Parviz Moin

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

105 papers	20,424 citations	56 h-index	112 g-index
112 ext. papers	23,075 ext. citations	4.1 avg, IF	6.84 L-index

#	Paper	IF	Citations
105	A kinetic energy and entropy-preserving scheme for compressible two-phase flows. *Journal of Computational Physics*, **2022**, 464, 111307	4.1	0
104	Shock-induced heating and transition to turbulence in a hypersonic boundary layer. *Journal of Fluid Mechanics*, **2021**, 909,	3.7	15
103	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	4.1	2
102	Wall-Modeled Large-Eddy Simulation of Turbulent Boundary Layers with Mean-Flow Three-Dimensionality. *AIAA Journal*, **2021**, 59, 1707-1717	2.1	1
101	The turbulent bubble break-up cascade. Part 2. Numerical simulations of breaking waves. *Journal of Fluid Mechanics*, **2021**, 912,	3.7	10
100	The turbulent bubble break-up cascade. Part 1. Theoretical developments. *Journal of Fluid Mechanics*, **2021**, 912,	3.7	8
99	General method for determining the boundary layer thickness in nonequilibrium flows. *Physical Review Fluids*, **2021**, 6,	2.8	10
98	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,	11.5	4
97	A conservative diffuse-interface method for compressible two-phase flows. *Journal of Computational Physics*, **2020**, 418, 109606	4.1	12
96	Laminar to fully turbulent flow in a pipe: scalar patches, structural duality of turbulent spots and transitional overshoot. *Journal of Fluid Mechanics*, **2020**, 896,	3.7	4
95	Non-equilibrium three-dimensional boundary layers at moderate Reynolds numbers. *Journal of Fluid Mechanics*, **2020**, 883,	3.7	12
94	Turbophoresis of small inertial particles: theoretical considerations and application to wall-modelled large-eddy simulations. *Journal of Fluid Mechanics*, **2020**, 883,	3.7	11
93	Prediction of trailing edge separation on the NASA Juncture Flow using wall-modeled LES **2020**,		6
92	A dynamic spectrally enriched subgrid-scale model for preferential concentration in particle-laden turbulence. *International Journal of Multiphase Flow*, **2019**, 116, 270-280	3.6	9
91	Birth of microbubbles in turbulent breaking waves. *Physical Review Fluids*, **2019**, 4,	2.8	11
90	Dynamic slip wall model for large-eddy simulation. *Journal of Fluid Mechanics*, **2019**, 859, 400-432	3.7	39
89	Coherent instability in wall-bounded shear. *Journal of Fluid Mechanics*, **2018**, 844, 917-955	3.7	12

