

Parviz Moin

List of Publications by Year in descending order

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111
papers

25,849
citations

23500

58
h-index

29081

104
g-index

112
all docs

112
docs citations

112
times ranked

7745
citing authors

#	ARTICLE	IF	CITATIONS
1	A dynamic subgrid-scale eddy viscosity model. <i>Physics of Fluids A, Fluid Dynamics</i> , 1991, 3, 1760-1765.	1.6	5,561
2	Turbulence statistics in fully developed channel flow at low Reynolds number. <i>Journal of Fluid Mechanics</i> , 1987, 177, 133-166.	1.4	4,099
3	Numerical investigation of turbulent channel flow. <i>Journal of Fluid Mechanics</i> , 1982, 118, 341.	1.4	1,027
4	Progress-variable approach for large-eddy simulation of non-premixed turbulent combustion. <i>Journal of Fluid Mechanics</i> , 2004, 504, 73-97.	1.4	979
5	Direct numerical simulation of turbulent flow over a backward-facing step. <i>Journal of Fluid Mechanics</i> , 1997, 330, 349-374.	1.4	897
6	The minimal flow unit in near-wall turbulence. <i>Journal of Fluid Mechanics</i> , 1991, 225, 213-240.	1.4	892
7	A dynamic localization model for large-eddy simulation of turbulent flows. <i>Journal of Fluid Mechanics</i> , 1995, 286, 229-255.	1.4	648
8	Numerical studies of flow over a circular cylinder at $Re_D=3900$. <i>Physics of Fluids</i> , 2000, 12, 403-417.	1.6	586
9	Grid-point requirements for large eddy simulation: Chapman's estimates revisited. <i>Physics of Fluids</i> , 2012, 24, .	1.6	501
10	Effects of the Computational Time Step on Numerical Solutions of Turbulent Flow. <i>Journal of Computational Physics</i> , 1994, 113, 1-4.	1.9	494
11	Direct numerical simulation of turbulence in a nominally zero-pressure-gradient flat-plate boundary layer. <i>Journal of Fluid Mechanics</i> , 2009, 630, 5-41.	1.4	460
12	Characteristic-eddy decomposition of turbulence in a channel. <i>Journal of Fluid Mechanics</i> , 1989, 200, 471-509.	1.4	364
13	Sound generation in a mixing layer. <i>Journal of Fluid Mechanics</i> , 1997, 330, 375-409.	1.4	355
14	The structure of two-dimensional separation. <i>Journal of Fluid Mechanics</i> , 1990, 220, 397-411.	1.4	352
15	Suitability of Upwind-Biased Finite Difference Schemes for Large-Eddy Simulation of Turbulent Flows. <i>AIAA Journal</i> , 1997, 35, 1415-1417.	1.5	347
16	A direct numerical simulation study on the mean velocity characteristics in turbulent pipe flow. <i>Journal of Fluid Mechanics</i> , 2008, 608, 81-112.	1.4	339
17	The structure of the vorticity field in homogeneous turbulent flows. <i>Journal of Fluid Mechanics</i> , 1987, 176, 33.	1.4	315
18	Large-eddy simulation of turbulent confined coannular jets. <i>Journal of Fluid Mechanics</i> , 1996, 315, 387-411.	1.4	315

