Robert D Moser

List of Publications by Year
in descending order

89 papers	14,401 citations	109137 35 h-index	66788 78 g-index
90 all docs	90 docs citations	90 times ranked	4958 citing authors

#	Article	IF	Citations
1	Turbulence statistics in fully developed channel flow at low Reynolds number. Journal of Fluid Mechanics, 1987, 177, 133-166.	1.4	4,099
2	Direct numerical simulation of turbulent channel flow up to ReÏ„=590. Physics of Fluids, 1999, 11, 943-945.	1.6	2,184
3	Direct numerical simulation of turbulent channel flow up to. Journal of Fluid Mechanics, 2015, 774, 395-415.	1.4	899
4	Scaling of the energy spectra of turbulent channels. Journal of Fluid Mechanics, 2004, 500, 135-144.	1.4	574
5	Spectral methods for the Navier-Stokes equations with one infinite and two periodic directions. Journal of Computational Physics, 1991, 96, 297-324.	1.9	549
6	A numerical study of turbulent supersonic isothermal-wall channel flow. Journal of Fluid Mechanics, 1995, 305, 159-183.	1.4	410
7	Direct simulation of a selfâ€similar turbulent mixing layer. Physics of Fluids, 1994, 6, 903-923.	1.6	387
8	Characteristic-eddy decomposition of turbulence in a channel. Journal of Fluid Mechanics, 1989, 200, 471-509.	1.4	364
9	Patient-specific isogeometric fluidâ€“structure interaction analysis of thoracic aortic blood flow due to implantation of the Jarvik 2000 left ventricular assist device. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 3534-3550.	3.4	347
10	Self-similar vortex clusters in the turbulent logarithmic region. Journal of Fluid Mechanics, 2006, 561, 329.	1.4	312
11	One-point statistics for turbulent wall-bounded flows at Reynolds numbers up to Î´+ â‰ˆ 2000. Physics of Fluids, 2013, 25, .	1.6	311
12	Direct numerical simulation of a supersonic turbulent boundary layer at Mach 2.5. Journal of Fluid Mechanics, 2000, 414, 1-33.	1.4	303
13	The three-dimensional evolution of a plane mixing layer: the Kelvinâ€“Helmholtz rollup. Journal of Fluid Mechanics, 1992, 243, 183.	1.4	298
14	The three-dimensional evolution of a plane mixing layer: pairing and transition to turbulence. Journal of Fluid Mechanics, 1993, 247, 275-320.	1.4	282
15	The effects of curvature in wall-bounded turbulent flows. Journal of Fluid Mechanics, 1987, 175, 479.	1.4	204
16	Bayesian uncertainty analysis with applications to turbulence modeling. Reliability Engineering and System Safety, 2011, 96, 1137-1149.	5.1	193
17	Two-point statistics for turbulent boundary layers and channels at Reynolds numbers up to Î´+ â‰ˆ 2000. Physics of Fluids, 2014, 26, .	1.6	190
18	Optimal LES formulations for isotropic turbulence. Journal of Fluid Mechanics, 1999, 398, 321-346.	1.4	176

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19	A spectral numerical method for the Navier-Stokes equations with applications to Taylor-Couette flow. Journal of Computational Physics, 1983, 52, 524-544.	1.9	161
20	Zonal Embedded Grids for Numerical Simulations of Wall-Bounded Turbulent Flows. Journal of Computational Physics, 1996, 127, 412-423.	1.9	160
21	A Web services accessible database of turbulent channel flow and its use for testing a new integral wall model for LES. Journal of Turbulence, 2016, 17, 181-215.	0.5	135
22	A fixed-mesh method for incompressible flowâ€“structure systems with finite solid deformations. Journal of Computational Physics, 2008, 227, 3114-3140.	1.9	133
23	Mixing transition and the cascade to small scales in a plane mixing layer. Physics of Fluids A, Fluid Dynamics, 1991, 3, 1128-1134.	1.6	128
24	Estimating uncertainties in statistics computed from direct numerical simulation. Physics of Fluids, 2014, 26, .	1.6	104
25	Spectral analysis of the budget equation in turbulent channel flows at high ReynoldsÂnumber. Journal of Fluid Mechanics, 2019, 860, 886-938.	1.4	102
26	Self-similarity of time-evolving plane wakes. Journal of Fluid Mechanics, 1998, 367, 255-289.	1.4	97
27	Bayesian uncertainty quantification applied to RANS turbulence models. Journal of Physics: Conference Series, 2011, 318, 042032.	0.3	78
28	What are we learning from simulating wall turbulence?. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2007, 365, 715-732.	1.6	76
29	Extreme-scale motions in turbulent plane Couette flows. Journal of Fluid Mechanics, 2018, 842, 128-145.	1.4	64
30	Statistical Properties of Subgrid-Scale Turbulence Models. Annual Review of Fluid Mechanics, 2021, 53, 255-286.	10.8	58
31	Compressible Wall-Injection Flows in Laminar, Transitional, and Turbulent Regimes: Numerical Prediction. Journal of Spacecraft and Rockets, 2004, 41, 915-924.	1.3	57
32	Validating predictions of unobserved quantities. Computer Methods in Applied Mechanics and Engineering, 2015, 283, 1310-1335.	3.4	50
33	A Critical Evaluation of the Resolution Properties of B-Spline and Compact Finite Difference Methods. Journal of Computational Physics, 2001, 174, 510-551.	1.9	49
34	Short-time Lyapunov exponent analysis and the transition to chaos in Taylorâ€“Couette flow. Journal of Fluid Mechanics, 1991, 233, 83-118.	1.4	45
35	Petascale direct numerical simulation of turbulent channel flow on up to 786K cores. , 2013, , .		45
36	Spanwise scale selection in plane mixing layers. Journal of Fluid Mechanics, 1993, 247, 321-337.	1.4	42

