

# Jean-Marc chomaz

## List of Publications by Year in descending order

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142  
papers

6,582  
citations

53660

45  
h-index

64668

79  
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145  
all docs

145  
docs citations

145  
times ranked

2691  
citing authors

#	ARTICLE	IF	CITATIONS
1	GLOBAL INSTABILITIES IN SPATIALLY DEVELOPING FLOWS: Non-Normality and Nonlinearity. Annual Review of Fluid Mechanics, 2005, 37, 357-392.	10.8	578
2	Experimental study of vortex breakdown in swirling jets. Journal of Fluid Mechanics, 1998, 376, 183-219.	1.4	366
3	Scaling analysis and simulation of strongly stratified turbulent flows. Journal of Fluid Mechanics, 2007, 585, 343-368.	1.4	302
4	Bifurcations to Local and Global Modes in Spatially Developing Flows. Physical Review Letters, 1988, 60, 25-28.	2.9	237
5	Self-similarity of strongly stratified inviscid flows. Physics of Fluids, 2001, 13, 1645-1651.	1.6	236
6	On the hydrodynamics of soap films. Physica D: Nonlinear Phenomena, 1989, 37, 384-405.	1.3	211
7	Global linear stability analysis of weakly non-parallel shear flows. Journal of Fluid Mechanics, 1993, 251, 1-20.	1.4	201
8	A Frequency Selection Criterion in Spatially Developing Flows. Studies in Applied Mathematics, 1991, 84, 119-144.	1.1	169
9	The structure of the near wake of a sphere moving horizontally in a stratified fluid. Journal of Fluid Mechanics, 1993, 254, 1-21.	1.4	155
10	Absolute/convective instabilities in the Batchelor vortex: a numerical study of the linear impulse response. Journal of Fluid Mechanics, 1998, 355, 229-254.	1.4	146
11	Experimental evidence for a new instability of a vertical columnar vortex pair in a strongly stratified fluid. Journal of Fluid Mechanics, 2000, 418, 167-188.	1.4	141
12	Spiral vortex breakdown as a global mode. Journal of Fluid Mechanics, 2006, 549, 71.	1.4	137
13	Mode selection in swirling jet experiments: a linear stability analysis. Journal of Fluid Mechanics, 2003, 494, 223-253.	1.4	133
14	The effect of swirl on jets and wakes: Linear instability of the Rankine vortex with axial flow. Physics of Fluids, 1998, 10, 1120-1134.	1.6	128
15	Global mode interaction and pattern selection in the wake of a disk: a weakly nonlinear expansion. Journal of Fluid Mechanics, 2009, 633, 159-189.	1.4	100
16	Evolution of the wall shear stresses during the progressive enlargement of symmetric abdominal aortic aneurysms. Journal of Fluid Mechanics, 2006, 560, 19.	1.4	95
17	Instability mechanisms in swirling flows. Physics of Fluids, 2003, 15, 2622-2639.	1.6	88
18	Global Measures of Local Convective Instabilities. Physical Review Letters, 1997, 78, 4387-4390.	2.9	84

