Robert D Moser

List of Publications by Year
in descending order

89 papers	14,401 citations	109321 35 h-index	66911 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.	3.4	4,099
2	Direct numerical simulation of turbulent channel flow up to Re_τ=590. Physics of Fluids, 1999, 11, 943-945.	4.0	2,184
3	Direct numerical simulation of turbulent channel flow up to. Journal of Fluid Mechanics, 2015, 774, 395-415.	3.4	899
4	Scaling of the energy spectra of turbulent channels. Journal of Fluid Mechanics, 2004, 500, 135-144.	3.4	574
5	Spectral methods for the Navier-Stokes equations with one infinite and two periodic directions. Journal of Computational Physics, 1991, 96, 297-324.	3.8	549
6	A numerical study of turbulent supersonic isothermal-wall channel flow. Journal of Fluid Mechanics, 1995, 305, 159-183.	3.4	410
7	Direct simulation of a self–similar turbulent mixing layer. Physics of Fluids, 1994, 6, 903-923.	4.0	387
8	Characteristic-eddy decomposition of turbulence in a channel. Journal of Fluid Mechanics, 1989, 200, 471-509.	3.4	364
9	Patient-specific isogeometric fluid–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.	6.6	347
10	Self-similar vortex clusters in the turbulent logarithmic region. Journal of Fluid Mechanics, 2006, 561, 329.	3.4	312
11	One-point statistics for turbulent wall-bounded flows at Reynolds numbers up to $\tau \approx$ 2000. Physics of Fluids, 2013, 25, .	4.0	311
12	Direct numerical simulation of a supersonic turbulent boundary layer at Mach 2.5. Journal of Fluid Mechanics, 2000, 414, 1-33.	3.4	303
13	The three-dimensional evolution of a plane mixing layer: the Kelvin–Helmholtz rollup. Journal of Fluid Mechanics, 1992, 243, 183.	3.4	298
14	The three-dimensional evolution of a plane mixing layer: pairing and transition to turbulence. Journal of Fluid Mechanics, 1993, 247, 275-320.	3.4	282
15	The effects of curvature in wall-bounded turbulent flows. Journal of Fluid Mechanics, 1987, 175, 479.	3.4	204
16	Bayesian uncertainty analysis with applications to turbulence modeling. Reliability Engineering and System Safety, 2011, 96, 1137-1149.	8.9	193
17	Two-point statistics for turbulent boundary layers and channels at Reynolds numbers up to $\tau \approx$ 2000. Physics of Fluids, 2014, 26, .	4.0	190
18	Optimal LES formulations for isotropic turbulence. Journal of Fluid Mechanics, 1999, 398, 321-346.	3.4	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.	3.8	161
20	Zonal Embedded Grids for Numerical Simulations of Wall-Bounded Turbulent Flows. Journal of Computational Physics, 1996, 127, 412-423.	3.8	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.	1.4	135
22	A fixed-mesh method for incompressible flow–structure systems with finite solid deformations. Journal of Computational Physics, 2008, 227, 3114-3140.	3.8	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, .	4.0	104
25	Spectral analysis of the budget equation in turbulent channel flows at high Reynolds number. Journal of Fluid Mechanics, 2019, 860, 886-938.	3.4	102
26	Self-similarity of time-evolving plane wakes. Journal of Fluid Mechanics, 1998, 367, 255-289.	3.4	97
27	Bayesian uncertainty quantification applied to RANS turbulence models. Journal of Physics: Conference Series, 2011, 318, 042032.	0.4	78
28	What are we learning from simulating wall turbulence?. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2007, 365, 715-732.	3.4	76
29	Extreme-scale motions in turbulent plane Couette flows. Journal of Fluid Mechanics, 2018, 842, 128-145.	3.4	64
30	Statistical Properties of Subgrid-Scale Turbulence Models. Annual Review of Fluid Mechanics, 2021, 53, 255-286.	25.0	58
31	Compressible Wall-Injection Flows in Laminar, Transitional, and Turbulent Regimes: Numerical Prediction. Journal of Spacecraft and Rockets, 2004, 41, 915-924.	1.9	57
32	Validating predictions of unobserved quantities. Computer Methods in Applied Mechanics and Engineering, 2015, 283, 1310-1335.	6.6	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.	3.8	49
34	Short-time Lyapunov exponent analysis and the transition to chaos in Taylor–Couette flow. Journal of Fluid Mechanics, 1991, 233, 83-118.	3.4	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.	3.4	42