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37	The evolution of a plane mixing layer with spanwise nonuniform forcing. Physics of Fluids, 1994, 6, 381-396.	1.6	34
38	Finite-volume optimal large-eddy simulation of isotropic turbulence. Physics of Fluids, 2004, 16, 2255-2271.	1.6	34
39	Direct numerical simulation of turbulence in injection-driven plane channel flows. Physics of Fluids, 2008, 20, .	1.6	34
40	A discontinuous Petrovâ€“Galerkin methodology for adaptive solutions to the incompressible Navierâ€“Stokes equations. Journal of Computational Physics, 2015, 301, 456-483.	1.9	33
41	Scaling of Lyapunov exponents in homogeneous isotropic turbulence. Physical Review Fluids, 2017, 2, .	1.0	33
42	A DPG method for steady viscous compressible flow. Computers and Fluids, 2014, 98, 69-90.	1.3	32
43	Large eddy simulation of compressible, shaped-hole film cooling. International Journal of Heat and Mass Transfer, 2019, 140, 498-517.	2.5	32
44	Large-eddy simulations - Where are we and what can we expect?. AIAA Journal, 2000, 38, 605-612.	1.5	30
45	Kolmogorov inertial range spectra for inhomogeneous turbulence. Physics of Fluids, 1994, 6, 794-801.	1.6	28
46	Two-Dimensional Mesh Embedding for B-spline Methods. Journal of Computational Physics, 1998, 145, 471-488.	1.9	28
47	Optimal large-eddy simulation of forced Burgers equation. Physics of Fluids, 2002, 14, 4344-4351.	1.6	28
48	Experiences from Leadership Computing in Simulations of Turbulent Fluid Flows. Computing in Science and Engineering, 2014, 16, 24-31.	1.2	27
49	Representing Model Inadequacy: A Stochastic Operator Approach. SIAM-ASA Journal on Uncertainty Quantification, 2018, 6, 457-496.	1.1	27
50	Theoretically based optimal large-eddy simulation. Physics of Fluids, 2009, 21, .	1.6	26
51	Simulation Strategy of Turbulent Internal Flow in Solid Rocket Motor. Journal of Propulsion and Power, 2005, 21, 251-263.	1.3	22
52	Correlation of pressure fluctuations in turbulent wall layers. Physical Review Fluids, 2017, 2, .	1.0	21
53	On the secondary instability in plane Poiseuille flow. Physics of Fluids A, Fluid Dynamics, 1989, 1, 775-777.	1.6	19
54	Optimal large-eddy simulation results for isotropic turbulence. Journal of Fluid Mechanics, 2004, 521, 273-294.	1.4	18