88	Wavelet multiresolution analysis of particle-laden turbulence. *Physical Review Fluids*, **2018**, 3,	2.8	6
87	Aerodynamic Heating in Wall-Modeled Large-Eddy Simulation of High-Speed Flows. *AIAA Journal*, **2018**, 56, 731-742	2.1	16
86	Using parabolized stability equations to model boundary-layer transition in direct and large-eddy simulations **2018**, 2018,		1
85	An Appreciation of the Life and Work of William C. Reynolds (1933–2004). *Annual Review of Fluid Mechanics*, **2017**, 49, 1-21	22	6
84	Conservative and bounded volume-of-fluid advection on unstructured grids. *Journal of Computational Physics*, **2017**, 350, 387-419	4.1	18
83	Algebraic disturbance growth by interaction of Orr and lift-up mechanisms. *Journal of Fluid Mechanics*, **2017**, 829, 112-126	3.7	16
82	Large-Eddy Simulation of Thermally Stratified Atmospheric Boundary-Layer Flow Using a Minimum Dissipation Model. *Boundary-Layer Meteorology*, **2017**, 165, 405-419	3.4	23
81	Transitional-turbulent spots and turbulent-turbulent spots in boundary layers. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, E5292-E5299	11.5	57
80	A simple dynamic subgrid-scale model for LES of particle-laden turbulence. *Physical Review Fluids*, **2017**, 2,	2.8	26
79	Extraction of coherent clusters and grid adaptation in particle-laden turbulence using wavelet filters. *Physical Review Fluids*, **2017**, 2,	2.8	8
78	Log-layer mismatch and modeling of the fluctuating wall stress in wall-modeled large-eddy simulations. *Physical Review Fluids*, **2017**, 2,	2.8	57
77	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	4.1	28
76	Space-time characteristics of wall-pressure and wall shear-stress fluctuations in wall-modeled large eddy simulation. *Physical Review Fluids*, **2016**, 1,	2.8	24
75	Minimum-dissipation scalar transport model for large-eddy simulation of turbulent flows. *Physical Review Fluids*, **2016**, 1,	2.8	34
74	Direct numerical simulation of a turbulent hydraulic jump: turbulence statistics and air entrainment. *Journal of Fluid Mechanics*, **2016**, 797, 60-94	3.7	41
73	Constant-energetics physical-space forcing methods for improved convergence to homogeneous-isotropic turbulence with application to particle-laden flows. *Physics of Fluids*, **2016**, 28, 035114	4.4	25
72	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, 7920-4	11.5	33
71	Accurate interface normal and curvature estimates on three-dimensional unstructured non-convex polyhedral meshes. *Journal of Computational Physics*, **2015**, 300, 365-386	4.1	25

70	Minimum-dissipation models for large-eddy simulation. *Physics of Fluids*, **2015**, 27, 085107	4.4	75
69	An improved dynamic non-equilibrium wall-model for large eddy simulation. *Physics of Fluids*, **2014**, 26, 015108	4.4	99
68	Reduced-order representation of near-wall structures in the late transitional boundary layer. *Journal of Fluid Mechanics*, **2014**, 748, 278-301	3.7	49
67	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	3.7	108
66	Large eddy simulation of high-lift devices **2013**,		20
65	Grid-point requirements for large eddy simulation: Chapman estimates revisited. *Physics of Fluids*, **2012**, 24, 011702	4.4	293
64	Large eddy simulation of controlled transition to turbulence. *Physics of Fluids*, **2012**, 24, 114103	4.4	45
63	Boundary layer turbulence in transitional and developed states. *Physics of Fluids*, **2012**, 24, 035105	4.4	22
62	Unstructured Large Eddy Simulation for Prediction of Noise Issued from Turbulent Jets in Various Configurations **2011**,		63
61	Grid-independent large-eddy simulation using explicit filtering. *Physics of Fluids*, **2010**, 22, 105103	4.4	88
60	Large-activation-energy theory for premixed combustion under the influence of enthalpy fluctuations. *Journal of Fluid Mechanics*, **2010**, 655, 3-37	3.7	7
59	Transitional and turbulent boundary layer with heat transfer. *Physics of Fluids*, **2010**, 22, 085105	4.4	92
58	An adaptive implicit–explicit scheme for the DNS and LES of compressible flows on unstructured grids. *Journal of Computational Physics*, **2010**, 229, 5944-5965	4.1	31
57	Suitability of artificial bulk viscosity for large-eddy simulation of turbulent flows with shocks. *Journal of Computational Physics*, **2009**, 228, 7368-7374	4.1	75
56	Direct numerical simulation of turbulence in a nominally zero-pressure-gradient flat-plate boundary layer. *Journal of Fluid Mechanics*, **2009**, 630, 5-41	3.7	363
55	Computational study of optical distortions by separated shear layers and turbulent wakes. *Journal of Fluid Mechanics*, **2009**, 625, 273-298	3.7	46
54	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	4.4	
53	A direct numerical simulation study on the mean velocity characteristics in turbulent pipe flow. *Journal of Fluid Mechanics*, **2008**, 608, 81-112	3.7	267

