Chris A Jones

List of Publications by Year
in descending order

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113 papers	5,686 citations	53794 45 h-index	79698 73 g-index
114 all docs	114 docs citations	114 times ranked	1611 citing authors

#	Article	IF	Citations
1	Motions in a Bose condensate. IV. Axisymmetric solitary waves. Journal of Physics A, 1982, 15, 2599-2619.	1.6	233
2	A numerical dynamo benchmark. Physics of the Earth and Planetary Interiors, 2001, 128, 25-34.	1.9	224
3	Planetary Magnetic Fields and Fluid Dynamos. Annual Review of Fluid Mechanics, 2011, 43, 583-614.	25.0	222
4	The onset of thermal convection in a rapidly rotating sphere. Journal of Fluid Mechanics, 2000, 405, 157-179.	3.4	194
5	Influence of the Earth's inner core on geomagnetic fluctuations and reversals. Nature, 1993, 365, 541-543.	27.8	190
6	The onset of thermal convection in rotating spherical shells. Journal of Fluid Mechanics, 2004, 501, 43-70.	3.4	181
7	The interaction of two spatially resonant patterns in thermal convection. Part 1. Exact 1:2 resonance. Journal of Fluid Mechanics, 1988, 188, 301-335.	3.4	174
8	Periodic and aperiodic dynamo waves. Geophysical and Astrophysical Fluid Dynamics, 1984, 30, 305-341.	1.2	172
9	Anelastic convection-driven dynamo benchmarks. Icarus, 2011, 216, 120-135.	2.5	146
10	The transition to wavy Taylor vortices. Journal of Fluid Mechanics, 1985, 157, 135-162.	3.4	122
11	Convectionâ€"driven geodynamo models. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2000, 358, 873-897.	3.4	120
12	Motions in a Bose condensate. V. Stability of solitary wave solutions of non-linear Schrodinger equations in two and three dimensions. Journal of Physics A, 1986, 19, 2991-3011.	1.6	104
13	Large-scale vortices in rapidly rotating Rayleighâ€"BÃ©nard convection. Journal of Fluid Mechanics, 2014, 758, 407-435.	3.4	101
14	Magnetoconvection Dynamos and the Magnetic Fields of Io and Ganymede. Science, 1997, 276, 1106-1108.	12.6	99
15	A convection driven geodynamo reversal model. Physics of the Earth and Planetary Interiors, 1999, 111, 3-20.	1.9	99
16	Typical Velocities and Magnetic Field Strengths in Planetary Interiors. Icarus, 2002, 157, 426-435.	2.5	97
17	Compressible convection in the deep atmospheres of giant planets. Icarus, 2009, 204, 227-238.	2.5	97
18	Axisymmetric convection in a cylinder. Journal of Fluid Mechanics, 1976, 73, 353.	3.4	91

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19	Convection-driven dynamos in a rotating plane layer. Journal of Fluid Mechanics, 2000, 404, 311-343.	3.4	91
20	Nonlinear Taylor vortices and their stability. Journal of Fluid Mechanics, 1981, 102, 249-261.	3.4	88
21	The role of inertia in the evolution of spherical dynamos. Geophysical Journal International, 2006, 164, 467-476.	2.4	87
22	The quasi-geostrophic model for rapidly rotating spherical convection outside the tangent cylinder. Journal of Fluid Mechanics, 2006, 554, 343.	3.4	85
23	On the Surface Heating of Synchronously Spinning Shortâ€Period Jovian Planets. Astrophysical Journal, 2005, 618, 512-523.	4.5	81
24	The effect of hyperviscosity on geodynamo models. Geophysical Research Letters, 1997, 24, 2869-2872.	4.0	79
25	A dynamo model of Jupiterâ€™s magnetic field. Icarus, 2014, 241, 148-159.	2.5	79
26	Strong spatial resonance and travelling waves in benard convection. Physics Letters, Section A: General, Atomic and Solid State Physics, 1987, 121, 224-228.	2.1	71
27	A self-consistent convection driven geodynamo model, using a mean field approximation. Physics of the Earth and Planetary Interiors, 1995, 92, 119-141.	1.9	71
28	Î±2-Dynamos and taylor's constraint. Geophysical and Astrophysical Fluid Dynamics, 1983, 27, 87-122.	1.2	70
29	On the magnetically stabilizing role of the Earth's inner core. Physics of the Earth and Planetary Interiors, 1995, 87, 171-181.	1.9	69
30	Performance benchmarks for a next generation numerical dynamo model. Geochemistry, Geophysics, Geosystems, 2016, 17, 1586-1607.	2.5	66
31	Linear theory of compressible convection in rapidly rotating spherical shells, using the anelastic approximation. Journal of Fluid Mechanics, 2009, 634, 291.	3.4	65
32	Helicity generation and subcritical behaviour in rapidly rotating dynamos. Journal of Fluid Mechanics, 2011, 688, 5-30.	3.4	65
33	A geodynamo model incorporating a finitely conducting inner core. Physics of the Earth and Planetary Interiors, 1993, 75, 317-327.	1.9	60
34	Numerical Simulations of Penetration and Overshoot in the Sun. Astrophysical Journal, 2006, 653, 765-773.	4.5	59
35	The Solar Dynamo. Space Science Reviews, 2010, 152, 591-616.	8.1	59
36	Modulated Taylorâ€“Couette flow. Journal of Fluid Mechanics, 1989, 208, 127-160.	3.4	58