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55	Resolution-induced anisotropy in large-eddy simulations. Physical Review Fluids, 2019, 4, .	1.0	18
56	Relative Periodic Solutions of the Complex Ginzburg--Landau Equation. SIAM Journal on Applied Dynamical Systems, 2005, 4, 1042-1075.	0.7	14
57	Validity of quasinormal approximation in turbulent channel flow. Physics of Fluids, 2005, 17, 055106.	1.6	12
58	Two-point similarity in temporally evolving plane wakes. Journal of Fluid Mechanics, 2007, 577, 287-307.	1.4	12
59	Effects of Trailing-Edge Synthetic Jet Actuation on an Airfoil. AIAA Journal, 2011, 49, 1763-1777.	1.5	12
60	Accounting for uncertainty in the analysis of overlap layer mean velocity models. Physics of Fluids, 2012, 24, .	1.6	12
61	Probabilistic Approach to NASA Langley Research Center Multidisciplinary Uncertainty Quantification Challenge Problem. Journal of Aerospace Information Systems, 2015, 12, 170-188.	1.0	12
62	Implicit LES for Shaped-Hole Film Cooling Flow. , 2017, , .		12
63	Breakdown of continuity in large-eddy simulation. Physics of Fluids, 2001, 13, 1524-1527.	1.6	11
64	Representing anisotropy of two-point second-order turbulence velocity correlations using structure tensors. Physics of Fluids, 2008, 20, .	1.6	10
65	A filtered-wall formulation for large-eddy simulation of wall-bounded turbulence. Physics of Fluids, 2008, 20, .	1.6	9
66	Direct simulation of a zero-pressure-gradient turbulent boundary layer up toRe_{Î¸}= 6650. Journal of Physics: Conference Series, 2011, 318, 022023.	0.3	9
67	Simulation of Rapidly Maneuvering Airfoils with Synthetic Jet Actuators. AIAA Journal, 2013, 51, 1883-1897.	1.5	9
68	Effects of resolution inhomogeneity in large-eddy simulation. Physical Review Fluids, 2021, 6, .	1.0	9
69	On the validity of the continuum approximation in high Reynolds number turbulence. Physics of Fluids, 2006, 18, 078105.	1.6	8
70	Near-wall patch representation of wall-bounded turbulence. Journal of Fluid Mechanics, 2020, 903, .	1.4	8
71	Bayesian Inference of Fire Evolution Within a Compartment Using Heat Flux Measurements. Fire Technology, 2021, 57, 2887-2903.	1.5	7
72	Active model split hybrid RANS/LES. Physical Review Fluids, 2022, 7, .	1.0	7

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73	An inertial range model for the three-point third-order velocity correlation. Physics of Fluids, 2007, 19, 105111.	1.6	4
74	Towards a Predictive Hybrid RANS/LES Framework. , 2019, , .		4
75	Numerical dispersion effects on the energy cascade in large-eddy simulation. Physical Review Fluids, 2021, 6, .	1.0	4
76	The Parallel C++ Statistical Library for Bayesian Inference: QUESO. , 2017, , 1829-1865.		4
77	Temporal slow-growth formulation for direct numerical simulation of compressible wall-bounded flows. Physical Review Fluids, 2017, 2, .	1.0	4
78	The Numerical Decomposition of Turbulent Fluctuations in a Compressible Boundary Layer. Theoretical and Computational Fluid Dynamics, 2001, 15, 35-63.	0.9	3
79	[illegible] LaTeX.tdl!TeX -- AMS-LaTeX! % MathType!MTEF!2!1!+- % feaaeaart1ev0aaatCvAUfeBSjuyZL2yd9gzLbvyNv2CaerbbjxAHX % garmWu51MyVXgatuuDJXwAK1uy0HwmaeHbfv3ySLgzG0uy0Hgip5wz % aebbnrfifHhDYfgasaacH8qrps0lbbf9q8WrFfeuY-Hhbbf9v8qqaq % [illegible]	1.4	3
80	Hybrid OpenMP-MPI Turbulent Boundary Layer Code Over 32k Cores. Lecture Notes in Computer Science, 2011, , 218-227.	1.0	3
81	Coherent structures in a simulated turbulent mixing layer. Fluid Mechanics and Its Applications, 1993, , 415-428.	0.1	3
82	Numerical Study of Impulse Actuation for Stall Control. , 2011, , .		2
83	Conservative integral form of the incompressible Navierâ€“Stokes equations for a rapidly pitching airfoil. Journal of Computational Physics, 2012, 231, 6268-6289.	1.9	1
84	Filtering the Wall as a Solution to the Wall-Modeling Problem. , 2007, , 117-126.		1
85	Special issue on large-eddy simulation of complex flows. Theoretical and Computational Fluid Dynamics, 2008, 22, 155-155.	0.9	0
86	Validation of Physical Models in the Presence of Uncertainty. , 2015, , 1-28.		0
87	Modeling Multi-point Correlations inÂWall-Bounded Turbulence. ERCOFTAC Series, 2011, , 29-37.	0.1	0
88	Validation of Physical Models in the Presence of Uncertainty. , 2017, , 129-156.		0
89	An Active Model-Split for Hybrid RANS/LES of Compressible Flows. , 2022, , .		0