

Paolo Luchini

List of Publications by Year in descending order

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121
papers

3,001
citations

257101

24
h-index

168136

53
g-index

124
all docs

124
docs citations

124
times ranked

1404
citing authors

#	ARTICLE	IF	CITATIONS
1	Reynolds-number-independent instability of the boundary layer over a flat surface: optimal perturbations. <i>Journal of Fluid Mechanics</i> , 2000, 404, 289-309.	1.4	445
2	Structural sensitivity of the first instability of the cylinder wake. <i>Journal of Fluid Mechanics</i> , 2007, 581, 167-197.	1.4	440
3	Adjoint Equations in Stability Analysis. <i>Annual Review of Fluid Mechanics</i> , 2014, 46, 493-517.	10.8	244
4	Görtler vortices: a backward-in-time approach to the receptivity problem. <i>Journal of Fluid Mechanics</i> , 1998, 363, 1-23.	1.4	116
5	Resistance of a grooved surface to parallel flow and cross-flow. <i>Journal of Fluid Mechanics Digital Archive</i> , 1991, 228, 87.	0.6	100
6	The effect of base flow variation on flow stability. <i>Journal of Fluid Mechanics</i> , 2003, 476, 293-302.	1.4	100
7	Reynolds-number-independent instability of the boundary layer over a flat surface. <i>Journal of Fluid Mechanics</i> , 1996, 327, 101-115.	1.4	99
8	Streamwise oscillation of spanwise velocity at the wall of a channel for turbulent drag reduction. <i>Physics of Fluids</i> , 2009, 21, .	1.6	84
9	Integral space-time scales in turbulent wall flows. <i>Physics of Fluids</i> , 2003, 15, 2219-2227.	1.6	57
10	Stability analysis of a shear flow with strongly stratified viscosity. <i>Journal of Fluid Mechanics</i> , 2003, 496, 295-312.	1.4	55
11	A low-cost parallel implementation of direct numerical simulation of wall turbulence. <i>Journal of Computational Physics</i> , 2006, 211, 551-571.	1.9	55
12	Algebraic growth in boundary layers: optimal control by blowing and suction at the wall. <i>European Journal of Mechanics, B/Fluids</i> , 2000, 19, 469-490.	1.2	52
13	Universality of the Turbulent Velocity Profile. <i>Physical Review Letters</i> , 2017, 118, 224501.	2.9	49
14	Structural sensitivity of the secondary instability in the wake of a circular cylinder. <i>Journal of Fluid Mechanics</i> , 2010, 651, 319-337.	1.4	46
15	Linearized no-slip boundary conditions at a rough surface. <i>Journal of Fluid Mechanics</i> , 2013, 737, 349-367.	1.4	40
16	Algebraic growth in a Blasius boundary layer: Nonlinear optimal disturbances. <i>European Journal of Mechanics, B/Fluids</i> , 2006, 25, 1-17.	1.2	38
17	Görtler vortices: Are they amenable to local eigenvalue analysis?. <i>European Journal of Mechanics, B/Fluids</i> , 1999, 18, 47-65.	1.2	37
18	Algebraic growth in a Blasius boundary layer: optimal and robust control by mean suction in the nonlinear regime. <i>Journal of Fluid Mechanics</i> , 2004, 513, 135-160.	1.4	37

