

Sergio Pirozzoli

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105
papers

3,597
citations

29
h-index

58
g-index

109
ext. papers

4,614
ext. citations

3.3
avg, IF

6.24
L-index

#	Paper	IF	Citations
105	Conservative Hybrid Compact-WENO Schemes for Shock-Turbulence Interaction. <i>Journal of Computational Physics</i> , 2002 , 178, 81-117	4.1	306
104	Direct numerical simulation and analysis of a spatially evolving supersonic turbulent boundary layer at M=2.25. <i>Physics of Fluids</i> , 2004 , 16, 530-545	4.4	300
103	Numerical Methods for High-Speed Flows. <i>Annual Review of Fluid Mechanics</i> , 2011 , 43, 163-194	2.2	237
102	Direct numerical simulation of impinging shock wave/turbulent boundary layer interaction at M=2.25. <i>Physics of Fluids</i> , 2006 , 18, 065113	4.4	193
101	Turbulence in supersonic boundary layers at moderate Reynolds number. <i>Journal of Fluid Mechanics</i> , 2011 , 688, 120-168	3.7	143
100	On the spectral properties of shock-capturing schemes. <i>Journal of Computational Physics</i> , 2006 , 219, 489-497	4.1	138
99	Generalized conservative approximations of split convective derivative operators. <i>Journal of Computational Physics</i> , 2010 , 229, 7180-7190	4.1	133
98	Velocity statistics in turbulent channel flow up to. <i>Journal of Fluid Mechanics</i> , 2014 , 742, 171-191	3.7	123
97	Characterization of coherent vortical structures in a supersonic turbulent boundary layer. <i>Journal of Fluid Mechanics</i> , 2008 , 613, 205-231	3.7	108
96	Direct numerical simulations of isotropic compressible turbulence: Influence of compressibility on dynamics and structures. <i>Physics of Fluids</i> , 2004 , 16, 4386-4407	4.4	105
95	Direct numerical simulation of transonic shock/boundary layer interaction under conditions of incipient separation. <i>Journal of Fluid Mechanics</i> , 2010 , 657, 361-393	3.7	101
94	Shock-Wave/Vortex Interactions: Shock and Vortex Deformations, and Sound Production. <i>Theoretical and Computational Fluid Dynamics</i> , 2000 , 13, 421-456	2.3	82
93	Inner/outer layer interactions in turbulent boundary layers: A refined measure for the large-scale amplitude modulation mechanism. <i>Physics of Fluids</i> , 2011 , 23, 061701	4.4	72
92	Direct Numerical Simulation Database for Impinging Shock Wave/Turbulent Boundary-Layer Interaction. <i>AIAA Journal</i> , 2011 , 49, 1307-1312	2.1	71
91	Passive scalars in turbulent channel flow at high Reynolds number. <i>Journal of Fluid Mechanics</i> , 2016 , 788, 614-639	3.7	69
90	Turbulence statistics in Couette flow at high Reynolds number. <i>Journal of Fluid Mechanics</i> , 2014 , 758, 327-343	3.7	68
89	Turbulence and secondary motions in square duct flow. <i>Journal of Fluid Mechanics</i> , 2018 , 840, 631-655	3.7	61