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19	Dynamic wall modeling for large-eddy simulation of complex turbulent flows. <i>Physics of Fluids</i> , 2002, 14, 2043.	1.6	289
20	Stochastic estimation of organized turbulent structure: homogeneous shear flow. <i>Journal of Fluid Mechanics</i> , 1988, 190, 531-559.	1.4	269
21	New approximate boundary conditions for large eddy simulations of wall-bounded flows. <i>Physics of Fluids A, Fluid Dynamics</i> , 1989, 1, 1061-1068.	1.6	257
22	Direct numerical simulation of isotropic turbulence interacting with a weak shock wave. <i>Journal of Fluid Mechanics</i> , 1993, 251, 533-562.	1.4	255
23	Simulation of spatially evolving turbulence and the applicability of Taylor's hypothesis in compressible flow. <i>Physics of Fluids A, Fluid Dynamics</i> , 1992, 4, 1521-1530.	1.6	242
24	On the coherent drag-reducing and turbulence-enhancing behaviour of polymers in wall flows. <i>Journal of Fluid Mechanics</i> , 2004, 514, 271-280.	1.4	224
25	The structure of the vorticity field in turbulent channel flow. Part 1. Analysis of instantaneous fields and statistical correlations. <i>Journal of Fluid Mechanics</i> , 1985, 155, 441.	1.4	220
26	A further study of numerical errors in large-eddy simulations. <i>Journal of Computational Physics</i> , 2003, 184, 366-380.	1.9	206
27	Shear-free turbulent boundary layers. Part 1. Physical insights into near-wall turbulence. <i>Journal of Fluid Mechanics</i> , 1995, 295, 199.	1.4	201
28	An improvement of fractional step methods for the incompressible Navier-Stokes equations. <i>Journal of Computational Physics</i> , 1991, 92, 369-379.	1.9	200
29	Eddy shocklets in decaying compressible turbulence. <i>Physics of Fluids A, Fluid Dynamics</i> , 1991, 3, 657-664.	1.6	195
30	Higher entropy conservation and numerical stability of compressible turbulence simulations. <i>Journal of Computational Physics</i> , 2004, 201, 531-545.	1.9	185
31	On the relation of near-wall streamwise vortices to wall skin friction in turbulent boundary layers. <i>Physics of Fluids A, Fluid Dynamics</i> , 1993, 5, 3307-3309.	1.6	169
32	On the space-time characteristics of wall-pressure fluctuations. <i>Physics of Fluids A, Fluid Dynamics</i> , 1990, 2, 1450-1460.	1.6	167
33	Direct computation of the sound generated by vortex pairing in an axisymmetric jet. <i>Journal of Fluid Mechanics</i> , 1999, 383, 113-142.	1.4	164
34	Direct computation of the sound from a compressible co-rotating vortex pair. <i>Journal of Fluid Mechanics</i> , 1995, 285, 181.	1.4	158
35	An improved dynamic non-equilibrium wall-model for large eddy simulation. <i>Physics of Fluids</i> , 2014, 26, .	1.6	147
36	The structure of the vorticity field in turbulent channel flow. Part 2. Study of ensemble-averaged fields. <i>Journal of Fluid Mechanics</i> , 1986, 162, 339.	1.4	146

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37	Direct numerical simulation of complete H-type and K-type transitions with implications for the dynamics of turbulent boundary layers. <i>Journal of Fluid Mechanics</i> , 2013, 724, 480-509.	1.4	141
38	The scattering of sound waves by a vortex: numerical simulations and analytical solutions. <i>Journal of Fluid Mechanics</i> , 1994, 260, 271-298.	1.4	136
39	Minimum-dissipation models for large-eddy simulation. <i>Physics of Fluids</i> , 2015, 27, .	1.6	122
40	Transitional and turbulent boundary layer with heat transfer. <i>Physics of Fluids</i> , 2010, 22, .	1.6	115
41	The interaction of an isotropic field of acoustic waves with a shock wave. <i>Journal of Fluid Mechanics</i> , 1995, 300, 383-407.	1.4	114
42	Feedback Control of Turbulence. <i>Applied Mechanics Reviews</i> , 1994, 47, S3-S13.	4.5	113
43	Grid-independent large-eddy simulation using explicit filtering. <i>Physics of Fluids</i> , 2010, 22, .	1.6	113
44	Optimal Aeroacoustic Shape Design Using the Surrogate Management Framework. <i>Optimization and Engineering</i> , 2004, 5, 235-262.	1.3	109
45	Log-layer mismatch and modeling of the fluctuating wall stress in wall-modeled large-eddy simulations. <i>Physical Review Fluids</i> , 2017, 2, .	1.0	103
46	Suitability of artificial bulk viscosity for large-eddy simulation of turbulent flows with shocks. <i>Journal of Computational Physics</i> , 2009, 228, 7368-7374.	1.9	99
47	Direct numerical simulation of polymer-induced drag reduction in turbulent boundary layer flow. <i>Physics of Fluids</i> , 2005, 17, 011705.	1.6	92
48	Unstructured Large Eddy Simulation for Prediction of Noise Issued from Turbulent Jets in Various Configurations. , 2011, , .		91
49	A Semi-implicit Method for Resolution of Acoustic Waves in Low Mach Number Flows. <i>Journal of Computational Physics</i> , 2002, 181, 545-563.	1.9	90
50	An Efficient Method for Temporal Integration of the Navier–Stokes Equations in Confined Axisymmetric Geometries. <i>Journal of Computational Physics</i> , 1996, 125, 454-463.	1.9	89
51	Numerical simulation of turbulent drag reduction using rigid fibres. <i>Journal of Fluid Mechanics</i> , 2004, 518, 281-317.	1.4	85
52	Transitional “turbulent spots and turbulent” turbulent spots in boundary layers. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, E5292-E5299.	3.3	85
53	Trailing-edge noise reduction using derivative-free optimization and large-eddy simulation. <i>Journal of Fluid Mechanics</i> , 2007, 572, 13-36.	1.4	84
54	Dynamic slip wall model for large-eddy simulation. <i>Journal of Fluid Mechanics</i> , 2019, 859, 400-432.	1.4	80

