David Marshall

List of Publications by Year
in descending order

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110 papers	4,718 citations	81900 39 h-index	110387 64 g-index
115 all docs	115 docs citations	115 times ranked	3445 citing authors

#	Article	IF	Citations
1	A sea change in our view of overturning in the subpolar North Atlantic. Science, 2019, 363, 516-521.	12.6	333
2	A Theory for the Surface Atlantic Response to Thermohaline Variability. Journal of Physical Oceanography, 2002, 32, 1121-1132.	1.7	231
3	Subduction of water masses in an eddying ocean. Journal of Marine Research, 1997, 55, 201-222.	0.3	197
4	Eddy Saturation of Equilibrated Circumpolar Currents. Journal of Physical Oceanography, 2013, 43, 507-532.	1.7	177
5	Overturning in the Subpolar North Atlantic Program: A New International Ocean Observing System. Bulletin of the American Meteorological Society, 2017, 98, 737-752.	3.3	173
6	Three-dimensional unstructured mesh ocean modelling. Ocean Modelling, 2005, 10, 5-33.	2.4	164
7	Significant sink of ocean-eddy energy near western boundaries. Nature Geoscience, 2010, 3, 608-612.	12.9	151
8	A Framework for Parameterizing Eddy Potential Vorticity Fluxes. Journal of Physical Oceanography, 2012, 42, 539-557.	1.7	124
9	SUSTAINED MONITORING OF THE SOUTHERN OCEAN AT DRAKE PASSAGE: PAST ACHIEVEMENTS AND FUTURE PRIORITIES. Reviews of Geophysics, 2011, 49, .	23.0	121
10	Seasonality of submesoscale flows in the ocean surface boundary layer. Geophysical Research Letters, 2016, 43, 2118-2126.	4.0	104
11	Atlantic Climate Variability and Predictability: A CLIVAR Perspective. Journal of Climate, 2006, 19, 5100-5121.	3.2	99
12	On the eddy transfer of tracers: Advective or diffusive?. Journal of Marine Research, 1997, 55, 483-505.	0.3	93
13	On the Wind Power Input to the Ocean General Circulation. Journal of Physical Oceanography, 2012, 42, 1357-1365.	1.7	93
14	Basinwide Integrated Volume Transports in an Eddy-Filled Ocean. Journal of Physical Oceanography, 2009, 39, 3091-3110.	1.7	91
15	Parameterization of ocean eddies: Potential vorticity mixing, energetics and Arnoldâ€™s first stability theorem. Ocean Modelling, 2010, 32, 188-204.	2.4	85
16	Do We Require Adiabatic Dissipation Schemes in Eddy-Resolving Ocean Models?. Journal of Physical Oceanography, 1998, 28, 2050-2063.	1.7	72
17	The seasonal cycle of submesoscale flows. Ocean Modelling, 2015, 92, 69-84.	2.4	72
18	Recent Contributions of Theory to Our Understanding of the Atlantic Meridional Overturning Circulation. Journal of Geophysical Research: Oceans, 2019, 124, 5376-5399.	2.6	71