88	Reynolds and Mach number effects in compressible turbulent channel flow. <i>International Journal of Heat and Fluid Flow</i> , 2016 , 59, 33-49	2.4	61
87	Wall pressure fluctuations beneath supersonic turbulent boundary layers. <i>Physics of Fluids</i> , 2011 , 23, 085102	4.4	60
86	Probing high-Reynolds-number effects in numerical boundary layers. <i>Physics of Fluids</i> , 2013 , 25, 021704	4.4	59
85	On the estimation of wall pressure coherence using time-resolved tomographic PIV. <i>Experiments in Fluids</i> , 2013 , 54, 1	2.5	48
84	Stability and modal analysis of shock/boundary layer interactions. <i>Theoretical and Computational Fluid Dynamics</i> , 2017 , 31, 33-50	2.3	46
83	Stabilized non-dissipative approximations of Euler equations in generalized curvilinear coordinates. <i>Journal of Computational Physics</i> , 2011 , 230, 2997-3014	4.1	42
82	Poiseuille and Couette flows in the transitional and fully turbulent regime. <i>Journal of Fluid Mechanics</i> , 2015 , 770, 424-441	3.7	39
81	Compressibility effects on roughness-induced boundary layer transition. <i>International Journal of Heat and Fluid Flow</i> , 2012 , 35, 45-51	2.4	39
80	Large-scale motions and inner/outer layer interactions in turbulent Couette-Poiseuille flows. <i>Journal of Fluid Mechanics</i> , 2011 , 680, 534-563	3.7	39
79	Mixed convection in turbulent channels with unstable stratification. <i>Journal of Fluid Mechanics</i> , 2017 , 821, 482-516	3.7	36
78	The wall pressure signature of transonic shock/boundary layer interaction. <i>Journal of Fluid Mechanics</i> , 2011 , 671, 288-312	3.7	35
77	Numerically stable formulations of convective terms for turbulent compressible flows. <i>Journal of Computational Physics</i> , 2019 , 382, 86-104	4.1	31
76	Parameterization of Boundary-Layer Transition Induced by Isolated Roughness Elements. <i>AIAA Journal</i> , 2014 , 52, 2261-2269	2.1	29
75	Turbulent channel flow simulations in convecting reference frames. <i>Journal of Computational Physics</i> , 2013 , 232, 1-6	4.1	28
74	A general strategy for the optimization of Runge-Kutta schemes for wave propagation phenomena. <i>Journal of Computational Physics</i> , 2009 , 228, 4182-4199	4.1	28
73	Development of optimized weighted-ENO schemes for multiscale compressible flows. <i>International Journal for Numerical Methods in Fluids</i> , 2003 , 42, 953-977	1.9	28
72	An aerothermodynamic design optimization framework for hypersonic vehicles. <i>Aerospace Science and Technology</i> , 2019 , 84, 339-347	4.9	28
71	On the suitability of the immersed boundary method for the simulation of high-Reynolds-number separated turbulent flows. <i>Computers and Fluids</i> , 2016 , 130, 84-93	2.8	27

70	Wall pressure coherence in supersonic turbulent boundary layers. <i>Journal of Fluid Mechanics</i> , 2013 , 732, 445-456	3.7	27
69	Heat transfer and wall temperature effects in shock wave turbulent boundary layer interactions. <i>Physical Review Fluids</i> , 2016 , 1,	2.8	27
68	On the dynamical relevance of coherent vortical structures in turbulent boundary layers. <i>Journal of Fluid Mechanics</i> , 2010 , 648, 325-349	3.7	26
67	On the role of secondary motions in turbulent square duct flow. <i>Journal of Fluid Mechanics</i> , 2018 , 847,	3.7	24
66	Performance analysis and optimization of finite-difference schemes for wave propagation problems. <i>Journal of Computational Physics</i> , 2007 , 222, 809-831	4.1	23
65	A low-dissipative solver for turbulent compressible flows on unstructured meshes, with OpenFOAM implementation. <i>Computers and Fluids</i> , 2017 , 152, 14-23	2.8	22
64	Generalized characteristic relaxation boundary conditions for unsteady compressible flow simulations. <i>Journal of Computational Physics</i> , 2013 , 248, 109-126	4.1	22
63	The effect of large-scale turbulent structures on particle dispersion in wall-bounded flows. <i>International Journal of Multiphase Flow</i> , 2013 , 51, 55-64	3.6	22
62	Revisiting the mixing-length hypothesis in the outer part of turbulent wall layers: mean flow and wall friction. <i>Journal of Fluid Mechanics</i> , 2014 , 745, 378-397	3.7	22
61	A general framework for the evaluation of shock-capturing schemes. <i>Journal of Computational Physics</i> , 2019 , 376, 924-936	4.1	20
60	Vortex events in Euler and Navier-Stokes simulations with smooth initial conditions. <i>Journal of Fluid Mechanics</i> , 2012 , 690, 288-320	3.7	19
59	On the size of the energy-containing eddies in the outer turbulent wall layer. <i>Journal of Fluid Mechanics</i> , 2012 , 702, 521-532	3.7	16
58	Computational analysis of impinging shock-wave boundary layer interaction under conditions of incipient separation. <i>Shock Waves</i> , 2009 , 19, 487-497	1.6	16
57	Direct numerical simulation of supersonic pipe flow at moderate Reynolds number. <i>International Journal of Heat and Fluid Flow</i> , 2019 , 76, 100-112	2.4	15
56	On shock sensors for hybrid compact/WENO schemes. <i>Computers and Fluids</i> , 2020 , 199, 104439	2.8	15
55	Direct numerical simulation of conical shock wave turbulent boundary layer interaction. <i>Journal of Fluid Mechanics</i> , 2019 , 877, 167-195	3.7	14
54	Early evolution of the compressible mixing layer issued from two turbulent streams. <i>Journal of Fluid Mechanics</i> , 2015 , 777, 196-218	3.7	14
53	Decomposition of the mean friction drag in zero-pressure-gradient turbulent boundary layers. <i>Physics of Fluids</i> , 2019 , 31, 086105	4.4	13