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55	Helicity fluctuations in incompressible turbulent flows. <i>Physics of Fluids</i> , 1987, 30, 2662-2671.	1.4	76
56	Reduced-order representation of near-wall structures in the late transitional boundary layer. <i>Journal of Fluid Mechanics</i> , 2014, 748, 278-301.	1.4	71
57	Construction of Commutative Filters for LES on Unstructured Meshes. <i>Journal of Computational Physics</i> , 2002, 175, 584-603.	1.9	70
58	The free compressible viscous vortex. <i>Journal of Fluid Mechanics</i> , 1991, 230, 45-73.	1.4	65
59	Velocity transformation for compressible wall-bounded turbulent flows with and without heat transfer. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	64
60	Computational study of optical distortions by separated shear layers and turbulent wakes. <i>Journal of Fluid Mechanics</i> , 2009, 625, 273-298.	1.4	59
61	Large eddy simulation of controlled transition to turbulence. <i>Physics of Fluids</i> , 2012, 24, .	1.6	58
62	Direct numerical simulation of a turbulent hydraulic jump: turbulence statistics and air-entrainment. <i>Journal of Fluid Mechanics</i> , 2016, 797, 60-94.	1.4	58
63	Direct numerical simulation of polymer-induced drag reduction in turbulent boundary layer flow of inhomogeneous polymer solutions. <i>Journal of Fluid Mechanics</i> , 2006, 566, 153.	1.4	54
64	Shock-induced heating and transition to turbulence in a hypersonic boundary layer. <i>Journal of Fluid Mechanics</i> , 2021, 909, .	1.4	54
65	Minimum-dissipation scalar transport model for large-eddy simulation of turbulent flows. <i>Physical Review Fluids</i> , 2016, 1, .	1.0	49
66	Constant-energetics physical-space forcing methods for improved convergence to homogeneous-isotropic turbulence with application to particle-laden flows. <i>Physics of Fluids</i> , 2016, 28, .	1.6	46
67	Numerical aspects and implementation of a two-layer zonal wall model for LES of compressible turbulent flows on unstructured meshes. <i>Journal of Computational Physics</i> , 2016, 305, 589-603.	1.9	46
68	Osborne Reynolds pipe flow: Direct simulation from laminar through gradual transition to fully developed turbulence. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 7920-7924.	3.3	44
69	Large eddy simulation of aircraft at affordable cost: a milestone in computational fluid dynamics. <i>Flow</i> , 2021, 1, .	1.0	42
70	An experimental and numerical investigation of drag reduction in a turbulent boundary layer using a rigid rodlike polymer. <i>Physics of Fluids</i> , 2005, 17, 085101.	1.6	41
71	Space-time characteristics of wall-pressure and wall shear-stress fluctuations in wall-modeled large eddy simulation. <i>Physical Review Fluids</i> , 2016, 1, .	1.0	41
72	An adaptive implicit-“explicit” scheme for the DNS and LES of compressible flows on unstructured grids. <i>Journal of Computational Physics</i> , 2010, 229, 5944-5965.	1.9	39

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73	A conservative diffuse-interface method for compressible two-phase flows. <i>Journal of Computational Physics</i> , 2020, 418, 109606.	1.9	39
74	Accurate interface normal and curvature estimates on three-dimensional unstructured non-convex polyhedral meshes. <i>Journal of Computational Physics</i> , 2015, 300, 365-386.	1.9	37
75	A simple dynamic subgrid-scale model for LES of particle-laden turbulence. <i>Physical Review Fluids</i> , 2017, 2, .	1.0	37
76	Aerodynamic Heating in Wall-Modeled Large-Eddy Simulation of High-Speed Flows. <i>AIAA Journal</i> , 2018, 56, 731-742.	1.5	36
77	Computational study on the internal layer in a diffuser. <i>Journal of Fluid Mechanics</i> , 2006, 550, 391.	1.4	35
78	Large-Eddy Simulation of Thermally Stratified Atmospheric Boundary-Layer Flow Using a Minimum Dissipation Model. <i>Boundary-Layer Meteorology</i> , 2017, 165, 405-419.	1.2	35
79	Non-equilibrium three-dimensional boundary layers at moderate Reynolds numbers. <i>Journal of Fluid Mechanics</i> , 2020, 883, .	1.4	34
80	Boundary layer turbulence in transitional and developed states. <i>Physics of Fluids</i> , 2012, 24, .	1.6	31
81	General method for determining the boundary layer thickness in nonequilibrium flows. <i>Physical Review Fluids</i> , 2021, 6, .	1.0	31
82	Large eddy simulation of high-lift devices. , 2013, , .		30
83	Conservative and bounded volume-of-fluid advection on unstructured grids. <i>Journal of Computational Physics</i> , 2017, 350, 387-419.	1.9	30
84	Turbophoresis of small inertial particles: theoretical considerations and application to wall-modelled large-eddy simulations. <i>Journal of Fluid Mechanics</i> , 2020, 883, .	1.4	29
85	The turbulent bubble break-up cascade. Part 2. Numerical simulations of breaking waves. <i>Journal of Fluid Mechanics</i> , 2021, 912, .	1.4	29
86	Suppression of vortex-shedding noise via derivative-free shape optimization. <i>Physics of Fluids</i> , 2004, 16, L83-L86.	1.6	28
87	Shear-free turbulent boundary layers. Part 2. New concepts for Reynolds stress transport equation modelling of inhomogeneous flows. <i>Journal of Fluid Mechanics</i> , 1995, 295, 229.	1.4	26
88	Algebraic disturbance growth by interaction of Orr and lift-up mechanisms. <i>Journal of Fluid Mechanics</i> , 2017, 829, 112-126.	1.4	26
89	The response of anisotropic turbulence to rapid homogeneous one-dimensional compression. <i>Physics of Fluids</i> , 1994, 6, 1052-1062.	1.6	21
90	Performance of Wall-Modeled LES with Boundary-Layer-Conforming Grids for External Aerodynamics. <i>AIAA Journal</i> , 2022, 60, 747-766.	1.5	21