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19	Amplifier and resonator dynamics of a low-Reynolds-number recirculation bubble in a global framework. <i>Journal of Fluid Mechanics</i> , 2008, 605, 429-443.	1.4	82
20	Modeling the transport of drugs eluted from stents: physical phenomena driving drug distribution in the arterial wall. <i>Biomechanics and Modeling in Mechanobiology</i> , 2014, 13, 327-347.	1.4	82
21	Absolute and convective instabilities in nonlinear systems. <i>Physical Review Letters</i> , 1992, 69, 1931-1934.	2.9	79
22	Internal waves produced by the turbulent wake of a sphere moving horizontally in a stratified fluid. <i>Journal of Fluid Mechanics</i> , 1993, 254, 23-40.	1.4	79
23	Direct numerical simulations of round jets: Vortex induction and side jets. <i>Physics of Fluids</i> , 1994, 6, 1768-1774.	1.6	78
24	A weakly nonlinear mechanism for mode selection in swirling jets. <i>Journal of Fluid Mechanics</i> , 2012, 699, 216-262.	1.4	78
25	Absolute and convective instabilities, front velocities and global modes in nonlinear systems. <i>Physica D: Nonlinear Phenomena</i> , 1997, 108, 236-276.	1.3	77
26	Direct and adjoint global modes of a recirculation bubble: lift-up and convective non-normalities. <i>Journal of Fluid Mechanics</i> , 2009, 622, 1-21.	1.4	74
27	The dynamics of a viscous soap film with soluble surfactant. <i>Journal of Fluid Mechanics</i> , 2001, 442, 387-409.	1.4	73
28	Theoretical analysis of the zigzag instability of a vertical columnar vortex pair in a strongly stratified fluid. <i>Journal of Fluid Mechanics</i> , 2000, 419, 29-63.	1.4	72
29	On the convectively unstable nature of optimal streaks in boundary layers. <i>Journal of Fluid Mechanics</i> , 2003, 485, 221-242.	1.4	65
30	Propagating Holmboe waves at the interface between two immiscible fluids. <i>Journal of Fluid Mechanics</i> , 1994, 266, 277-302.	1.4	62
31	Internal waves generated by a moving sphere and its wake in a stratified fluid. <i>Experiments in Fluids</i> , 1991, 11, 255-261.	1.1	61
32	Experimental and numerical investigation of a forced circular shear layer. <i>Journal of Fluid Mechanics</i> , 1988, 187, 115-140.	1.4	60
33	Steep nonlinear global modes in spatially developing media. <i>Physics of Fluids</i> , 1998, 10, 2433-2435.	1.6	60
34	Bifurcation to fully nonlinear synchronized structures in slowly varying media. <i>Physica D: Nonlinear Phenomena</i> , 2001, 148, 49-96.	1.3	56
35	Experimental study of a free and forced swirling jet. <i>Physics of Fluids</i> , 2004, 16, 2907-2917.	1.6	56
36	Nonlinear convective/absolute instabilities in parallel two-dimensional wakes. <i>Physics of Fluids</i> , 1998, 10, 2724-2736.	1.6	55

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37	Breaking of rotational symmetry in a swirling jet experiment. <i>Physics of Fluids</i> , 2003, 15, 511-523.	1.6	55
38	Fully nonlinear global modes in slowly varying flows. <i>Physics of Fluids</i> , 1999, 11, 3688-3703.	1.6	54
39	An asymptotic expansion for the vortex-induced vibrations of a circular cylinder. <i>Journal of Fluid Mechanics</i> , 2011, 671, 137-167.	1.4	54
40	Optimization of Drug Delivery by Drug-Eluting Stents. <i>PLoS ONE</i> , 2015, 10, e0130182.	1.1	53
41	Three-dimensional stability of a vertical columnar vortex pair in a stratified fluid. <i>Journal of Fluid Mechanics</i> , 2000, 419, 65-91.	1.4	50
42	Against the wind. <i>Physics of Fluids</i> , 1999, 11, 2977-2983.	1.6	48
43	Three-dimensional stability of a vortex pair. <i>Physics of Fluids</i> , 1999, 11, 2069-2077.	1.6	48
44	Pattern Selection in the Presence of a Cross Flow. <i>Physical Review Letters</i> , 1997, 79, 2666-2669.	2.9	47
45	The role of boundary conditions in a simple model of incipient vortex breakdown. <i>Physics of Fluids</i> , 2004, 16, 274-286.	1.6	47
46	Soap films as two-dimensional classical fluids. <i>Physical Review A</i> , 1990, 41, 2243-2245.	1.0	45
47	Vertical diffusion of the far wake of a sphere moving in a stratified fluid. <i>Physics of Fluids A, Fluid Dynamics</i> , 1993, 5, 2799-2806.	1.6	45
48	Transient perturbation growth in time-dependent mixing layers. <i>Journal of Fluid Mechanics</i> , 2013, 717, 90-133.	1.4	44
49	Vertical length scale selection for pancake vortices in strongly stratified viscous fluids. <i>Journal of Fluid Mechanics</i> , 2004, 504, 229-238.	1.4	43
50	Nonlinear evolution of the zigzag instability in stratified fluids: a shortcut on the route to dissipation. <i>Journal of Fluid Mechanics</i> , 2008, 599, 229-239.	1.4	43
51	Unsteadiness in the wake of disks and spheres: Instability, receptivity and control using direct and adjoint global stability analyses. <i>Journal of Fluids and Structures</i> , 2009, 25, 601-616.	1.5	43
52	Effect of compressibility on the global stability of axisymmetric wake flows. <i>Journal of Fluid Mechanics</i> , 2010, 660, 499-526.	1.4	43
53	Open-loop control of compressible afterbody flows using adjoint methods. <i>Physics of Fluids</i> , 2010, 22, .	1.6	41
54	Absolute and Convective Secondary Instabilities in Spatially Periodic Shear Flows. <i>Physical Review Letters</i> , 1997, 78, 658-661.	2.9	38