52	Optimal transient growth in compressible turbulent boundary layers. <i>Journal of Fluid Mechanics</i> , 2015 , 770, 124-155	3.7	12
51	Vortex shedding in a two-dimensional diffuser: theory and simulation of separation control by periodic mass injection. <i>Journal of Fluid Mechanics</i> , 2004 , 520, 187-213	3.7	12
50	Genuine compressibility effects in wall-bounded turbulence. <i>Physical Review Fluids</i> , 2019 , 4,	2.8	12
49	Direct numerical simulation of developed compressible flow in square ducts. <i>International Journal of Heat and Fluid Flow</i> , 2019 , 76, 130-140	2.4	11
48	One-point statistics for turbulent pipe flow up to. <i>Journal of Fluid Mechanics</i> , 2021 , 926,	3.7	11
47	Mean equation based scaling analysis of fully-developed turbulent channel flow with uniform heat generation. <i>International Journal of Heat and Mass Transfer</i> , 2017 , 115, 50-61	4.9	10
46	Data-driven compressibility transformation for turbulent wall layers. <i>Physical Review Fluids</i> , 2020 , 5,	2.8	10
45	Scrutiny of buffet mechanisms in transonic flow. <i>International Journal of Numerical Methods for Heat and Fluid Flow</i> , 2018 , 28, 1031-1046	4.5	9
44	Direct Numerical Simulation and Theory of a Wall-Bounded Flow with Zero Skin Friction. <i>Flow, Turbulence and Combustion</i> , 2017 , 99, 553-564	2.5	9
43	Scaling of velocity fluctuations in statistically unstable boundary-layer flows. <i>Journal of Fluid Mechanics</i> , 2020 , 886,	3.7	9
42	An Efficient Semi-implicit Solver for Direct Numerical Simulation of Compressible Flows at All Speeds. <i>Journal of Scientific Computing</i> , 2018 , 75, 308-331	2.3	8
41	A minimal flow unit for the study of turbulence with passive scalars. <i>Journal of Turbulence</i> , 2014 , 15, 731-751	2.1	8
40	The fluid dynamics of rolling wheels at low Reynolds number. <i>Journal of Fluid Mechanics</i> , 2012 , 706, 496-533	3.7	8
39	Vorticity dynamics in turbulence growth. <i>Theoretical and Computational Fluid Dynamics</i> , 2010 , 24, 247-251	3.3	7
38	Towards the ultimate regime in Rayleigh-Darcy convection. <i>Journal of Fluid Mechanics</i> , 2021 , 911,	3.7	7
37	Turbulent flows in square ducts: physical insight and suggestions for turbulence modellers. <i>Journal of Turbulence</i> , 2020 , 21, 106-128	2.1	6
36	Reynolds-Averaged Numerical Simulations of Conical Shock-Wave/Boundary-Layer Interactions. <i>AIAA Journal</i> , 2021 , 59, 1645-1659	2.1	6
35	Reynolds stress scaling in the near-wall region of wall-bounded flows. <i>Journal of Fluid Mechanics</i> , 2021 , 926,	3.7	6