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19	Global stability and sensitivity analysis of boundary-layer flows past a hemispherical roughness element. <i>Physics of Fluids</i> , 2015, 27, .	1.6	35
20	Efficient stabilization and acceleration of numerical simulation of fluid flows by residual recombination. <i>Journal of Computational Physics</i> , 2017, 344, 234-246.	1.9	35
21	Linear three-dimensional global and asymptotic stability analysis of incompressible open cavity flow. <i>Journal of Fluid Mechanics</i> , 2015, 768, 113-140.	1.4	34
22	Adjoint analysis of the flow over a forward-facing step. <i>Theoretical and Computational Fluid Dynamics</i> , 2009, 23, 37-54.	0.9	28
23	Direct numerical simulation of the turbulent flow in a pipe with annular cross section. <i>European Journal of Mechanics, B/Fluids</i> , 2002, 21, 413-427.	1.2	27
24	Structure and interpolation of the turbulent velocity profile in parallel flow. <i>European Journal of Mechanics, B/Fluids</i> , 2018, 71, 15-34.	1.2	26
25	The phase lead of shear stress in shallow-water flow over a perturbed bottom. <i>Journal of Fluid Mechanics</i> , 2010, 665, 516-539.	1.4	25
26	The start-up vortex issuing from a semi-infinite flat plate. <i>Journal of Fluid Mechanics</i> , 2002, 455, 175-193.	1.4	24
27	Leading-edge receptivity by adjoint methods. <i>Journal of Fluid Mechanics</i> , 2006, 547, 21.	1.4	24
28	Consistent section-averaged equations of quasi-one-dimensional laminar flow. <i>Journal of Fluid Mechanics</i> , 2010, 656, 337-341.	1.4	23
29	Linear stability and weakly nonlinear analysis of the flow past rotating spheres. <i>Journal of Fluid Mechanics</i> , 2016, 807, 62-86.	1.4	23
30	A fast algorithm for the estimation of statistical error in DNS (or experimental) time averages. <i>Journal of Computational Physics</i> , 2017, 347, 328-340.	1.9	23
31	Madey's gain-spread theorem for the free-electron laser and the theory of stochastic processes. <i>Journal of Applied Physics</i> , 1982, 53, 5453-5458.	1.1	22
32	Feedback control of vortex shedding using a full-order optimal compensator. <i>Journal of Fluids and Structures</i> , 2015, 53, 15-25.	1.5	22
33	Turbulent Superfluid Profiles in a Counterflow Channel. <i>Journal of Low Temperature Physics</i> , 2011, 162, 354-360.	0.6	21
34	Structural Sensitivity of the Finite-Amplitude Vortex Shedding Behind a Circular Cylinder. <i>IUTAM Symposium on Cellular, Molecular and Tissue Mechanics</i> , 2009, , 151-160.	0.1	21
35	Linear stability and receptivity analyses of the Stokes layer produced by an impulsively started plate. <i>Physics of Fluids</i> , 2001, 13, 1668-1678.	1.6	20
36	Gain and mode-coupling in a three-dimensional free-electron laser: A generalization of Madey's theorem. <i>IEEE Journal of Quantum Electronics</i> , 1985, 21, 952-965.	1.0	19

