complex ice-sheet stratigraphy. Nature Communications, 2018, 9, 4669.	5.8	23
75	Stress gradient damping of thermoviscous ice flow instabilities. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	22
76	Testing for flow in the north polar layered deposits of Mars using radar stratigraphy and a simple 3D ice-flow model. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	22
77	Influence of channelling on heating in ice-sheet flows. Geophysical Research Letters, 2001, 28, 3681-3684.	1.5	21
78	Recent progress on combining geomorphological and geochronological data with ice sheet modelling, demonstrated using the last Britishâ€“Irish Ice Sheet. Journal of Quaternary Science, 2021, 36, 946-960.	1.1	20
79	Ice-stream surface texture, sticky spots, waves and breathers: the coupled flow of ice, till and water. Journal of Glaciology, 1998, 44, 589-614.	1.1	19
80	A modelling study of the response of Hatherton Glacier to Ross Ice Sheet grounding line retreat. Global and Planetary Change, 2004, 42, 143-153.	1.6	19
81	Timing, pace and controls on ice sheet retreat: an introduction to the BRITICEâ€CHRONO transect reconstructions of the Britishâ€“Irish Ice Sheet. Journal of Quaternary Science, 2021, 36, 673-680.	1.1	19
82	Flow at iceâ€divide triple junctions: 2. Threeâ€dimensional views of isochrone architecture from iceâ€penetrating radar surveys. Journal of Geophysical Research, 2011, 116, .	3.3	18
83	Coupled marine-ice-sheet/Earth dynamics using a dynamically consistent ice-sheet model and a self-gravitating viscous Earth model. Journal of Glaciology, 2001, 47, 258-270.	1.1	17
84	Optimal estimation of changes in the mass of ice sheets. Journal of Geophysical Research, 2003, 108, n/a-n/a.	3.3	17
85	Constraining past accumulation in the central Pine Island Glacier basin, West Antarctica, using radio-echo sounding. Journal of Glaciology, 2014, 60, 553-562.	1.1	17
86	Comment on Shaw J., Pugin, A. and Young, R. (2008): â€œA meltwater origin for Antarctic shelf bedforms with special attention to megalineationsâ€, Geomorphology 102, 364â€“375. Geomorphology, 2010, 117, 195-198.	1.1	16
87	Stochastic perturbation of divide position. Annals of Glaciology, 1996, 23, 94-104.	2.8	14
88	An 83â€‰000-year-old ice core from Roosevelt Island, Ross Sea, Antarctica. Climate of the Past, 2020, 16, 1691-1713.	1.3	14
89	Flow at iceâ€divide triple junctions: 1. Threeâ€dimensional fullâ€Stokes modeling. Journal of Geophysical Research, 2011, 116, .	3.3	13
90	Cavities and the effective pressure between abrading clasts and the bedrock. Annals of Glaciology, 1996, 22, 32-40.	2.8	12

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91	Determining the contribution of Antarctica to sea-level rise using data assimilation methods. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2006, 364, 1841-1865.	1.6	12
92	A comparison of two spectral approaches for computing the Earth response to surface loads. Geophysical Journal International, 2000, 141, 282-298.	1.0	11
93	ATAT 1.1, the Automated Timing Accordance Tool for comparing ice-sheet model output with geochronological data. Geoscientific Model Development, 2019, 12, 933-953.	1.3	11
94	Ellsworth Subglacial Lake, West Antarctica: A review of its history and recent field campaigns. Geophysical Monograph Series, 2011, , 221-233.	0.1	11
95	Normal modes of an ice sheet. Journal of Fluid Mechanics, 1997, 335, 393-413.	1.4	10
96	Use of ice-sheet normal modes for initialization and modelling small changes. Annals of Glaciology, 1997, 25, 85-95.	2.8	10
97	The relationship between sticky spots and radar reflectivity beneath an active West Antarctic ice stream. Annals of Glaciology, 2014, 55, 29-38.	2.8	10
98	Assessment of ice flow dynamics in the zone close to the calving front of Antarctic ice shelves. Journal of Glaciology, 2015, 61, 1194-1206.	1.1	9
99	Use of a viscous model of till rheology to describe gravitational loading instabilities in glacial sediments. Geological Society Special Publication, 2000, 176, 191-201.	0.8	8
100	On the numerical computation of temperature in an ice sheet. Journal of Glaciology, 1999, 45, 568-574.	1.1	7
101	Use of ice-sheet normal modes for initialization and modelling small changes. Annals of Glaciology, 1997, 25, 85-95.	2.8	6
102	Ill-posedness of the shallow-ice approximation when modelling thermo-viscous instabilities. Journal of Glaciology, 2011, 57, 1177-1178.	1.1	6
103	Centurial-millenial ice-rafted debris pulses from ablating marine ice sheets. Geophysical Research Letters, 2001, 28, 2477-2480.	1.5	5
104	Calculating balance velocities with a membrane stress correction. Journal of Glaciology, 2014, 60, 294-304.	1.1	5
105	Ice Sheet and Glacier Modelling. , 2018, , 607-663.		5
106	Sliding over anisotropic beds. Annals of Glaciology, 2000, 30, 137-145.	2.8	4
107	Microclimate and mass fluxes of debris-laden ice surfaces in Taylor Valley, Antarctica. Antarctic Science, 2015, 27, 85-100.	0.5	4
108	Pore-water signal of marine ice-sheets. Global and Planetary Change, 1999, 23, 197-211.	1.6	3

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109	Thermomechanical coupling of ice flow with the bedrock. Annals of Glaciology, 2003, 37, 390-396.	2.8	1