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19	On the Dynamics of Wind-Driven Circumpolar Currents. Journal of Physical Oceanography, 2001, 31, 3258-3273.	1.7	70
20	Atlantic-Pacific Asymmetry in Deep Water Formation. Annual Review of Earth and Planetary Sciences, 2018, 46, 327-352.	11.0	68
21	Eddy saturation and frictional control of the Antarctic Circumpolar Current. Geophysical Research Letters, 2017, 44, 286-292.	4.0	66
22	Global Teleconnections of Meridional Overturning Circulation Anomalies. Journal of Physical Oceanography, 2004, 34, 1702-1722.	1.7	64
23	Topographic Steering of the Antarctic Circumpolar Current. Journal of Physical Oceanography, 1995, 25, 1636-1650.	1.7	62
24	Gulf Stream separation in numerical ocean models. Geophysical Monograph Series, 2008, , 39-61.	0.1	62
25	Resolving and Parameterising the Ocean Mesoscale in Earth System Models. Current Climate Change Reports, 2020, 6, 137-152.	8.6	62
26	Reconciling theories of a mechanically driven meridional overturning circulation with thermohaline forcing and multiple equilibria. Climate Dynamics, 2007, 29, 821-836.	3.8	60
27	A Conceptual Model of Ocean Heat Uptake under Climate Change. Journal of Climate, 2014, 27, 8444-8465.	3.2	58
28	Advection of baroclinic eddies by depth mean flow. Geophysical Research Letters, 2014, 41, 3517-3521.	4.0	51
29	Submesoscale Instabilities in Mesoscale Eddies. Journal of Physical Oceanography, 2017, 47, 3061-3085.	1.7	51
30	Interactions between Geostrophic Eddies and the Mean Circulation over Large-Scale Bottom Topography. Journal of Physical Oceanography, 2000, 30, 3223-3238.	1.7	47
31	Spin-up and adjustment of the Antarctic Circumpolar Current and global pycnocline. Journal of Marine Research, 2011, 69, 167-189.	0.3	47
32	On the validity of downgradient eddy closures in ocean models. Journal of Geophysical Research, 2000, 105, 28613-28627.	3.3	46
33	Where do winds drive the Antarctic Circumpolar Current?. Geophysical Research Letters, 2010, 37, .	4.0	45
34	How slippery are piecewise-constant coastlines in numerical ocean models?. Tellus, Series A: Dynamic Meteorology and Oceanography, 1998, 50, 95-108.	1.7	44
35	Vertical Eddy Energy Fluxes in the North Atlantic Subtropical and Subpolar Gyres. Journal of Physical Oceanography, 2013, 43, 95-103.	1.7	44
36	Dynamical Pathways of Antarctic Bottom Water in the Atlantic. Journal of Physical Oceanography, 2000, 30, 622-640.	1.7	42

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37	An Implicit Formula for Boundary Current Separation. Journal of Physical Oceanography, 2001, 31, 1633-1638.	1.7	41
38	Dynamical Attribution of Recent Variability in Atlantic Overturning. Journal of Climate, 2016, 29, 3339-3352.	3.2	41
39	The Relation between Eddy-Induced Transport and Isopycnic Gradients of Potential Vorticity. Journal of Physical Oceanography, 1999, 29, 1571-1578.	1.7	40
40	Flow past a Cylinder on aÎ²Plane, with Application to Gulf Stream Separation and the Antarctic Circumpolar Current. Journal of Physical Oceanography, 2001, 31, 3274-3283.	1.7	40
41	Propagation of Meridional Circulation Anomalies along Western and Eastern Boundaries. Journal of Physical Oceanography, 2013, 43, 2699-2717.	1.7	39
42	Implementation of a Geometrically Informed and Energetically Constrained Mesoscale Eddy Parameterization in an Ocean Circulation Model. Journal of Physical Oceanography, 2018, 48, 2363-2382.	1.7	39
43	The Eliassenâ€“Palm flux tensor. Journal of Fluid Mechanics, 2013, 729, 69-102.	3.4	38
44	How slippery are piecewise-constant coastlines in numerical ocean models?. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 50, 95.	1.7	34
45	Localization of abrupt change in the North Atlantic thermohaline circulation. Geophysical Research Letters, 2002, 29, 7-1-7-4.	4.0	34
46	Emergent eddy saturation from an energy constrained eddy parameterisation. Ocean Modelling, 2017, 112, 125-138.	2.4	33
47	Influence of Topography on the Large-Scale Ocean Circulation. Journal of Physical Oceanography, 1995, 25, 1622-1635.	1.7	32
48	A Conjecture on the Role of Bottom-Enhanced Diapycnal Mixing in the Parameterization of Geostrophic Eddies. Journal of Physical Oceanography, 2008, 38, 1607-1613.	1.7	32
49	Adjoint goal-based error norms for adaptive mesh ocean modelling. Ocean Modelling, 2006, 15, 3-38.	2.4	29
50	Unstructured adaptive meshes for ocean modeling. Geophysical Monograph Series, 2008, , 383-408.	0.1	29
51	The role of ocean gateways in the dynamics and sensitivity to wind stress of the early Antarctic Circumpolar Current. Paleoceanography, 2015, 30, 284-302.	3.0	29
52	On the influence of bottom topography and the Deep Western Boundary Current on Gulf Stream separation. Journal of Marine Research, 2000, 58, 297-325.	0.3	28
53	A Model of the Ocean Overturning Circulation with Two Closed Basins and a Reentrant Channel. Journal of Physical Oceanography, 2017, 47, 2887-2906.	1.7	28
54	On the Thermodynamics of Subduction. Journal of Physical Oceanography, 1995, 25, 138-151.	1.7	25