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37	Stability and Sensitivity Analysis of the Secondary Instability in the Sphere Wake. <i>AIAA Journal</i> , 2017, 55, 3661-3668.	1.5	18
38	Optical guiding in an FEL. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 1986, 250, 413-417.	0.7	17
39	Effects of riblets upon flow stability. <i>Flow, Turbulence and Combustion</i> , 1995, 54, 313-321.	0.2	17
40	Turbulent drag reduction over curved walls. <i>Journal of Fluid Mechanics</i> , 2020, 896, .	1.4	17
41	The linear response of turbulent flow to a volume force: comparison between eddy-viscosity model and DNS. <i>Journal of Fluid Mechanics</i> , 2016, 790, 104-127.	1.4	16
42	Viscous eddies over a grooved surface computed by a Gaussian-integration Galerkin boundary-element method. <i>AIAA Journal</i> , 1992, 30, 2168-2170.	1.5	15
43	Effect of streamwise-periodic wall transpiration on turbulent friction drag. <i>Journal of Fluid Mechanics</i> , 2007, 576, 425-444.	1.4	15
44	Acoustic impedance and hydrodynamic instability of the flow through a circular aperture in a thick plate. <i>Journal of Fluid Mechanics</i> , 2020, 885, .	1.4	15
45	Immersed-boundary simulations of turbulent flow past a sinusoidally undulated river bottom. <i>European Journal of Mechanics, B/Fluids</i> , 2016, 55, 340-347.	1.2	14
46	The acoustic impedance of a laminar viscous jet through a thin circular aperture. <i>Journal of Fluid Mechanics</i> , 2019, 864, 5-44.	1.4	14
47	An adaptive-mesh finite-difference solution method for the Navier-Stokes equations. <i>Journal of Computational Physics</i> , 1987, 68, 283-306.	1.9	13
48	Towards a quantitative comparison between global and local stability analysis. <i>Journal of Fluid Mechanics</i> , 2017, 819, 147-164.	1.4	13
49	The flow past a freely rotating sphere. <i>Theoretical and Computational Fluid Dynamics</i> , 2017, 31, 475-482.	0.9	13
50	Flow around simply and multiply connected bodies - A new iterative scheme for conformal mapping. <i>AIAA Journal</i> , 1989, 27, 345-351.	1.5	12
51	Boundary-layer receptivity to external disturbances using multiple scales. <i>Meccanica</i> , 2014, 49, 441-467.	1.2	12
52	Analytical and numerical solutions for natural convection in a corner. <i>AIAA Journal</i> , 1986, 24, 841-848.	1.5	11
53	The phase-locked mean impulse response of a turbulent channel flow. <i>Physics of Fluids</i> , 2006, 18, 121702.	1.6	11
54	A Thermodynamic Lower Bound on Transition-Triggering Disturbances. <i>IUTAM Symposium on Cellular, Molecular and Tissue Mechanics</i> , 2010, , 11-18.	0.1	10

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55	Methods for solution of large optimal control problems that bypass open-loop model reduction. <i>Meccanica</i> , 2016, 51, 2997-3014.	1.2	10
56	Receptivity to Thermal Noise of the Boundary Layer over a Swept Wing. <i>AIAA Journal</i> , 2017, 55, 121-130.	1.5	10
57	Higher-order difference approximations of the Navier-Stokes equations. <i>International Journal for Numerical Methods in Fluids</i> , 1991, 12, 491-506.	0.9	9
58	Structural Sensitivity of Linear and Nonlinear Global Modes. , 2008, , .		9
59	On the theory of electron motion due to superposed em waves and its application to the free-electron laser with linear polarization. <i>Applied Physics B, Photophysics and Laser Chemistry</i> , 1982, 28, 15-20.	1.5	7
60	Unsteady Stokes Flow in a Distensible Pipe. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 1991, 71, 367-378.	0.9	7
61	Direction-Adaptive Nonreflecting Boundary Conditions. <i>Journal of Computational Physics</i> , 1996, 128, 121-133.	1.9	7
62	Acoustic streaming past a vibrating wall. <i>Physics of Fluids</i> , 2005, 17, 122106.	1.6	7
63	Stability and Sensitivity Analysis of Non-Newtonian Flow through an Axisymmetric Expansion. <i>Journal of Physics: Conference Series</i> , 2011, 318, 032015.	0.3	7
64	Two-dimensional numerical integration using a square mesh. <i>Computer Physics Communications</i> , 1984, 31, 303-310.	3.0	6
65	More on optical guiding in an FEL. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 1987, 259, 150-153.	0.7	6
66	Error sensitivity to refinement: a criterion for optimal grid adaptation. <i>Theoretical and Computational Fluid Dynamics</i> , 2017, 31, 595-605.	0.9	6
67	Effective mass of an electron in an electromagnetic field. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1982, 91, 438-440.	0.9	5
68	Boundary-layer Flows Past an Hemispherical Roughness Element: DNS, Global Stability and Sensitivity Analysis. <i>Procedia IUTAM</i> , 2015, 14, 173-181.	1.2	5
69	Multigrid pressure correction techniques for the computation of quasi-incompressible internal flows. <i>International Journal for Numerical Methods in Fluids</i> , 1994, 18, 489-507.	0.9	4
70	Is a plane liquid curtain algebraically absolutely unstable?. <i>Physics of Fluids</i> , 2004, 16, 2154-2157.	1.6	4
71	Acoustic Streaming and Lower-than-Laminar Drag in Controlled Channel Flow. <i>Mathematics in Industry</i> , 2008, , 169-177.	0.1	4
72	Skin-friction Drag Reduction via Steady Streamwise Oscillations of Spanwise Velocity. , 2007, , 659-661.		4

