Philip S Marcus

List of Publications by Year
in descending order

45 papers	2,401 citations	201674 27 h-index	254184 43 g-index
46 all docs	46 docs citations	46 times ranked	1224 citing authors

#	Article	IF	Citations
1	Simulation of Taylor-Couette flow. Part 1. Numerical methods and comparison with experiment. Journal of Fluid Mechanics, 1984, 146, 45-64.	3.4	201
2	Jupiter's Great Red Spot and Other Vortices. Annual Review of Astronomy and Astrophysics, 1993, 31, 523-569.	24.3	184
3	Simulation of Taylor-Couette flow. Part 2. Numerical results for wavy-vortex flow with one travelling wave. Journal of Fluid Mechanics, 1984, 146, 65-113.	3.4	161
4	Numerical simulation of Jupiter's Great Red Spot. Nature, 1988, 331, 693-696.	27.8	150
5	Threeâ€dimensional Vortices in Stratified Protoplanetary Disks. Astrophysical Journal, 2005, 623, 1157-1170.	4.5	135
6	Simulation of flow between concentric rotating spheres. Part 1. Steady states. Journal of Fluid Mechanics, 1987, 185, 1-30.	3.4	110
7	Wave speeds in wavy Taylor-vortex flow. Journal of Fluid Mechanics, 1984, 141, 365-390.	3.4	104
8	ZOMBIE VORTEX INSTABILITY. I. A PURELY HYDRODYNAMIC INSTABILITY TO RESURRECT THE DEAD ZONES OF PROTOPLANETARY DISKS. Astrophysical Journal, 2015, 808, 87.	4.5	99
9	Vortex dynamics in a shearing zonal flow. Journal of Fluid Mechanics, 1990, 215, 393.	3.4	87
10	Simulation of flow between concentric rotating spheres. Part 2. Transitions. Journal of Fluid Mechanics, 1987, 185, 31-65.	3.4	78
11	Changes in Jupiterâ€™s Zonal Wind Profile preceding and during the Juno mission. Icarus, 2017, 296, 163-178.	2.5	70
12	Neptuneâ€™s global circulation deduced from multi-wavelength observations. Icarus, 2014, 237, 211-238.	2.5	64
13	Jupiterâ€™s shrinking Great Red Spot and steady Oval BA: Velocity measurements with the â€˜Advection Corrected Correlation Image Velocimetryâ€™ automated cloud-tracking method. Icarus, 2009, 203, 164-188.	2.5	63
14	On Green's functions for small disturbances of plane Couette flow. Journal of Fluid Mechanics, 1977, 79, 525-534.	3.4	59
15	Three-Dimensional Vortices Generated by Self-Replication in Stably Stratified Rotating Shear Flows. Physical Review Letters, 2013, 111, 084501.	7.8	57
16	Persistent rings in and around Jupiterâ€™s anticyclones â€“ Observations and theory. Icarus, 2010, 210, 742-762.	2.5	52
17	Effects of truncation in modal representations of thermal convection. Journal of Fluid Mechanics, 1981, 103, 241.	3.4	51
18	Jupiterâ€™s Great Red Spot and zonal winds as a selfâ€consistent, oneâ€layer, quasigeostrophic flow. Chaos, 1994, 4, 269-286.	2.5	45

