Dave A May

List of Publications by Year
in descending order

51 papers	2,915 citations	236912 25 h-index	214788 47 g-index
75 all docs	75 docs citations	75 times ranked	2509 citing authors

#	Article	IF	Citations
1	Evolution and diversity of subduction zones controlled by slab width. Nature, 2007, 446, 308-311.	27.8	494
2	A comparison of numerical surface topography calculations in geodynamic modelling: an evaluation of the â€˜sticky airâ€™ method. Geophysical Journal International, 2012, 189, 38-54.	2.4	301
3	Numerical modelling of spontaneous slab breakoff and subsequent topographic response. Tectonophysics, 2011, 502, 244-256.	2.2	291
4	Numerical modelling of magma dynamics coupled to tectonic deformation of lithosphere and crust. Geophysical Journal International, 2013, 195, 1406-1442.	2.4	152
5	A stabilization algorithm for geodynamic numerical simulations with a free surface. Physics of the Earth and Planetary Interiors, 2010, 181, 12-20.	1.9	140
6	Preconditioned iterative methods for Stokes flow problems arising in computational geodynamics. Physics of the Earth and Planetary Interiors, 2008, 171, 33-47.	1.9	128
7	A scalable, matrix-free multigrid preconditioner for finite element discretizations of heterogeneous Stokes flow. Computer Methods in Applied Mechanics and Engineering, 2015, 290, 496-523.	6.6	104
8	Modular and flexible spectral-element waveform modelling in two and three dimensions. Geophysical Journal International, 2019, 216, 1675-1692.	2.4	100
9	Inversion of fluvial channels for paleorock uplift rates in Taiwan. Journal of Geophysical Research F: Earth Surface, 2014, 119, 1853-1875.	2.8	90
10	Benchmarking numerical models of brittle thrust wedges. Journal of Structural Geology, 2016, 92, 140-177.	2.3	81
11	Threeâ€dimensional simulations of the southern polar giant impact hypothesis for the origin of the Martian dichotomy. Geophysical Research Letters, 2014, 41, 8736-8743.	4.0	71
12	Development of a Stokes flow solver robust to large viscosity jumps using a Schur complement approach with mixed precision arithmetic. Journal of Computational Physics, 2011, 230, 8835-8851.	3.8	62
13	Kinematic interpretation of the 3D shapes of metamorphic core complexes. Geochemistry, Geophysics, Geosystems, 2012, 13, .	2.5	61
14	pTatin3D: High-Performance Methods for Long-Term Lithospheric Dynamics. , 2014, , .		61
15	On the solvability of incompressible Stokes with viscoplastic rheologies in geodynamics. Geochemistry, Geophysics, Geosystems, 2016, 17, 2213-2238.	2.5	60
16	Continental break-up of the South China Sea stalled by far-field compression. Nature Geoscience, 2018, 11, 605-609.	12.9	52
17	A linear inversion method to infer exhumation rates in space and time from thermochronometric data. Earth Surface Dynamics, 2014, 2, 47-65.	2.4	50
18	A model comparison study of large-scale mantleâ€“lithosphere dynamics driven by subduction. Physics of the Earth and Planetary Interiors, 2008, 171, 224-234.	1.9	43