34	On algebraic TVD-VOF methods for tracking material interfaces. <i>Computers and Fluids</i> , 2019 , 189, 73-81	2.8	5
33	Compressibility effects on pressure fluctuation in compressible turbulent channel flows. <i>Physical Review Fluids</i> , 2020 , 5,	2.8	5
32	STREAMS: A high-fidelity accelerated solver for direct numerical simulation of compressible turbulent flows. <i>Computer Physics Communications</i> , 2021 , 263, 107906	4.2	5
31	On turbulent friction in straight ducts with complex cross-section: the wall law and the hydraulic diameter. <i>Journal of Fluid Mechanics</i> , 2018 , 846,	3.7	4
30	DNS of Turbulent Flows in Ducts with Complex Shape. <i>Flow, Turbulence and Combustion</i> , 2018 , 100, 1063-1079	2.5	4
29	On the velocity and dissipation signature of vortex tubes in isotropic turbulence. <i>Physica D: Nonlinear Phenomena</i> , 2012 , 241, 202-207	3.3	4
28	Properties of the scalar variance transport equation in turbulent channel flow. <i>Physical Review Fluids</i> , 2019 , 4,	2.8	4
27	Natural grid stretching for DNS of wall-bounded flows. <i>Journal of Computational Physics</i> , 2021 , 439, 110408	4.0	4
26	Transitional and turbulent flows in rectangular ducts: budgets and projection in principal mean strain axes. <i>Journal of Turbulence</i> , 2020 , 21, 286-310	2.1	3
25	Influence of corner angle in streamwise supersonic corner flow. <i>Physics of Fluids</i> , 2021 , 33, 056108	4.4	3
24	Crossflow effects on shock wave/turbulent boundary layer interactions. <i>Theoretical and Computational Fluid Dynamics</i> , 1	2.3	3
23	Optimised prefactored compact schemes for linear wave propagation phenomena. <i>Journal of Computational Physics</i> , 2017 , 328, 66-85	4.1	2
22	Flow organization near shear layers in turbulent wall-bounded flows. <i>Journal of Turbulence</i> , 2011 , 12, N41	2.1	2
21	Secondary Flow in Smooth and Rough Turbulent Circular Pipes: Turbulence Kinetic Energy Budgets. <i>Fluids</i> , 2021 , 6, 448	1.6	2
20	Drag reduction on a transonic airfoil. <i>Journal of Fluid Mechanics</i> , 2022 , 942,	3.7	2
19	Effects of Wall Temperature on Hypersonic Impinging Shock-Wave/Turbulent-Boundary-Layer Interactions. <i>AIAA Journal</i> , 1-14	2.1	2
18	Multi-variate Statistics of the Wall Pressure Field beneath Supersonic Turbulent Boundary Layers 2012 ,		1
17	A structural model for the vortex tubes of isotropic turbulence. <i>Theoretical and Computational Fluid Dynamics</i> , 2009 , 23, 55-62	2.3	1

16	Wall pressure fluctuations in transonic shock/boundary layer interaction. <i>Procedia Engineering</i> , 2010 , 6, 303-311		1
15	Self-Sustained Oscillations in Shock Wave/Turbulent Boundary Layer Interaction 2006 ,		1
14	Large-Eddy Simulations of Idealized Shock/Boundary-Layer Interactions with Crossflow. <i>AIAA Journal</i> ,1-13	2.1	1
13	On the relationship between drag and vertical velocity fluctuations in flow over riblets and liquid infused surfaces. <i>International Journal of Heat and Fluid Flow</i> , 2020 , 86, 108663	2.4	1
12	Energy-based decomposition of friction drag in turbulent square-duct flows. <i>International Journal of Heat and Fluid Flow</i> , 2020 , 86, 108731	2.4	1
11	HTR-1.2 solver: Hypersonic Task-based Research solver version 1.2. <i>Computer Physics Communications</i> , 2021 , 261, 107733	4.2	1
10	DNS of passive scalars in turbulent pipe flow. <i>Journal of Fluid Mechanics</i> , 2022 , 940,	3.7	1
9	Modal Analysis of Separation Bubble Unsteadiness in Conical Shock Wave/Turbulent Boundary Layer Interaction. <i>AIAA Journal</i> ,1-13	2.1	1
8	Reynolds number effects and outer similarity of pressure fluctuations in turbulent pipe flow. <i>International Journal of Heat and Fluid Flow</i> , 2022 , 96, 108998	2.4	1
7	High-Reynolds-number effects on turbulent scalings in compressible channel flow. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2015 , 15, 489-490	0.2	0
6	Shear/Buoyancy Interaction in Wall Bounded Turbulent Flows. <i>Springer Proceedings in Physics</i> , 2019 , 47-54	4.2	0
5	Conjugate heat transfer analysis of rectangular cooling channels using modeled and direct numerical simulation of turbulence. <i>International Journal of Heat and Mass Transfer</i> , 2021 , 181, 121849	4.9	0
4	Finite Difference Methods for Incompressible and Compressible Turbulence. <i>CISM International Centre for Mechanical Sciences, Courses and Lectures</i> , 2019 , 55-118	0.6	
3	Analysis of secondary motions in square duct flow. <i>Journal of Physics: Conference Series</i> , 2018 , 1001, 012009	0.9	
2	WP-1 Reference Cases of Laminar and Turbulent Interactions. <i>Notes on Numerical Fluid Mechanics and Multidisciplinary Design</i> , 2021 , 25-127	0.3	
1	WP-2 Basic Investigation of Transition Effect. <i>Notes on Numerical Fluid Mechanics and Multidisciplinary Design</i> , 2021 , 129-225	0.3	