52	Trailing-edge noise reduction using derivative-free optimization and large-eddy simulation. *Journal of Fluid Mechanics*, **2007**, 572, 13-36	3.7	77
51	Direct numerical simulation of polymer-induced drag reduction in turbulent boundary layer flow of inhomogeneous polymer solutions. *Journal of Fluid Mechanics*, **2006**, 566, 153	3.7	40
50	Computational study on the internal layer in a diffuser. *Journal of Fluid Mechanics*, **2006**, 550, 391	3.7	26
49	Direct numerical simulation of polymer-induced drag reduction in turbulent boundary layer flow. *Physics of Fluids*, **2005**, 17, 011705	4.4	77
48	An experimental and numerical investigation of drag reduction in a turbulent boundary layer using a rigid rodlike polymer. *Physics of Fluids*, **2005**, 17, 085101	4.4	37
47	Suppression of vortex-shedding noise via derivative-free shape optimization. *Physics of Fluids*, **2004**, 16, L83-L86	4.4	28
46	Optimal Aeroacoustic Shape Design Using the Surrogate Management Framework. *Optimization and Engineering*, **2004**, 5, 235-262	2.1	89
45	Higher entropy conservation and numerical stability of compressible turbulence simulations. *Journal of Computational Physics*, **2004**, 201, 531-545	4.1	145
44	Numerical simulation of turbulent drag reduction using rigid fibres. *Journal of Fluid Mechanics*, **2004** , 518, 281-317	3.7	74
43	On the coherent drag-reducing and turbulence-enhancing behaviour of polymers in wall flows. *Journal of Fluid Mechanics*, **2004**, 514, 271-280	3.7	193
42	Progress-variable approach for large-eddy simulation of non-premixed turbulent combustion. *Journal of Fluid Mechanics*, **2004**, 504, 73-97	3.7	771
41	A further study of numerical errors in large-eddy simulations. *Journal of Computational Physics*, **2003**, 184, 366-380	4.1	166
40	Construction of Commutative Filters for LES on Unstructured Meshes. *Journal of Computational Physics*, **2002**, 175, 584-603	4.1	58
39	A Semi-implicit Method for Resolution of Acoustic Waves in Low Mach Number Flows. *Journal of Computational Physics*, **2002**, 181, 545-563	4.1	66
38	Dynamic wall modeling for large-eddy simulation of complex turbulent flows. *Physics of Fluids*, **2002** , 14, 2043	4.4	218
37	Numerical studies of flow over a circular cylinder at ReD=3900. *Physics of Fluids*, **2000**, 12, 403-417	4.4	456
36	Direct computation of the sound generated by vortex pairing in an axisymmetric jet. *Journal of Fluid Mechanics*, **1999**, 383, 113-142	3.7	138
35	Sound generation in a mixing layer. *Journal of Fluid Mechanics*, **1997**, 330, 375-409	3.7	290