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55	Remote forcing of the Antarctic Circumpolar Current by diapycnal mixing. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	25
56	The Injection of Zonal Momentum by Buoyancy Forcing in a Southern Ocean Model. Journal of Physical Oceanography, 2015, 45, 259-271.	1.7	24
57	Evaluation of a scalar eddy transport coefficient based on geometric constraints. Ocean Modelling, 2017, 109, 44-54.	2.4	24
58	Oscillatory sensitivity of Atlantic overturning to highâ€latitude forcing. Geophysical Research Letters, 2010, 37, .	4.0	23
59	Impacts and effects of mesoscale ocean eddies on ocean carbon storage and atmospheric pCO₂. Global Biogeochemical Cycles, 2014, 28, 877-896.	4.9	23
60	Distinct sources of interannual subtropical and subpolar Atlantic overturning variability. Nature Geoscience, 2021, 14, 491-495.	12.9	23
61	Random Movement of Mesoscale Eddies in the Global Ocean. Journal of Physical Oceanography, 2020, 50, 2341-2357.	1.7	23
62	Zonal Penetration Scale of Midlatitude Oceanic Jets. Journal of Physical Oceanography, 1992, 22, 1018-1032.	1.7	21
63	A Simple Model of the Response of the Atlantic to the North Atlantic Oscillation. Journal of Climate, 2014, 27, 4052-4069.	3.2	21
64	On the dynamical influence of ocean eddy potential vorticity fluxes. Ocean Modelling, 2015, 92, 169-182.	2.4	21
65	Gillâ€™s model of the Antarctic Circumpolar Current, revisited: The role of latitudinal variations in wind stress. Ocean Modelling, 2016, 97, 37-51.	2.4	21
66	On the insensitivity of the wind-driven circulation to bottom topography. Journal of Marine Research, 2001, 59, 1-27.	0.3	20
67	AMOC sensitivity to surface buoyancy fluxes: the role of air-sea feedback mechanisms. Climate Dynamics, 2019, 53, 4521-4537.	3.8	20
68	Sensitivity of Deep Ocean Mixing to Local Internal Tide Breaking and Mixing Efficiency. Geophysical Research Letters, 2019, 46, 14622-14633.	4.0	20
69	The impact of Southern Ocean residual upwelling on atmospheric CO2 on centennial and millennial timescales. Climate Dynamics, 2017, 48, 1611-1631.	3.8	19
70	A regime diagram for ocean geostrophic turbulence. Quarterly Journal of the Royal Meteorological Society, 2016, 142, 2411-2417.	2.7	15
71	Eddy Cancellation of the Ekman Cell in Subtropical Gyres. Journal of Physical Oceanography, 2016, 46, 2995-3010.	1.7	14
72	A Geometric Interpretation of Eddy Reynolds Stresses in Barotropic Ocean Jets. Journal of Physical Oceanography, 2016, 46, 2285-2307.	1.7	14

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73	Characterizing the chaotic nature of ocean ventilation. Journal of Geophysical Research: Oceans, 2017, 122, 7577-7594.	2.6	14
74	Locations and Mechanisms of Ocean Ventilation in the High-Latitude North Atlantic in an Eddy-Permitting Ocean Model. Journal of Climate, 2020, 33, 10113-10131.	3.2	14
75	On the Separation of a Barotropic Western Boundary Current from a Cape. Journal of Physical Oceanography, 2005, 35, 1726-1743.	1.7	13
76	Momentum Balance of the Wind-Driven and Meridional Overturning Circulation. Journal of Physical Oceanography, 2011, 41, 960-978.	1.7	13
77	An Idealized Model Study of Eddy Energetics in the Western Boundary â€œGraveyardâ€• Journal of Physical Oceanography, 2021, 51, 1265-1282.	1.7	13
78	The Effects of Stratification on Flow Separation. Journals of the Atmospheric Sciences, 2005, 62, 2618-2625.	1.7	12
79	A Model of Atlantic Heat Content and Sea Level Change in Response to Thermohaline Forcing. Journal of Climate, 2011, 24, 5619-5632.	3.2	12
80	Accurate representation of geostrophic and hydrostatic balance in unstructured mesh finite element ocean modelling. Ocean Modelling, 2011, 39, 248-261.	2.4	12
81	Vertical Fluxes of Potential Vorticity and the Structure of the Thermocline. Journal of Physical Oceanography, 2000, 30, 3102-3112.	1.7	11
82	A new gauge-invariant method for diagnosing eddy diffusivities. Ocean Modelling, 2016, 104, 252-268.	2.4	11
83	Implications of Eddy Cancellation for Nutrient Distribution Within Subtropical Gyres. Journal of Geophysical Research: Oceans, 2018, 123, 6720-6735.	2.6	11
84	Rossby rip currents. Geophysical Research Letters, 2013, 40, 4333-4337.	4.0	10
85	Dynamics of the Mediterranean Salinity Tongue. Journal of Physical Oceanography, 1999, 29, 1425-1441.	1.7	9
86	Understanding the Structure of the Subtropical Thermocline. Journal of Physical Oceanography, 2003, 33, 1240-1249.	1.7	9
87	Small and mesoscale processes and their impact on the large scale: an introduction. Deep-Sea Research Part II: Topical Studies in Oceanography, 2004, 51, 2883-2887.	1.4	9
88	A Geometric Interpretation of Southern Ocean Eddy Form Stress. Journal of Physical Oceanography, 2019, 49, 2553-2570.	1.7	9
89	The statistical nature of turbulent barotropic ocean jets. Ocean Modelling, 2017, 113, 34-49.	2.4	8
90	The Annual Cycle of Upper-Ocean Potential Vorticity and Its Relationship to Submesoscale Instabilities. Journal of Physical Oceanography, 2021, 51, 385-402.	1.7	8