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37	Nonlinear dynamos: A complex generalization of the Lorenz equations. Physica D: Nonlinear Phenomena, 1985, 14, 161-176.	2.8	57
38	Rotating convection-driven dynamos at low Ekman number. Physical Review E, 2002, 66, 056308.	2.1	57
39	The Boussinesq and anelastic liquid approximations for convection in the Earthâ€™s core. Physics of the Earth and Planetary Interiors, 2005, 152, 163-190.	1.9	56
40	The influence of boundary region heterogeneities on the geodynamo. Physics of the Earth and Planetary Interiors, 1997, 101, 13-32.	1.9	55
41	The transition to Earth-like torsional oscillations in magnetoconvection simulations. Earth and Planetary Science Letters, 2015, 419, 22-31.	4.4	55
42	Azimuthal winds, convection and dynamo action in the polar regions of planetary cores. Geophysical and Astrophysical Fluid Dynamics, 2006, 100, 319-339.	1.2	54
43	Course 2 Dynamo theory. Les Houches Summer School Proceedings, 2008, , 45-135.	0.2	53
44	THE LINEAR STRABILITY OF THE FLOW IN THE NARROW GAP BETWEEN TWO CONCENTRIC ROTATING SPHERES. Quarterly Journal of Mechanics and Applied Mathematics, 1983, 36, 19-42.	1.3	51
45	Magnetoconvection in a rapidly rotating sphere: the weakâ€“field case. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2003, 459, 773-797.	2.1	48
46	Structure and dynamics of the polar vortex in the Earth's core. Geophysical Research Letters, 2005, 32, .	4.0	48
47	The stability of the Couette flow of helium II. Journal of Fluid Mechanics, 1988, 197, 551-569.	3.4	46
48	Nonlinear Taylorâ€“Couette flow of helium II. Journal of Fluid Mechanics, 1995, 283, 329-340.	3.4	43
49	Dynamo action in a uniform ambient field. Physics of the Earth and Planetary Interiors, 1999, 111, 47-68.	1.9	43
50	Slow magnetic Rossby waves in the Earth's core. Geophysical Research Letters, 2015, 42, 6622-6629.	4.0	43
51	The influence of Ekman boundary layers on rotating convection. Geophysical and Astrophysical Fluid Dynamics, 1993, 71, 145-162.	1.2	40
52	On flow between counter-rotating cylinders. Journal of Fluid Mechanics, 1982, 120, 433-450.	3.4	38
53	Taylor's constraint in a spherical Î±Ï‰-dynamo. Geophysical and Astrophysical Fluid Dynamics, 1992, 67, 3-25.	1.2	37
54	Spectral radial basis functions for full sphere computations. Journal of Computational Physics, 2007, 227, 1209-1224.	3.8	37