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55	Global Instability in Fully Nonlinear Systems. <i>Physical Review Letters</i> , 1996, 77, 4015-4018.	2.9	35
56	Three-dimensional instability and vorticity patterns in the wake of a flat plate. <i>Journal of Fluid Mechanics</i> , 2003, 479, 155-189.	1.4	33
57	Elliptic and zigzag instabilities on co-rotating vertical vortices in a stratified fluid. <i>Journal of Fluid Mechanics</i> , 2006, 553, 253.	1.4	33
58	Primary and secondary nonlinear global instability. <i>Physica D: Nonlinear Phenomena</i> , 1999, 132, 428-456.	1.3	32
59	Secondary instability mechanisms in the wake of a flat plate. <i>European Journal of Mechanics, B/Fluids</i> , 2004, 23, 157-165.	1.2	31
60	Spectral analysis of the transition to turbulence from a dipole in stratified fluid. <i>Journal of Fluid Mechanics</i> , 2012, 713, 86-108.	1.4	31
61	Three-dimensional stability of a horizontally sheared flow in a stably stratified fluid. <i>Journal of Fluid Mechanics</i> , 2007, 570, 297-305.	1.4	29
62	Global mode analysis of axisymmetric bluff-body wakes: Stabilization by base bleed. <i>Physics of Fluids</i> , 2009, 21, .	1.6	27
63	Three-dimensional instability of isolated vortices. <i>Physics of Fluids</i> , 2003, 15, 2113-2126.	1.6	26
64	The elephant mode between two rotating disks. <i>Journal of Fluid Mechanics</i> , 2008, 598, 451-464.	1.4	25
65	Fully nonlinear dynamics of parallel wakes. <i>Journal of Fluid Mechanics</i> , 2003, 495, 57-75.	1.4	24
66	Impact of a Mean Current on the Internal Tide Energy Dissipation at the Critical Latitude. <i>Journal of Physical Oceanography</i> , 2017, 47, 1457-1472.	0.7	24
67	Spatial Holmboe instability. <i>Physics of Fluids</i> , 2002, 14, 2585-2597.	1.6	23
68	Closed-loop control of vortex breakdown: a model study. <i>Journal of Fluid Mechanics</i> , 2004, 511, 67-93.	1.4	22
69	Global modes in a confined impinging jet: application to heat transfer and control. <i>Theoretical and Computational Fluid Dynamics</i> , 2011, 25, 179-193.	0.9	22
70	Extracting energy from a flow: An asymptotic approach using vortex-induced vibrations and feedback control. <i>Journal of Fluids and Structures</i> , 2011, 27, 861-874.	1.5	21
71	Transient growth in Rayleigh-Bénard-Poiseuille/Couette convection. <i>Physics of Fluids</i> , 2012, 24, .	1.6	21
72	Three-dimensional instabilities and transient growth of a counter-rotating vortex pair. <i>Physics of Fluids</i> , 2009, 21, .	1.6	20

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73	Zigzag instability of vortex pairs in stratified and rotating fluids. Part 2. Analytical and numerical analyses.. Journal of Fluid Mechanics, 2010, 660, 396-429.	1.4	20
74	Absolute instability in axisymmetric wakes: compressible and density variation effects. Journal of Fluid Mechanics, 2008, 600, 373-401.	1.4	19
75	Transition to turbulence through steep global-modes cascade in an open rotating cavity. Journal of Fluid Mechanics, 2011, 688, 493-506.	1.4	19
76	Stratified turbulence forced with columnar dipoles: numerical study. Journal of Fluid Mechanics, 2015, 769, 403-443.	1.4	19
77	Froude number dependence of the flow separation line on a sphere towed in a stratified fluid. Physics of Fluids A, Fluid Dynamics, 1992, 4, 254-258.	1.6	18
78	Absolute and convective instabilities of fluidized beds. Physics of Fluids, 1994, 6, 3936-3944.	1.6	17
79	The effect of planetary rotation on the zigzag instability of co-rotating vortices in a stratified fluid. Journal of Fluid Mechanics, 2006, 553, 273.	1.4	16
80	A relaxation method for large eigenvalue problems, with an application to flow stability analysis. Journal of Computational Physics, 2012, 231, 3912-3927.	1.9	16
81	The structure of the turbulent wake and the random internal wave field generated by a moving sphere in a stratified fluid. Dynamics of Atmospheres and Oceans, 1996, 23, 299-308.	0.7	15
82	Experimental investigations on the nature of the first wavy instability in liquid-fluidized beds. Physics of Fluids, 1996, 8, 1987-1989.	1.6	15
83	Elephant modes and low frequency unsteadiness in a high Reynolds number, transonic afterbody wake. Physics of Fluids, 2009, 21, .	1.6	15
84	On the convective-absolute nature of river bedform instabilities. Physics of Fluids, 2014, 26, .	1.6	15
85	Experimental study of stratified turbulence forced with columnar dipoles. Physics of Fluids, 2014, 26, 046603.	1.6	15
86	Absolute and convective nature of the Eckhaus and zigzag instability with throughflow. Physics of Fluids, 1999, 11, 3369-3373.	1.6	14
87	Maximum Spatial Growth of Quarter Vortices. Flow, Turbulence and Combustion, 2000, 65, 369-392.	1.4	14
88	Propagating Pattern Selection and Causality Reconsidered. Physical Review Letters, 2000, 84, 1910-1913.	2.9	14
89	Transition to turbulence in open flows: what linear and fully nonlinear local and global theories tell us. European Journal of Mechanics, B/Fluids, 2004, 23, 385-399.	1.2	14
90	Theoretical analysis of the zigzag instability of a vertical co-rotating vortex pair in a strongly stratified fluid. Journal of Fluid Mechanics, 2007, 584, 103-123.	1.4	14

