Parviz Moin

List of Publications by Year
in descending order

111 papers	25,849 citations	23567 58 h-index	29157 104 g-index
112 all docs	112 docs citations	112 times ranked	7745 citing authors

#	Article	IF	Citations
1	Prediction of aerothermal characteristics of a generic hypersonic inlet flow. Theoretical and Computational Fluid Dynamics, 2022, 36, 345-368.	2.2	17
2	Performance of Wall-Modeled LES with Boundary-Layer-Conforming Grids for External Aerodynamics. AIAA Journal, 2022, 60, 747-766.	2.6	21
3	Large Eddy Simulation of the NASA High-Lift Common Research Model. , 2022, , .		12
4	A kinetic energyâ€"and entropy-preserving scheme for compressible two-phase flows. Journal of Computational Physics, 2022, 464, 111307.	3.8	7
5	Non-Boussinesq subgrid-scale model with dynamic tensorial coefficients. Physical Review Fluids, 2022, 7, .	2.5	14
6	The turbulent bubble break-up cascade. Part 2. Numerical simulations of breaking waves. Journal of Fluid Mechanics, 2021, 912, .	3.4	29
7	The turbulent bubble break-up cascade. Part 1. Theoretical developments. Journal of Fluid Mechanics, 2021, 912, .	3.4	20
8	A mechanism for the amplification of interface distortions on liquid jets. Journal of Fluid Mechanics, 2021, 911, .	3.4	4
9	General method for determining the boundary layer thickness in nonequilibrium flows. Physical Review Fluids, 2021, 6, .	2.5	31
10	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.	3.8	9
11	Wall-Modeled Large-Eddy Simulation of Turbulent Boundary Layers with Mean-Flow Three-Dimensionality. AIAA Journal, 2021, 59, 1707-1717.	2.6	9
12	Velocity transformation for compressible wall-bounded turbulent flows with and without heat transfer. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	64
13	Shock-induced heating and transition to turbulence in a hypersonic boundary layer. Journal of Fluid Mechanics, 2021, 909, .	3.4	54
14	Large eddy simulation of aircraft at affordable cost: a milestone in computational fluid dynamics. Flow, 2021, 1, .	2.6	42
15	Non-equilibrium three-dimensional boundary layers at moderate Reynolds numbers. Journal of Fluid Mechanics, 2020, 883, .	3.4	34
16	Turbophoresis of small inertial particles: theoretical considerations and application to wall-modelled large-eddy simulations. Journal of Fluid Mechanics, 2020, 883, .	3.4	29
17	Prediction of trailing edge separation on the NASA Juncture Flow using wall-modeled LES. , 2020, , .		13
18	A conservative diffuse-interface method for compressible two-phase flows. Journal of Computational Physics, 2020, 418, 109606.	3.8	39

#	Article	IF	Citations
19	Laminar to fully turbulent flow in a pipe: scalar patches, structural duality of turbulent spots and transitional overshoot. Journal of Fluid Mechanics, 2020, 896, .	3.4	5
20	Wall-Modeled Large Eddy Simulation of an Aircraft in Landing Configuration. , 2020, , .		6
21	A dynamic spectrally enriched subgrid-scale model for preferential concentration in particle-laden turbulence. International Journal of Multiphase Flow, 2019, 116, 270-280.	3.4	17
22	Dynamic slip wall model for large-eddyÂsimulation. Journal of Fluid Mechanics, 2019, 859, 400-432.	3.4	80
23	Birth of microbubbles in turbulent breaking waves. Physical Review Fluids, 2019, 4, .	2.5	15
24	Coherent instability in wall-bounded shear. Journal of Fluid Mechanics, 2018, 844, 917-955.	3.4	18
25	Aerodynamic Heating in Wall-Modeled Large-Eddy Simulation of High-Speed Flows. AIAA Journal, 2018, 56, 731-742.	2.6	36
26	Using parabolized stability equations to model boundary-layer transition in direct and large-eddy simulations. , 2018, 2018, .		1
27	Wavelet multiresolution analysis of particle-laden turbulence. Physical Review Fluids, 2018, 3, .	2.5	12
28	An Appreciation of the Life and Work of William C. Reynolds (1933â€"2004). Annual Review of Fluid Mechanics, 2017, 49, 1-21.	25.0	6
29	Conservative and bounded volume-of-fluid advection on unstructured grids. Journal of Computational Physics, 2017, 350, 387-419.	3.8	30
30	Algebraic disturbance growth by interaction of Orr and lift-up mechanisms. Journal of Fluid Mechanics, 2017, 829, 112-126.	3.4	26
31	Large-Eddy Simulation of Thermally Stratified Atmospheric Boundary-Layer Flow Using a Minimum Dissipation Model. Boundary-Layer Meteorology, 2017, 165, 405-419.	2.3	35
32	Transitionalâ€"turbulent spots and turbulentâ€"turbulent spots in boundary layers. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E5292-E5299.	7.1	85
33	A simple dynamic subgrid-scale model for LES of particle-laden turbulence. Physical Review Fluids, 2017, 2, .	2.5	37
34	Extraction of coherent clusters and grid adaptation in particle-laden turbulence using wavelet filters. Physical Review Fluids, 2017, 2, .	2.5	12
35	Log-layer mismatch and modeling of the fluctuating wall stress in wall-modeled large-eddy simulations. Physical Review Fluids, 2017, 2, .	2.5	103
36	Direct numerical simulation of a turbulent hydraulic jump: turbulence statistics and airÂentrainment. Journal of Fluid Mechanics, 2016, 797, 60-94.	3.4	58