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37	The evolution of a plane mixing layer with spanwise nonuniform forcing. Physics of Fluids, 1994, 6, 381-396.	4.0	34
38	Finite-volume optimal large-eddy simulation of isotropic turbulence. Physics of Fluids, 2004, 16, 2255-2271.	4.0	34
39	Direct numerical simulation of turbulence in injection-driven plane channel flows. Physics of Fluids, 2008, 20, .	4.0	34
40	A discontinuous Petrovâ€"Galerkin methodology for adaptive solutions to the incompressible Navierâ€"Stokes equations. Journal of Computational Physics, 2015, 301, 456-483.	3.8	33
41	Scaling of Lyapunov exponents in homogeneous isotropic turbulence. Physical Review Fluids, 2017, 2, .	2.5	33
42	A DPG method for steady viscous compressible flow. Computers and Fluids, 2014, 98, 69-90.	2.5	32
43	Large eddy simulation of compressible, shaped-hole film cooling. International Journal of Heat and Mass Transfer, 2019, 140, 498-517.	4.8	32
44	Large-eddy simulations - Where are we and what can we expect?. AIAA Journal, 2000, 38, 605-612.	2.6	30
45	Kolmogorov inertial range spectra for inhomogeneous turbulence. Physics of Fluids, 1994, 6, 794-801.	4.0	28
46	Two-Dimensional Mesh Embedding for B-spline Methods. Journal of Computational Physics, 1998, 145, 471-488.	3.8	28
47	Optimal large-eddy simulation of forced Burgers equation. Physics of Fluids, 2002, 14, 4344-4351.	4.0	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.	2.0	27
50	Theoretically based optimal large-eddy simulation. Physics of Fluids, 2009, 21, .	4.0	26
51	Simulation Strategy of Turbulent Internal Flow in Solid Rocket Motor. Journal of Propulsion and Power, 2005, 21, 251-263.	2.2	22
52	Correlation of pressure fluctuations in turbulent wall layers. Physical Review Fluids, 2017, 2, .	2.5	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.	3.4	18

#	ARTICLE	IF	CITATIONS
55	Resolution-induced anisotropy in large-eddy simulations. Physical Review Fluids, 2019, 4, .	2.5	18
56	Relative Periodic Solutions of the Complex Ginzburg--Landau Equation. SIAM Journal on Applied Dynamical Systems, 2005, 4, 1042-1075.	1.6	14
57	Validity of quasinormal approximation in turbulent channel flow. Physics of Fluids, 2005, 17, 055106.	4.0	12
58	Two-point similarity in temporally evolving plane wakes. Journal of Fluid Mechanics, 2007, 577, 287-307.	3.4	12
59	Effects of Trailing-Edge Synthetic Jet Actuation on an Airfoil. AIAA Journal, 2011, 49, 1763-1777.	2.6	12
60	Accounting for uncertainty in the analysis of overlap layer mean velocity models. Physics of Fluids, 2012, 24, .	4.0	12
61	Probabilistic Approach to NASA Langley Research Center Multidisciplinary Uncertainty Quantification Challenge Problem. Journal of Aerospace Information Systems, 2015, 12, 170-188.	1.4	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.	4.0	11
64	Representing anisotropy of two-point second-order turbulence velocity correlations using structure tensors. Physics of Fluids, 2008, 20, .	4.0	10
65	A filtered-wall formulation for large-eddy simulation of wall-bounded turbulence. Physics of Fluids, 2008, 20, .	4.0	9
66	Direct simulation of a zero-pressure-gradient turbulent boundary layer up to Re_θ = 6650. Journal of Physics: Conference Series, 2011, 318, 022023.	0.4	9
67	Simulation of Rapidly Maneuvering Airfoils with Synthetic Jet Actuators. AIAA Journal, 2013, 51, 1883-1897.	2.6	9
68	Effects of resolution inhomogeneity in large-eddy simulation. Physical Review Fluids, 2021, 6, .	2.5	9
69	On the validity of the continuum approximation in high Reynolds number turbulence. Physics of Fluids, 2006, 18, 078105.	4.0	8
70	Near-wall patch representation of wall-bounded turbulence. Journal of Fluid Mechanics, 2020, 903, .	3.4	8
71	Bayesian Inference of Fire Evolution Within a Compartment Using Heat Flux Measurements. Fire Technology, 2021, 57, 2887-2903.	3.0	7
72	Active model split hybrid RANS/LES. Physical Review Fluids, 2022, 7, .	2.5	7

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73	An inertial range model for the three-point third-order velocity correlation. Physics of Fluids, 2007, 19, 105111.	4.0	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, .	2.5	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, .	2.5	4
78	The Numerical Decomposition of Turbulent Fluctuations in a Compressible Boundary Layer. Theoretical and Computational Fluid Dynamics, 2001, 15, 35-63.	2.2	3
79	% HTML blbaaaahha7naaaCrFfeaabaaiaaqceiLbGaat % MathTypeTranslator!2!1!AMS LaTeX.tdl!TeX -- AMS-LaTeX! % MathType!MTEF!2!1!+- % feaaeaart1ev0aaatCvAUfeBSjuyZL2yd9gzLbvyNv2CaerbbjxAHX % garmWu51MyVXgatuuDJXwAK1uy0HwmaeHbfv3ySLgzG0uy0Hgip5wz % aebbnrfifHhDYfgasaacH8qrps0lbbf9q8WrFfeuY-Hhbbf9v8qqaq % Fr0xc9pk0xbba9q8WqFfea0-yr0RYxir-Jbba9q8aq0-yq-He9q8qq % Q8Frv8Fv9rdmrRimrRG7C7wraw	2.6	3
80	Hybrid OpenMP-MPI Turbulent Boundary Layer Code Over 32k Cores. Lecture Notes in Computer Science, 2011, , 218-227.	1.3	3
81	Coherent structures in a simulated turbulent mixing layer. Fluid Mechanics and Its Applications, 1993, , 415-428.	0.2	3
82	Numerical Study of Impulse Actuation for Stall Control. , 2011, , .		2
83	Conservative integral form of the incompressible Navier–Stokes equations for a rapidly pitching airfoil. Journal of Computational Physics, 2012, 231, 6268-6289.	3.8	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.	2.2	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