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91	The role of ocean mixing in the climate system. , 2022, , 5-34.		8
92	Acute Sensitivity of Global Ocean Circulation and Heat Content to Eddy Energy Dissipation Timescale. Geophysical Research Letters, 2022, 49, .	4.0	8
93	Overturning cells in the Southern Ocean and subtropical gyres. Ocean Science, 2007, 3, 17-30.	3.4	7
94	Rossby wormholes. Journal of Marine Research, 2011, 69, 309-330.	0.3	7
95	Conceptual Models of the Wind-Driven and Thermohaline Circulation. International Geophysics, 2013, , 257-282.	0.6	7
96	Relative strength of the Antarctic Circumpolar Current and Atlantic Meridional Overturning Circulation. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 69, 1338884.	1.7	7
97	Impacts of Atmospheric Reanalysis Uncertainty on Atlantic Overturning Estimates at 25Â°N. Journal of Climate, 2018, 31, 8719-8744.	3.2	7
98	Demons in the North Atlantic: Variability of Deep Ocean Ventilation. Geophysical Research Letters, 2021, 48, e2020GL092340.	4.0	7
99	Idealised flow past an island in a dynamically adaptive finite element model. Ocean Dynamics, 2010, 60, 835-850.	2.2	6
100	On the Feedback of the Rhines-Young Pool on the Ventilated Thermocline. Journal of Physical Oceanography, 1993, 23, 1592-1596.	1.7	4
101	Eddy Formation in the Tropical Atlantic Induced by Abrupt Changes in the Meridional Overturning Circulation. Journal of Physical Oceanography, 2009, 39, 3021-3031.	1.7	4
102	Momentum Balance of the Wind-Driven and Meridional Overturning Circulation. Journal of Physical Oceanography, 2011, 41, 960-978.	1.7	4
103	Symmetric Instability in Cross-Equatorial Western Boundary Currents. Journal of Physical Oceanography, 2021, 51, 2049-2067.	1.7	4
104	Ertel Potential Vorticity versus Bernoulli Potential on Approximately Neutral Surfaces in the Antarctic Circumpolar Current. Journal of Physical Oceanography, 2020, 50, 2621-2648.	1.7	4
105	The Atlantic Overturning Circulation: More Evidence of Variability and Links to Climate. Bulletin of the American Meteorological Society, 2014, 95, ES163-ES166.	3.3	3
106	A Theoretical Model of Long Rossby Waves in the Southern Ocean and Their Interaction with Bottom Topography. Fluids, 2016, 1, 17.	1.7	3
107	Spurious forces can dominate the vorticity budget of ocean gyres on the Câ€grid. Journal of Advances in Modeling Earth Systems, 0, , .	3.8	3
108	Eddy-mixing entropy and its maximization in forced-dissipative geostrophic turbulence. Journal of Statistical Mechanics: Theory and Experiment, 2018, 2018, 073206.	2.3	2

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109	Why Mean Potential Vorticity Cannot Be Materially Conserved in the Eddying Southern Ocean. Journal of Physical Oceanography, 2022, 52, 1629-1654.	1.7	2
110	Resonance of Fofonoff's Mode in a Rotated Basin. Journal of Physical Oceanography, 1993, 23, 970-978.	1.7	0