#	Article	IF	Citations
37	Constant-energetics physical-space forcing methods for improved convergence to homogeneous-isotropic turbulence with application to particle-laden flows. Physics of Fluids, 2016, 28, .	4.0	46
38	Numerical aspects and implementation of a two-layer zonal wall model for LES of compressible turbulent flows on unstructured meshes. Journal of Computational Physics, 2016, 305, 589-603.	3.8	46
39	Space-time characteristics of wall-pressure and wall shear-stress fluctuations in wall-modeled large eddy simulation. Physical Review Fluids, 2016, 1, .	2.5	41
40	Minimum-dissipation scalar transport model for large-eddy simulation of turbulent flows. Physical Review Fluids, 2016, 1, .	2.5	49
41	Osborne Reynolds pipe flow: Direct simulation from laminar through gradual transition to fully developed turbulence. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 7920-7924.	7.1	44
42	Accurate interface normal and curvature estimates on three-dimensional unstructured non-convex polyhedral meshes. Journal of Computational Physics, 2015, 300, 365-386.	3.8	37
43	Minimum-dissipation models for large-eddy simulation. Physics of Fluids, 2015, 27, .	4.0	122
44	Reduced-order representation of near-wall structures in the late transitional boundary layer. Journal of Fluid Mechanics, 2014, 748, 278-301.	3.4	71
45	An improved dynamic non-equilibrium wall-model for large eddy simulation. Physics of Fluids, 2014, 26, .	4.0	147
46	Direct numerical simulation of complete H-type and K-type transitions with implications for the dynamics of turbulent boundary layers. Journal of Fluid Mechanics, 2013, 724, 480-509.	3.4	141
47	Preliminary Visualization Study on the Flat-Plate Boundary Layer with Continuous Freestream Turbulence. , 2013, , .		0
48	Large eddy simulation of high-lift devices. , 2013, , .		30
49	Large eddy simulation of controlled transition to turbulence. Physics of Fluids, 2012, 24, .	4.0	58
50	Boundary layer turbulence in transitional and developed states. Physics of Fluids, 2012, 24, .	4.0	31
51	Grid-point requirements for large eddy simulation: Chapman's estimates revisited. Physics of Fluids, 2012, 24, .	4.0	501
52	Unstructured Large Eddy Simulation for Prediction of Noise Issued from Turbulent Jets in Various Configurations. , 2011, , .		91
53	An adaptive implicit–explicit scheme for the DNS and LES of compressible flows on unstructured grids. Journal of Computational Physics, 2010, 229, 5944-5965.	3.8	39
54	Grid-independent large-eddy simulation using explicit filtering. Physics of Fluids, 2010, 22, .	4.0	113