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19	An adaptive staggered grid finite difference method for modeling geodynamic Stokes flows with strongly variable viscosity. Geochemistry, Geophysics, Geosystems, 2013, 14, 1200-1225.	2.5	43
20	A genetic link between transform and hyper-extended margins. Earth and Planetary Science Letters, 2017, 465, 184-192.	4.4	43
21	Interactions of 3D mantle flow and continental lithosphere near passive margins. Tectonophysics, 2010, 483, 20-28.	2.2	39
22	Overview of adaptive finite element analysis in computational geodynamics. Journal of Geodynamics, 2013, 70, 1-20.	1.6	37
23	Rotation, narrowing, and preferential reactivation of brittle structures during oblique rifting. Earth and Planetary Science Letters, 2020, 531, 115952.	4.4	36
24	Comparing thin-sheet models with 3-D multilayer models for continental collision. Geophysical Journal International, 2011, 187, 10-33.	2.4	33
25	Subduction initiates at straight passive margins. Geology, 2014, 42, 331-334.	4.4	32
26	A free surface capturing discretization for the staggered grid finite difference scheme. Geophysical Journal International, 2016, 204, 1518-1530.	2.4	27
27	Can a single bubble sink a ship?. American Journal of Physics, 2003, 71, 842-849.	0.7	24
28	Origin of ice diapirism, true polar wander, subsurface ocean, and tiger stripes of Enceladus driven by compositional convection. Icarus, 2009, 202, 669-680.	2.5	21
29	Numerical investigation of thermal spallation drilling using an uncoupled quasi-static thermoelastic finite element formulation. Journal of Thermal Stresses, 2016, 39, 1138-1151.	2.0	21
30	Subduction Initiation With Vertical Lithospheric Heterogeneities and New Fault Formation. Geophysical Research Letters, 2017, 44, 11,349.	4.0	21
31	Influences of surface processes on fold growth during 3â€Ð detachment folding. Geochemistry, Geophysics, Geosystems, 2014, 15, 3281-3303.	2.5	20
32	Optimal, scalable forward models for computing gravity anomalies. Geophysical Journal International, 2011, 187, 161-177.	2.4	19
33	Quantifying the impact of mechanical layering and underthrusting on the dynamics of the modern Indiaâ€Asia collisional system with 3â€Ð numerical models. Journal of Geophysical Research: Solid Earth, 2014, 119, 616-644.	3.4	18
34	Extreme-Scale Multigrid Components within PETSc. , 2016, , .		17
35	Devolatilization of Subducting Slabs, Part II: Volatile Fluxes and Storage. Geochemistry, Geophysics, Geosystems, 2019, 20, 6199-6222.	2.5	17
36	Thermal convection with a water ice I rheology: Implications for icy satellite evolution. Icarus, 2006, 180, 251-264.	2.5	14

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37	Fluidâ€assisted deformation of the subduction interface: Coupled and decoupled regimes from 2â€D hydromechanical modeling. Journal of Geophysical Research: Solid Earth, 2016, 121, 6132-6149.	3.4	12
38	Pipelined, Flexible Krylov Subspace Methods. SIAM Journal of Scientific Computing, 2016, 38, C441-C470.	2.8	11
39	Simulating faults and plate boundaries with a transversely isotropic plasticity model. Physics of the Earth and Planetary Interiors, 2016, 252, 77-90.	1.9	9
40	Implicit solution of the material transport in Stokes flow simulation: Toward thermal convection simulation surrounded by free surface. Computer Physics Communications, 2015, 192, 1-11.	7.5	8
41	Incompressible viscous formulations for deformation and yielding of the lithosphere. Geological Society Special Publication, 2007, 282, 457-472.	1.3	7
42	Seismic Source Tracking With Six Degreeâ€ofâ€Freedom Ground Motion Observations. Journal of Geophysical Research: Solid Earth, 2021, 126, e2020JB021112.	3.4	7
43	On the rise of strongly tilted mantle plume tails. Physics of the Earth and Planetary Interiors, 2011, 184, 63-79.	1.9	6
44	Rate and State Friction as a Spatially Regularized Transient Viscous Flow Law. Journal of Geophysical Research: Solid Earth, 2022, 127, .	3.4	6
45	Benchmark of three-dimensional numerical models of subduction against a laboratory experiment. Physics of the Earth and Planetary Interiors, 2018, 283, 110-121.	1.9	5
46	The Global Range of Temperatures on Convergent Plate Interfaces. Geochemistry, Geophysics, Geosystems, 2021, 22, e2021GC009849.	2.5	5
47	The impact of vent geometry on the growth of lava domes. Geophysical Journal International, 0, , .	2.4	5
48	Mantle plume dynamics at the rear of a retreating slab. Geophysical Journal International, 2020, 222, 1146-1163.	2.4	2
49	Contrasting transform and passive margin subsidence history and heat flow evolution: insights from 3D thermo-mechanical modelling. Geological Society Special Publication, 0, , SP524-2021-94.	1.3	2
50	An efficient partial-differential-equation-based method to compute pressure boundary conditions in regional geodynamic models. Solid Earth, 2022, 13, 1107-1125.	2.8	2
51	Pragmatic solvers for 3D Stokes and elasticity problems with heterogeneous coefficients: evaluating modern incomplete LDL^{<i>T</i>} preconditioners. Solid Earth, 2020, 11, 2031-2045.	2.8	1