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91	The turbulent bubble break-up cascade. Part 1. Theoretical developments. Journal of Fluid Mechanics, 2021, 912, .	1.4	20
92	Coherent instability in wall-bounded shear. Journal of Fluid Mechanics, 2018, 844, 917-955.	1.4	18
93	A dynamic spectrally enriched subgrid-scale model for preferential concentration in particle-laden turbulence. International Journal of Multiphase Flow, 2019, 116, 270-280.	1.6	17
94	Prediction of aerothermal characteristics of a generic hypersonic inlet flow. Theoretical and Computational Fluid Dynamics, 2022, 36, 345-368.	0.9	17
95	Birth of microbubbles in turbulent breaking waves. Physical Review Fluids, 2019, 4, .	1.0	15
96	Non-Boussinesq subgrid-scale model with dynamic tensorial coefficients. Physical Review Fluids, 2022, 7, .	1.0	14
97	Prediction of trailing edge separation on the NASA Juncture Flow using wall-modeled LES. , 2020, , .		13
98	Extraction of coherent clusters and grid adaptation in particle-laden turbulence using wavelet filters. Physical Review Fluids, 2017, 2, .	1.0	12
99	Wavelet multiresolution analysis of particle-laden turbulence. Physical Review Fluids, 2018, 3, .	1.0	12
100	Large Eddy Simulation of the NASA High-Lift Common Research Model. , 2022, , .		12
101	Identifying and tracking bubbles and drops in simulations: A toolbox for obtaining sizes, lineages, and breakup and coalescence statistics. Journal of Computational Physics, 2021, 432, 110156.	1.9	9
102	Wall-Modeled Large-Eddy Simulation of Turbulent Boundary Layers with Mean-Flow Three-Dimensionality. AIAA Journal, 2021, 59, 1707-1717.	1.5	9
103	Large-activation-energy theory for premixed combustion under the influence of enthalpy fluctuations. Journal of Fluid Mechanics, 2010, 655, 3-37.	1.4	8
104	A kinetic energyâ€and entropy-preserving scheme for compressible two-phase flows. Journal of Computational Physics, 2022, 464, 111307.	1.9	7
105	An Appreciation of the Life and Work of William C. Reynolds (1933â€2004). Annual Review of Fluid Mechanics, 2017, 49, 1-21.	10.8	6
106	Wall-Modeled Large Eddy Simulation of an Aircraft in Landing Configuration. , 2020, , .		6
107	Laminar to fully turbulent flow in a pipe: scalar patches, structural duality of turbulent spots and transitional overshoot. Journal of Fluid Mechanics, 2020, 896, .	1.4	5
108	A mechanism for the amplification of interface distortions on liquid jets. Journal of Fluid Mechanics, 2021, 911, .	1.4	4

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109	Using parabolized stability equations to model boundary-layer transition in direct and large-eddy simulations. , 2018, 2018, .		1
110	Preface to Special Topic: Turbulence Physics and Controlâ€”Papers from a Workshop in Honor of John Kim's 60th Birthday, Stanford, California, September 2007. Physics of Fluids, 2008, 20, 101501.	1.6	0
111	Preliminary Visualization Study on the Flat-Plate Boundary Layer with Continuous Freestream Turbulence. , 2013, , .		0