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73	Quasilaminar regime in the linear response of a turbulent flow to wall waviness. <i>Physical Review Fluids</i> , 2017, 2, .	1.0	4
74	Inviscid flow separation at the crest of an erodible dune. <i>Physical Review Fluids</i> , 2019, 4, .	1.0	4
75	Use of indeterminate Pad \hat{A} approximations in the analysis of diffraction at the mirror edges of an optical resonator. <i>Optics Letters</i> , 1982, 7, 259.	1.7	3
76	A deferred-correction multigrid algorithm based on a new smoother for the Navier-Stokes equations. <i>Journal of Computational Physics</i> , 1991, 92, 349-368.	1.9	3
77	Magnetization-vector analogy as a reformulation of the equations of fluid dynamics. <i>AIAA Journal</i> , 1991, 29, 474-477.	1.5	3
78	Creeping Flow in Partially Obstructed Ducts. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 1994, 74, 286-289.	0.9	3
79	Fourier analysis of numerical integration formulae. <i>Computer Physics Communications</i> , 1994, 83, 227-235.	3.0	3
80	Instability of a nearly inextensible thin layer in a shear flow. <i>European Journal of Mechanics, B/Fluids</i> , 2003, 22, 39-50.	1.2	3
81	Multiple-scale approximation of instabilities in unsteady boundary layers. <i>European Journal of Mechanics, B/Fluids</i> , 2015, 50, 1-8.	1.2	3
82	Viscous and inviscid simulations of the start-up \hat{A} vortex. <i>Journal of Fluid Mechanics</i> , 2017, 813, 53-69.	1.4	3
83	On the large difference between Benjamin \hat{A} and Hanratty \hat{A} formulations of perturbed flow over uneven terrain. <i>Journal of Fluid Mechanics</i> , 2019, 871, 534-561.	1.4	3
84	Optimal Control by Blowing and Suction at the Wall of Algebraically Growing Boundary Layer Disturbances. , 2000, , 307-312.		3
85	Wall Turbulence and Turbulent Drag Reduction. , 2022, , 349-364.		3
86	An unsteady-state analysis of the hemofiltration processes. <i>Journal of Membrane Science</i> , 1983, 14, 303-329.	4.1	2
87	Evaluation of the statistical distribution of spheroidal objects from measurements on metallographic cross sections. <i>Meccanica</i> , 1984, 19, 127-132.	1.2	2
88	Viscous sublayer analysis of riblets and wire arrays. <i>Flow, Turbulence and Combustion</i> , 1993, 50, 255-266.	0.2	2
89	Compressible flow in a hovercraft air cushion. <i>AIAA Journal</i> , 1993, 31, 528-533.	1.5	2
90	Addendum to \hat{A} immersed-boundary simulations of turbulent flow past a sinusoidally undulated river bottom \hat{A} . [Eur. J. Mech. B Fluids 55 (2016) 340 \hat{A} 347]. <i>European Journal of Mechanics, B/Fluids</i> , 2017, 62, 57-58.	1.2	2