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55	Convective turbulent viscosity acting on equilibrium tidal flows: new frequency scaling of the effective viscosity. Monthly Notices of the Royal Astronomical Society, 2020, 497, 3400-3417.	4.4	36
56	Convection driven geodynamo models of varying Ekman number. Geophysical and Astrophysical Fluid Dynamics, 1998, 88, 225-259.	1.2	35
57	Generation of magnetic fields by large-scale vortices in rotating convection. Physical Review E, 2015, 91, 041001.	2.1	35
58	A note on dynamo action at asymptotically small Ekman number. Geophysical and Astrophysical Fluid Dynamics, 1998, 88, 261-275.	1.2	33
59	The onset of magnetoconvection at large Prandtl number in a rotating layer I. Finite magnetic diffusion. Geophysical and Astrophysical Fluid Dynamics, 2000, 92, 289-325.	1.2	33
60	Anelastic spherical dynamos with radially variable electrical conductivity. Icarus, 2018, 305, 15-32.	2.5	33
61	Multiple jets and zonal flow on Jupiter. Geophysical Research Letters, 2003, 30, .	4.0	31
62	Rotating magnetic shallow water waves and instabilities in a sphere. Geophysical and Astrophysical Fluid Dynamics, 2017, 111, 282-322.	1.2	31
63	The dynamics and excitation of torsional waves in geodynamo simulations. Geophysical Journal International, 2014, 196, 724-735.	2.4	30
64	Nonlinear planetary dynamos in a rotating spherical shell. Geophysical and Astrophysical Fluid Dynamics, 1991, 60, 211-243.	1.2	28
65	Magnetoconvection in rapidly rotating boussinesq and compressible fluids. Geophysical and Astrophysical Fluid Dynamics, 1990, 55, 263-308.	1.2	26
66	Multiple jets and bursting in the rapidly rotating convecting two-dimensional annulus model with nearly plane-parallel boundaries. Journal of Fluid Mechanics, 2006, 567, 117.	3.4	25
67	Tidal flows with convection: frequency-dependence of the effective viscosity and evidence for anti-dissipation. Monthly Notices of the Royal Astronomical Society, 0, , .	4.4	25
68	Î±Ï‰-Dynamos and Taylor's constraint. Geophysical and Astrophysical Fluid Dynamics, 1988, 44, 117-139.	1.2	21
69	The dynamics of magnetic Rossby waves in spherical dynamo simulations: A signature of strong-field dynamos?. Physics of the Earth and Planetary Interiors, 2018, 276, 68-85.	1.9	21
70	The stability of axisymmetric convection. Geophysical and Astrophysical Fluid Dynamics, 1978, 11, 245-270.	1.2	20
71	On the stability of superfluid helium between rotating concentric cylinders. Physics Letters, Section A: General, Atomic and Solid State Physics, 1987, 122, 425-430.	2.1	20
72	Convective motions in the Earth's fluid core. Geophysical Research Letters, 1994, 21, 1939-1942.	4.0	20

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73	Numerical methods for the transition to wavy Taylor vortices. Journal of Computational Physics, 1985, 61, 321-344.	3.8	19
74	MULTIPLE EIGENVALUES AND MODE CLASSIFICATION IN PLANE OISEUILLE FLOW. Quarterly Journal of Mechanics and Applied Mathematics, 1988, 41, 363-382.	1.3	19
75	The onset of shear instability in stars. Geophysical and Astrophysical Fluid Dynamics, 1977, 8, 165-184.	1.2	18
76	Linear magnetoconvection in a rotating spherical shell, incorporating a finitely conducting inner core. Geophysical and Astrophysical Fluid Dynamics, 1995, 80, 205-227.	1.2	18
77	The onset of magnetoconvection at large Prandtl number in a rotating layer II. Small magnetic diffusion. Geophysical and Astrophysical Fluid Dynamics, 2000, 93, 173-226.	1.2	17
78	Compressible convection in the presence of rotation and a magnetic field. Geophysical and Astrophysical Fluid Dynamics, 1990, 53, 145-182.	1.2	16
79	Onset of convection in a rapidly rotating compressible fluid spherical shell. Geophysical and Astrophysical Fluid Dynamics, 1995, 80, 241-254.	1.2	14
80	Angular momentum transport by the GSF instability: non-linear simulations at the equator. Monthly Notices of the Royal Astronomical Society, 2019, 487, 1777-1794.	4.4	14
81	Large wavenumber convection in the rotating annulus. Geophysical and Astrophysical Fluid Dynamics, 2000, 93, 227-252.	1.2	13
82	On the necessary conditions for bursts of convection within the rapidly rotating cylindrical annulus. Physics of Fluids, 2012, 24, .	4.0	13
83	Large-scale-vortex dynamos in planarÂrotatingÂconvection. Journal of Fluid Mechanics, 2017, 815, 333-360.	3.4	13
84	Axisymmetric magnetoconvection in a twisted field. Journal of Fluid Mechanics, 1993, 253, 297.	3.4	12
85	Core-mantle interactions. Surveys in Geophysics, 1990, 11, 329-353.	4.6	11
86	Instability of Zonal Flows in Rotating Spherical Shells: An Application to Jupiter. Icarus, 2002, 155, 425-435.	2.5	11
87	Periodic, chaotic and steady solutions in Î±Ï‰-dynamos. Geophysical and Astrophysical Fluid Dynamics, 1992, 67, 37-64.	1.2	10
88	The Dynamical Effects of Hyperviscosity on Numerical Geodynamo Models. Studia Geophysica Et Geodaetica, 1998, 42, 247-253.	0.5	10
89	A Boussinesq slurry model of the F-layer at the base of Earthâ€™s outer core. Geophysical Journal International, 2018, 214, 2236-2249.	2.4	10
90	Non-axisymmetric spherical interface dynamos. Astronomy and Astrophysics, 2004, 423, L37-L40.	5.1	10