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91	Three-dimensional stability of periodic arrays of counter-rotating vortices. <i>Physics of Fluids</i> , 2002, 14, 732-743.	1.6	13
92	Stratified flow over three-dimensional topography. <i>Dynamics of Atmospheres and Oceans</i> , 1996, 23, 321-334.	0.7	12
93	Pushed global modes in weakly inhomogeneous subcritical flows. <i>Physica D: Nonlinear Phenomena</i> , 2001, 158, 129-150.	1.3	12
94	Three-dimensional stability of vortex arrays in a stratified and rotating fluid. <i>Journal of Fluid Mechanics</i> , 2011, 678, 482-510.	1.4	12
95	Internal Tide Dissipation at Topography: Triadic Resonant Instability Equatorward and Evanescent Waves Poleward of the Critical Latitude. <i>Journal of Geophysical Research: Oceans</i> , 2018, 123, 6136-6155.	1.0	12
96	Effect of the Schmidt number on the diffusion of axisymmetric pancake vortices in a stratified fluid. <i>Physics of Fluids</i> , 2003, 15, 1058-1064.	1.6	11
97	The bifurcation structure of viscous steady axisymmetric vortex breakdown with open lateral boundaries. <i>Physics of Fluids</i> , 2009, 21, 074107.	1.6	11
98	Transient growth of secondary instabilities in parallel wakes: Anti lift-up mechanism and hyperbolic instability. <i>Physics of Fluids</i> , 2011, 23, .	1.6	10
99	Transition to turbulence in the rotating disk boundary layer of a rotor-stator cavity. <i>Journal of Fluid Mechanics</i> , 2018, 848, 631-647.	1.4	10
100	Internal waves generated by the wake of Gaussian hills. <i>Physics of Fluids</i> , 2001, 13, 3223-3233.	1.6	9
101	Stability of parallel wake flows in quasigeostrophic and frontal regimes. <i>Physics of Fluids</i> , 2006, 18, 126602.	1.6	9
102	Multiple Timescale and Sensitivity Analysis for the Passive Control of the Cylinder Flow. , 2008, , .		9
103	Three-dimensional instabilities and optimal perturbations of a counter-rotating vortex pair in stratified flows. <i>Physics of Fluids</i> , 2015, 27, 106603.	1.6	8
104	Internal gravity waves in a dipolar wind: a wave-vortex interaction experiment in a stratified fluid. <i>Journal of Fluid Mechanics</i> , 2006, 548, 281.	1.4	7
105	Effects of an axial flow on the centrifugal, elliptic and hyperbolic instabilities in Stuart vortices. <i>Journal of Fluid Mechanics</i> , 2014, 758, 565-585.	1.4	7
106	A flow on the verge of turbulent breakdown. <i>Journal of Fluid Mechanics</i> , 2018, 854, 1-4.	1.4	7
107	Bending and twisting instabilities of columnar elliptical vortices in a rotating strongly stratified fluid. <i>Journal of Fluid Mechanics</i> , 2006, 561, 73.	1.4	6
108	Twisted absolute instability in lifted flames. <i>Physics of Fluids</i> , 2009, 21, 015110.	1.6	5