#	Article	IF	Citations
55	Large-activation-energy theory for premixed combustion under the influence of enthalpy fluctuations. Journal of Fluid Mechanics, 2010, 655, 3-37.	3.4	8
56	Transitional and turbulent boundary layer with heat transfer. Physics of Fluids, 2010, 22, .	4.0	115
57	Suitability of artificial bulk viscosity for large-eddy simulation of turbulent flows with shocks. Journal of Computational Physics, 2009, 228, 7368-7374.	3.8	99
58	Direct numerical simulation of turbulence in a nominally zero-pressure-gradient flat-plate boundary layer. Journal of Fluid Mechanics, 2009, 630, 5-41.	3.4	460
59	Computational study of optical distortions by separated shear layers and turbulent wakes. Journal of Fluid Mechanics, 2009, 625, 273-298.	3.4	59
60	Preface to Special Topic: Turbulence Physics and Control—Papers from a Workshop in Honor of John Kim's 60th Birthday, Stanford, California, September 2007. Physics of Fluids, 2008, 20, 101501.	4.0	0
61	A direct numerical simulation study on the mean velocity characteristics in turbulent pipe flow. Journal of Fluid Mechanics, 2008, 608, 81-112.	3.4	339
62	Trailing-edge noise reduction using derivative-free optimization and large-eddy simulation. Journal of Fluid Mechanics, 2007, 572, 13-36.	3.4	84
63	Direct numerical simulation of polymer-induced drag reduction in turbulent boundary layer flow of inhomogeneous polymer solutions. Journal of Fluid Mechanics, 2006, 566, 153.	3.4	54
64	Computational study on the internal layer in a diffuser. Journal of Fluid Mechanics, 2006, 550, 391.	3.4	35
65	An experimental and numerical investigation of drag reduction in a turbulent boundary layer using a rigid rodlike polymer. Physics of Fluids, 2005, 17, 085101.	4.0	41
66	Direct numerical simulation of polymer-induced drag reduction in turbulent boundary layer flow. Physics of Fluids, 2005, 17, 011705.	4.0	92
67	Suppression of vortex-shedding noise via derivative-free shape optimization. Physics of Fluids, 2004, 16, L83-L86.	4.0	28
68	Optimal Aeroacoustic Shape Design Using the Surrogate Management Framework. Optimization and Engineering, 2004, 5, 235-262.	2.4	109
69	Higher entropy conservation and numerical stability of compressible turbulence simulations. Journal of Computational Physics, 2004, 201, 531-545.	3.8	185
70	Numerical simulation of turbulent drag reduction using rigid fibres. Journal of Fluid Mechanics, 2004, 518, 281-317.	3.4	85
71	On the coherent drag-reducing and turbulence-enhancing behaviour of polymers in wall flows. Journal of Fluid Mechanics, 2004, 514, 271-280.	3.4	224
72	Progress-variable approach for large-eddy simulation of non-premixed turbulent combustion. Journal of Fluid Mechanics, 2004, 504, 73-97.	3.4	979

#	Article	IF	Citations
73	A further study of numerical errors in large-eddy simulations. Journal of Computational Physics, 2003, 184, 366-380.	3.8	206
74	Dynamic wall modeling for large-eddy simulation of complex turbulent flows. Physics of Fluids, 2002, 14, 2043.	4.0	289
75	Construction of Commutative Filters for LES on Unstructured Meshes. Journal of Computational Physics, 2002, 175, 584-603.	3.8	70
76	A Semi-implicit Method for Resolution of Acoustic Waves in Low Mach Number Flows. Journal of Computational Physics, 2002, 181, 545-563.	3.8	90
77	Numerical studies of flow over a circular cylinder at ReD=3900. Physics of Fluids, 2000, 12, 403-417.	4.0	586
78	Direct computation of the sound generated by vortex pairing in an axisymmetric jet. Journal of Fluid Mechanics, 1999, 383, 113-142.	3.4	164
79	Sound generation in a mixing layer. Journal of Fluid Mechanics, 1997, 330, 375-409.	3.4	355
80	Suitability of Upwind-Biased Finite Difference Schemes for Large-Eddy Simulation of Turbulent Flows. AIAA Journal, 1997, 35, 1415-1417.	2.6	347
81	Direct numerical simulation of turbulent flow over a backward-facing step. Journal of Fluid Mechanics, 1997, 330, 349-374.	3.4	897
82	Large-eddy simulation of turbulent confined coannular jets. Journal of Fluid Mechanics, 1996, 315, 387-411.	3.4	315
83	An Efficient Method for Temporal Integration of the Navier–Stokes Equations in Confined Axisymmetric Geometries. Journal of Computational Physics, 1996, 125, 454-463.	3.8	89
84	The interaction of an isotropic field of acoustic waves with a shock wave. Journal of Fluid Mechanics, 1995, 300, 383-407.	3.4	114
85	Shear-free turbulent boundary layers. Part 1. Physical insights into near-wall turbulence. Journal of Fluid Mechanics, 1995, 295, 199.	3.4	201
86	Shear-free turbulent boundary layers. Part 2. New concepts for Reynolds stress transport equation modelling of inhomogeneous flows. Journal of Fluid Mechanics, 1995, 295, 229.	3.4	26
87	A dynamic localization model for large-eddy simulation of turbulent flows. Journal of Fluid Mechanics, 1995, 286, 229-255.	3.4	648
88	Direct computation of the sound from a compressible co-rotating vortex pair. Journal of Fluid Mechanics, 1995, 285, 181.	3.4	158
89	Feedback Control of Turbulence. Applied Mechanics Reviews, 1994, 47, S3-S13.	10.1	113
90	Effects of the Computational Time Step on Numerical Solutions of Turbulent Flow. Journal of Computational Physics, 1994, 113, 1-4.	3.8	494