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91	Hydrodynamic instabilities in the solar tachocline. Astronomy and Astrophysics, 2008, 488, 819-827.	5.1	10
92	Torsional waves driven by convection and jets in Earthâ€™s liquid core. Geophysical Journal International, 2019, 216, 123-129.	2.4	9
93	Characterising Jupiter's dynamo radius using its magnetic energy spectrum. Earth and Planetary Science Letters, 2020, 530, 115879.	4.4	9
94	Angular momentum transport, layering, and zonal jet formation by the GSF instability: non-linear simulations at a general latitude. Monthly Notices of the Royal Astronomical Society, 2020, 495, 1468-1490.	4.4	9
95	Similarity and dynamic similarity models for large-eddy simulations of a rotating convection-driven dynamo. Geophysical Journal International, 2008, 172, 103-114.	2.4	7
96	Magnetic and thermal instabilities in a plane layer: I. Geophysical and Astrophysical Fluid Dynamics, 1997, 86, 201-227.	1.2	6
97	Anelastic torsional oscillations in Jupiter's metallic hydrogen region. Earth and Planetary Science Letters, 2019, 519, 50-60.	4.4	6
98	Fully developed anelastic convection with no-slip boundaries. Journal of Fluid Mechanics, 2022, 930, .	3.4	6
99	Appearance of vortices in rotating He II. Physical Review B, 1995, 51, 16174-16184.	3.2	5
100	Rapidly rotating plane layer convection with zonal flow. Geophysical and Astrophysical Fluid Dynamics, 2010, 104, 457-480.	1.2	5
101	Compressible Taylorâ€"Couette flow â€" instability mechanism and codimension 3 points. Journal of Fluid Mechanics, 2014, 750, 555-577.	3.4	5
102	Solitary magnetostrophic Rossby waves in spherical shells. Journal of Fluid Mechanics, 2020, 904, .	3.4	4
103	The boundary layer method for pulsating stars. Geophysical and Astrophysical Fluid Dynamics, 1979, 14, 61-101.	1.2	3
104	A closeâ€up view of Jupiter's magnetic field from Juno: New insights into the planet's deep interior. Geophysical Research Letters, 2017, 44, 5355-5359.	4.0	3
105	Data assimilation approach to analysing systems of ordinary differential equations. , 2018, , .		3
106	Nonlinear alpha-omega dynamos in a spherical shell. Geophysical and Astrophysical Fluid Dynamics, 1991, 60, 357-436.	1.2	2
107	Connecting a Starâ€™s Convection Zone with its Corona. Publications of the Astronomical Society of Australia, 1995, 12, 180-185.	3.4	2
108	Estimates for the effective electrical conductivity of the core in the interior of Jupiter and Saturn. Earth, Moon and Planets, 1996, 73, 221-236.	0.6	2

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109	Rotational and magnetic instability in the diffusive tachocline. Geophysical and Astrophysical Fluid Dynamics, 2005, 99, 493-511.	1.2	2
110	Jupiterâ€™s magnetic field revealed by the Juno spacecraft. Nature, 2018, 561, 36-37.	27.8	2
111	Viscous and inviscid strato-rotational instability. Journal of Fluid Mechanics, 2020, 894, .	3.4	2
112	An incompressible stratified fluid model ofComet Shoemaker-Levy 9's collision with Jupiter. Chinese Astronomy and Astrophysics, 2004, 28, 412-421.	0.3	0
113	The UK MHD Consortium: Goals and Recent Achievements. , 1999, , 529-535.		0