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109	Propagative Sine-Gordon solitons in the spatially forced Kelvin-Helmholtz instability. <i>Physica D: Nonlinear Phenomena</i> , 1995, 80, 333-355.	1.3	4
110	Stability of Quasi-Two-Dimensional Vortices. <i>Lecture Notes in Physics</i> , 2010, , 35-59.	0.3	4
111	Photometric Compensation to Dynamic Surfaces in a Projector-Camera System. <i>Lecture Notes in Computer Science</i> , 2015, , 283-296.	1.0	4
112	Instabilities and Vortex Breakdown in Swirling Jets and Wakes. <i>Fluid Mechanics and Its Applications</i> , 1998, , 267-286.	0.1	4
113	Wave-number selection and phase solitons in spatially forced temporal mixing layers. <i>Physical Review Letters</i> , 1992, 68, 2596-2599.	2.9	3
114	Extended Squire's transformation and its consequences for transient growth in a confined shear flow. <i>Journal of Fluid Mechanics</i> , 2014, 744, 430-456.	1.4	3
115	Pairing of two vertical columnar vortices in a stratified fluid. <i>European Journal of Mechanics, B/Fluids</i> , 2015, 49, 413-425.	1.2	3
116	Gardien du Temple: An Interactive Installation Involving Poetry, Performance and Spatial Augmented Reality. <i>Leonardo</i> , 2020, 53, 31-37.	0.2	3
117	Transient growth, edge states, and repeller in rotating solid and fluid. <i>Physical Review E</i> , 2021, 103, 033102.	0.8	3
118	On the longitudinal optimal perturbations to inviscid plane shear flow: formal solution and asymptotic approximation. <i>Journal of Fluid Mechanics</i> , 2013, 737, 387-411.	1.4	2
119	NUMERICAL STUDIES OF STREAK INSTABILITY IN BOUNDARY LAYERS. <i>Fluid Mechanics and Its Applications</i> , 2006, , 121-126.	0.1	2
120	Non linear stability of slender accretion disks by bifurcation method. <i>Geophysical and Astrophysical Fluid Dynamics</i> , 1993, 70, 235-251.	0.4	1
121	Secondary Global Modes of Variable-Density Jets. , 2008, , .		1
122	Optimizing energy production from vortex-induced vibrations using control strategy deduced from an exact nonlinear asymptotic model. , 2011, , .		1
123	One-frame delay for dynamic photometric compensation in a projector-camera system. , 2015, , .		1
124	It Is Time to Think the Anthropocene! A Manifesto. <i>Leonardo</i> , 2018, 51, 217-219.	0.2	1
125	Secondary instability in variable-density round jets. , 2007, , 32-34.		1
126	Experimental study of forced stratified turbulence. <i>Springer Proceedings in Physics</i> , 2009, , 397-400.	0.1	1



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127	Open-loop control of compressible afterbody flows using adjoint methods. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2010, , 283-288.	0.1	1
128	Zigzag instability of the Kármán vortex street in stratified and rotating fluids. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2010, , 197-206.	0.1	1
129	Inviscid Transient Growth on Horizontal Shear Layers with Strong Vertical Stratification. Springer Proceedings in Physics, 2016, , 199-206.	0.1	1
130	Three-Dimensionnal Instabilities and Transient Growth of Trailing Vortices in Homogeneous and Stratified Flows. , 2008, , .		0
131	Science and Art of Sculpturing Fluids. Leonardo, 2014, 47, 66-67.	0.2	0
132	Towards a theory for vortex filaments in stratified-rotating fluids. Fluid Dynamics Research, 2014, 46, 061424.	0.6	0
133	Bursting of a Swirling Jet Stemming from a Localized Perturbation. Lecture Notes in Physics, 2000, , 140-146.	0.3	0
134	HELICAL MODES IN SWIRLING JETS. Fluid Mechanics and Its Applications, 2006, , 265-271.	0.1	0
135	Three-Dimensional Stability of Vortices in a Stratified Fluid. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2008, , 367-372.	0.1	0
136	Instabilities and transient growth of trailing vortices in stratified fluid. Springer Proceedings in Physics, 2009, , 273-276.	0.1	0
137	Transient evolution and high stratification scaling in horizontal mixing layers. Springer Proceedings in Physics, 2009, , 183-186.	0.1	0
138	The Flow. SSRN Electronic Journal, 0, , .	0.4	0
139	Dynamics of Arterial Wall Transport for Small Hydrophobic Drugs. , 2012, , .		0
140	Inventing Narratives of the Anthropocene: Microclimate Machines and Arts & Sciences Installations. , 2019, , .		0
141	Unresolved Sun / Soleil Irradiation. , 2019, , .		0
142	Nonlinear evolution of the zigzag instability in a stratified fluid. , 2007, , 730-730.		0