34	Suitability of Upwind-Biased Finite Difference Schemes for Large-Eddy Simulation of Turbulent Flows. *AIAA Journal*, **1997**, 35, 1415-1417	2.1	280
33	Direct numerical simulation of turbulent flow over a backward-facing step. *Journal of Fluid Mechanics*, **1997**, 330, 349-374	3.7	724
32	Large-eddy simulation of turbulent confined coannular jets. *Journal of Fluid Mechanics*, **1996**, 315, 387-411	3.7	267
31	An Efficient Method for Temporal Integration of the Navier-Stokes Equations in Confined Axisymmetric Geometries. *Journal of Computational Physics*, **1996**, 125, 454-463	4.1	82
30	The interaction of an isotropic field of acoustic waves with a shock wave. *Journal of Fluid Mechanics*, **1995**, 300, 383-407	3.7	87
29	Shear-free turbulent boundary layers. Part 1. Physical insights into near-wall turbulence. *Journal of Fluid Mechanics*, **1995**, 295, 199	3.7	174
28	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	3.7	24
27	A dynamic localization model for large-eddy simulation of turbulent flows. *Journal of Fluid Mechanics*, **1995**, 286, 229-255	3.7	551
26	Direct computation of the sound from a compressible co-rotating vortex pair. *Journal of Fluid Mechanics*, **1995**, 285, 181	3.7	131
25	Feedback Control of Turbulence. *Applied Mechanics Reviews*, **1994**, 47, S3-S13	8.6	94
24	Effects of the Computational Time Step on Numerical Solutions of Turbulent Flow. *Journal of Computational Physics*, **1994**, 113, 1-4	4.1	402
23	The scattering of sound waves by a vortex: numerical simulations and analytical solutions. *Journal of Fluid Mechanics*, **1994**, 260, 271-298	3.7	108
22	The response of anisotropic turbulence to rapid homogeneous one-dimensional compression. *Physics of Fluids*, **1994**, 6, 1052-1062	4.4	14
21	Direct numerical simulation of isotropic turbulence interacting with a weak shock wave. *Journal of Fluid Mechanics*, **1993**, 251, 533-562	3.7	211
20	On the relation of near-wall streamwise vortices to wall skin friction in turbulent boundary layers. *Physics of Fluids A, Fluid Dynamics*, **1993**, 5, 3307-3309		140
19	Simulation of spatially evolving turbulence and the applicability of Taylor's hypothesis in compressible flow. *Physics of Fluids A, Fluid Dynamics*, **1992**, 4, 1521-1530		204
18	An improvement of fractional step methods for the incompressible Navier-Stokes equations. *Journal of Computational Physics*, **1991**, 92, 369-379	4.1	174
17	A dynamic subgrid-scale eddy viscosity model. *Physics of Fluids A, Fluid Dynamics*, **1991**, 3, 1760-1765		4447

16	The minimal flow unit in near-wall turbulence. *Journal of Fluid Mechanics*, **1991**, 225, 213-240	3.7	706
15	The free compressible viscous vortex. *Journal of Fluid Mechanics*, **1991**, 230, 45-73	3.7	57
14	Eddy shocklets in decaying compressible turbulence. *Physics of Fluids A, Fluid Dynamics*, **1991**, 3, 657-664		163
13	On the space-time characteristics of wall-pressure fluctuations. *Physics of Fluids A, Fluid Dynamics*, **1990**, 2, 1450-1460		132
12	The structure of two-dimensional separation. *Journal of Fluid Mechanics*, **1990**, 220, 397-411	3.7	289
11	Characteristic-eddy decomposition of turbulence in a channel. *Journal of Fluid Mechanics*, **1989**, 200, 471-509	3.7	309
10	New approximate boundary conditions for large eddy simulations of wall-bounded flows. *Physics of Fluids A, Fluid Dynamics*, **1989**, 1, 1061-1068		207
9	Stochastic estimation of organized turbulent structure: homogeneous shear flow. *Journal of Fluid Mechanics*, **1988**, 190, 531-559	3.7	229
8	Helicity fluctuations in incompressible turbulent flows. *Physics of Fluids*, **1987**, 30, 2662-2671		60
7	The structure of the vorticity field in homogeneous turbulent flows. *Journal of Fluid Mechanics*, **1987**, 176, 33	3.7	264
6	Turbulence statistics in fully developed channel flow at low Reynolds number. *Journal of Fluid Mechanics*, **1987**, 177, 133-166	3.7	3384
5	The structure of the vorticity field in turbulent channel flow. Part 2. Study of ensemble-averaged fields. *Journal of Fluid Mechanics*, **1986**, 162, 339	3.7	128
4	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	3.7	193
3	Numerical investigation of turbulent channel flow. *Journal of Fluid Mechanics*, **1982**, 118, 341	3.7	850
2	Performance of Wall-Modeled LES with Boundary-Layer-Conforming Grids for External Aerodynamics. *AIAA Journal*,1-20	2.1	2
1	Prediction of aerothermal characteristics of a generic hypersonic inlet flow. *Theoretical and Computational Fluid Dynamics*,1	2.3	1