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91	A probabilistic framework for the control of systems with discrete states and stochastic excitation. Automatica, 2018, 88, 113-116.	3.0	2
92	Studying Sound Production in the Hole-Tone Configuration Using Compressible and Incompressible Global Stability Analyses. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2021, , 251-263.	0.2	2
93	Adjoint DNS of Turbulent Channel Flow. , 2002, , .		2
94	Law of the Wall and Law of the Wake in Turbulent Parallel Flow. Springer Proceedings in Physics, 2019, , 63-68.	0.1	2
95	On the Stability of Subsonic Impinging Jets. Lecture Notes in Mechanical Engineering, 2020, , 99-116.	0.3	2
96	Instability of an equation arising in the theory of free-electron lasers. Physics Letters, Section A: General, Atomic and Solid State Physics, 1984, 103, 110-112.	0.9	1
97	Unsteady-state behaviour of enzyme membrane reactors with substrate rejection. Journal of Membrane Science, 1986, 27, 263-274.	4.1	1
98	Variational solution of the wave equation for a high gain FEL and a finite wiggling radius. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1988, 272, 311-318.	0.7	1
99	Effects of bending on free electron laser performance. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1988, 272, 334-339.	0.7	1
100	Solution of a coupled creeping-flow problem by the Wiener-Hopf method. Journal of Engineering Mathematics, 1991, 25, 23-30.	0.6	1
101	A fast conformal mapping algorithm with no FFT. Journal of Computational Physics, 1992, 101, 368-374.	1.9	1
102	Electric-discharge excited blast waves in a flat subsonic nozzle. AIAA Journal, 1993, 31, 1060-1067.	1.5	1
103	Calculation of the effective speed of sound in corrugated pipes by multiple scales. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 531-532.	0.2	1
104	The speed of sound in periodic ducts. Journal of Sound and Vibration, 2016, 361, 243-250.	2.1	1
105	The Effects of Wall Thermal Resistance on Forced Convection Around Two-Dimensional Bodies. Journal of Heat Transfer, 1990, 112, 572-578.	1.2	1
106	THE LINEAR STABILITY OF GÄ–RTLER VORTICES REVISITED. , 1996, , 1-14.		1
107	Modification of Turbulent Flow Using Distributed Transpiration. Canadian Aeronautics and Space Journal, 2005, 51, 61-69.	0.1	1
108	Viscous sublayer analysis of riblets and wire arrays. Fluid Mechanics and Its Applications, 1993, , 255-266.	0.1	1

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109	An exact solution for the motion of an ultrarelativistic electron in a tapered undulator. Applied Physics B, Photophysics and Laser Chemistry, 1985, 37, 47-54.	1.5	0
110	Three-dimensional description of free electron lasers: Preliminary results. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1985, 237, 84-92.	0.7	0
111	On the optimal profile of a tapered undulator. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1985, 237, 389-394.	0.7	0
112	Gain-induced reflection can be used for a high power X-ray laser. Physics Letters, Section A: General, Atomic and Solid State Physics, 1986, 116, 318-320.	0.9	0
113	Comments on "Effect of the radiation force on free-electron laser gain". IEEE Journal of Quantum Electronics, 1987, 23, 130-130.	1.0	0
114	Eigenfunction Expansion for Creeping Flow in a Partially Obstructed Flow. Journal of Applied Mechanics, Transactions ASME, 1991, 58, 1091-1092.	1.1	0
115	End-correction integration formulae with optimized terminal sampling points. Computer Physics Communications, 1994, 83, 236-244.	3.0	0
116	Paolo Orlandi, Fluid Flow Phenomena – A Numerical Toolkit. Meccanica, 2000, 35, 381-381.	1.2	0
117	Contradictions in the Large-Wavelength Approximation of Turbulent Flow Past a Wavy Bottom. Springer Proceedings in Physics, 2016, , 155-159.	0.1	0
118	SURPRISING BEHAVIOUR AND SINGULARITY IN THE SAINT VENANT APPROXIMATION FOR A FLUID. Istituto Lombardo - Accademia Di Scienze E Lettere - Incontri Di Studio, 0, , .	0.0	0
119	Time-Dependent Optimal Perturbations for the Algebraic Instability in the Nonlinear Regime. , 2002, , .		0
120	Turbulent drag reduction by feedback: a Wiener-filtering approach. Springer Proceedings in Physics, 2009, , 241-246.	0.1	0
121	Cylinder Wake Stabilization Using a Minimal Energy Compensator. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2016, , 335-348.	0.2	0