#	Article	IF	Citations
91	The scattering of sound waves by a vortex: numerical simulations and analytical solutions. Journal of Fluid Mechanics, 1994, 260, 271-298.	3.4	136
92	The response of anisotropic turbulence to rapid homogeneous oneâ€dimensional compression. Physics of Fluids, 1994, 6, 1052-1062.	4.0	21
93	Direct numerical simulation of isotropic turbulence interacting with a weak shock wave. Journal of Fluid Mechanics, 1993, 251, 533-562.	3.4	255
94	On the relation of nearâ€wall streamwise vortices to wall skin friction in turbulent boundary layers. Physics of Fluids A, Fluid Dynamics, 1993, 5, 3307-3309.	1.6	169
95	Simulation of spatially evolving turbulence and the applicability of Taylorâ€™s hypothesis in compressible flow. Physics of Fluids A, Fluid Dynamics, 1992, 4, 1521-1530.	1.6	242
96	A dynamic subgridâ€scale eddy viscosity model. Physics of Fluids A, Fluid Dynamics, 1991, 3, 1760-1765.	1.6	5,561
97	The minimal flow unit in near-wall turbulence. Journal of Fluid Mechanics, 1991, 225, 213-240.	3.4	892
98	The free compressible viscous vortex. Journal of Fluid Mechanics, 1991, 230, 45-73.	3.4	65
99	Eddy shocklets in decaying compressible turbulence. Physics of Fluids A, Fluid Dynamics, 1991, 3, 657-664.	1.6	195
100	An improvement of fractional step methods for the incompressible Navier-Stokes equations. Journal of Computational Physics, 1991, 92, 369-379.	3.8	200
101	On the spaceâ€time characteristics of wallâ€pressure fluctuations. Physics of Fluids A, Fluid Dynamics, 1990, 2, 1450-1460.	1.6	167
102	The structure of two-dimensional separation. Journal of Fluid Mechanics, 1990, 220, 397-411.	3.4	352
103	Characteristic-eddy decomposition of turbulence in a channel. Journal of Fluid Mechanics, 1989, 200, 471-509.	3.4	364
104	New approximate boundary conditions for large eddy simulations of wallâ€bounded flows. Physics of Fluids A, Fluid Dynamics, 1989, 1, 1061-1068.	1.6	257
105	Stochastic estimation of organized turbulent structure: homogeneous shear flow. Journal of Fluid Mechanics, 1988, 190, 531-559.	3.4	269
106	Helicity fluctuations in incompressible turbulent flows. Physics of Fluids, 1987, 30, 2662-2671.	1.4	76
107	The structure of the vorticity field in homogeneous turbulent flows. Journal of Fluid Mechanics, 1987, 176, 33.	3.4	315
108	Turbulence statistics in fully developed channel flow at low Reynolds number. Journal of Fluid Mechanics, 1987, 177, 133-166.	3.4	4,099

#	Article	IF	Citations
109	The structure of the vorticity field in turbulent channel flow. Part 2. Study of ensemble-averaged fields. Journal of Fluid Mechanics, 1986, 162, 339.	3.4	146
110	The structure of the vorticity field in turbulent channel flow. Part 1. Analysis of instantaneous fields and statistical correlations. Journal of Fluid Mechanics, 1985, 155, 441.	3.4	220
111	Numerical investigation of turbulent channel flow. Journal of Fluid Mechanics, 1982, 118, 341.	3.4	1,027