#	Article	IF	Citations
19	Nonlinear standing waves in Couette-Taylor flow. Physical Review A, 1989, 39, 3734-3737.	2.5	43
20	Strength through defects: A novel Bayesian approach for the optimization of architected materials. Science Advances, 2021, 7, eabk2218.	10.3	41
21	Prediction of a global climate change on Jupiter. Nature, 2004, 428, 828-831.	27.8	40
22	The dynamics of jovian white ovals from formation to merger. Icarus, 2003, 162, 74-93.	2.5	39
23	Vertical structure of Jupiterâ€™s Oval BA before and after it reddened: What changed?. Icarus, 2011, 215, 211-225.	2.5	39
24	The universal aspect ratio of vortices in rotating stratified flows: theory and simulation. Journal of Fluid Mechanics, 2012, 706, 46-57.	3.4	37
25	Changes in Jupiterâ€™s zonal velocity between 1979 and 2008â˜†. Icarus, 2011, 211, 1215-1232.	2.5	36
26	The universal aspect ratio of vortices in rotating stratified flows: experiments and observations. Journal of Fluid Mechanics, 2012, 706, 34-45.	3.4	35
27	ZOMBIE VORTEX INSTABILITY. II. THRESHOLDS TO TRIGGER INSTABILITY AND THE PROPERTIES OF ZOMBIE TURBULENCE IN THE DEAD ZONES OF PROTOPLANETARY DISKS. Astrophysical Journal, 2016, 833, 148.	4.5	30
28	Changes in Jupiterâ€™s Great Red Spot (1979â€“2006) and Oval BA (2000â€“2006). Icarus, 2010, 210, 182-201.	2.5	27
29	Vertical wind shear in Neptuneâ€™s upper atmosphere explained with a modified thermal wind equation. Icarus, 2018, 311, 317-339.	2.5	27
30	Neptuneâ€™s zonal winds from near-IR Keck adaptive optics imaging in August 2001. Astrophysics and Space Science, 2012, 337, 65-78.	1.4	26
31	A 3D spectral anelastic hydrodynamic code for shearing, stratified flows. Journal of Computational Physics, 2006, 219, 21-46.	3.8	23
32	Jupiter's zonal winds: are they bands of homogenized potential vorticity organized as a monotonic staircase?. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2011, 369, 771-795.	3.4	22
33	On the Interaction of Jupiterâ€™s Great Red Spot and Zonal Jet Streams. Journals of the Atmospheric Sciences, 2007, 64, 4432-4444.	1.7	21
34	Zombie Vortex Instability. III. Persistence with Nonuniform Stratification and Radiative Damping. Astrophysical Journal, 2018, 869, 127.	4.5	21
35	Selection Rules for the Nonlinear Interaction of Internal Gravity Waves. Physical Review Letters, 2009, 102, 124502.	7.8	20
36	DRAMATIC CHANGE IN JUPITER'S GREAT RED SPOT FROM SPACECRAFT OBSERVATIONS. Astrophysical Journal Letters, 2014, 797, L31.	8.3	20

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37	Stability of three-dimensional Gaussian vortices in an unbounded, rotating, vertically stratified, Boussinesq flow: linear analysis. Journal of Fluid Mechanics, 2017, 824, 97-134.	3.4	16
38	Vortex Street Dynamics: The Selection Mechanism for the Areas and Locations of Jupiterâ€™s Vortices. Journals of the Atmospheric Sciences, 2007, 64, 1318-1333.	1.7	14
39	Finding the optimal shape of the leading-and-trailing car of a high-speed train using design-by-morphing. Computational Mechanics, 2018, 62, 23-45.	4.0	14
40	An equatorial thermal wind equation: Applications to Jupiter. Icarus, 2019, 324, 198-223.	2.5	12
41	Evolution of the Horizontal Winds in Jupiter's Great Red Spot From One Jovian Year of HST/WFC3 Maps. Geophysical Research Letters, 2021, 48, e2021GL093982.	4.0	10
42	Stablest Shapes for an Axisymmetric Body of Gravitating, Incompressible Fluid. Astrophysical Journal, 1977, 214, 584.	4.5	7
43	Breaking of Rotational Symmetry in Cylindrically Bounded 2D Electron Plasmas and 2D Fluids. Physical Review Letters, 2004, 93, 215002.	7.8	6
44	Description and Philosophy of Spectral Methods. , 1986, , 359-386.		5
45	Planet Embryos in Vortex Wombs. AIP Conference Proceedings, 2004, , .	0.4	0