Robert D Moser

List of Publications by Citations

86 papers	11,424 citations	34 h-index	90 g-index
90 ext. papers	12,925 ext. citations	3.6 avg, IF	6.41 L-index

#	Paper	IF	Citations
86	Turbulence statistics in fully developed channel flow at low Reynolds number. *Journal of Fluid Mechanics*, **1987**, 177, 133-166	3.7	3384
85	Direct numerical simulation of turbulent channel flow up to Re□590. *Physics of Fluids*, **1999**, 11, 943-945	4.4	1811
84	Direct numerical simulation of turbulent channel flow up to. *Journal of Fluid Mechanics*, **2015**, 774, 395-415	3.7	557
83	Scaling of the energy spectra of turbulent channels. *Journal of Fluid Mechanics*, **2004**, 500, 135-144	3.7	463
82	Spectral methods for the Navier-Stokes equations with one infinite and two periodic directions. *Journal of Computational Physics*, **1991**, 96, 297-324	4.1	458
81	Direct simulation of a self-similar turbulent mixing layer. *Physics of Fluids*, **1994**, 6, 903-923	4.4	327
80	Characteristic-eddy decomposition of turbulence in a channel. *Journal of Fluid Mechanics*, **1989**, 200, 471-509	3.7	309
79	Patient-specific isogeometric fluid□tructure 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	5.7	299
78	A numerical study of turbulent supersonic isothermal-wall channel flow. *Journal of Fluid Mechanics*, **1995**, 305, 159-183	3.7	291
77	Self-similar vortex clusters in the turbulent logarithmic region. *Journal of Fluid Mechanics*, **2006**, 561, 329	3.7	261
76	The three-dimensional evolution of a plane mixing layer: the Kelvin□elmholtz rollup. *Journal of Fluid Mechanics*, **1992**, 243, 183	3.7	256
75	The three-dimensional evolution of a plane mixing layer: pairing and transition to turbulence. *Journal of Fluid Mechanics*, **1993**, 247, 275-320	3.7	238
74	One-point statistics for turbulent wall-bounded flows at Reynolds numbers up to □□2000. *Physics of Fluids*, **2013**, 25, 105102	4.4	230
73	Direct numerical simulation of a supersonic turbulent boundary layer at Mach 2.5. *Journal of Fluid Mechanics*, **2000**, 414, 1-33	3.7	221
72	The effects of curvature in wall-bounded turbulent flows. *Journal of Fluid Mechanics*, **1987**, 175, 479	3.7	163
71	Bayesian uncertainty analysis with applications to turbulence modeling. *Reliability Engineering and System Safety*, **2011**, 96, 1137-1149	6.3	150
70	Optimal LES formulations for isotropic turbulence. *Journal of Fluid Mechanics*, **1999**, 398, 321-346	3.7	146

69	A spectral numerical method for the Navier-Stokes equations with applications to Taylor-Couette flow. *Journal of Computational Physics*, **1983**, 52, 524-544	4.1	146
68	Zonal Embedded Grids for Numerical Simulations of Wall-Bounded Turbulent Flows. *Journal of Computational Physics*, **1996**, 127, 412-423	4.1	140
67	Two-point statistics for turbulent boundary layers and channels at Reynolds numbers up to 2000. *Physics of Fluids*, **2014**, 26, 105109	4.4	128
66	A fixed-mesh method for incompressible flow-structure systems with finite solid deformations. *Journal of Computational Physics*, **2008**, 227, 3114-3140	4.1	113
65	Mixing transition and the cascade to small scales in a plane mixing layer. *Physics of Fluids A, Fluid Dynamics*, **1991**, 3, 1128-1134		103
64	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	2.1	86
63	Self-similarity of time-evolving plane wakes. *Journal of Fluid Mechanics*, **1998**, 367, 255-289	3.7	81
62	Estimating uncertainties in statistics computed from direct numerical simulation. *Physics of Fluids*, **2014**, 26, 035101	4.4	73
61	What are we learning from simulating wall turbulence?. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2007**, 365, 715-32	3	59
60	Bayesian uncertainty quantification applied to RANS turbulence models. *Journal of Physics: Conference Series*, **2011**, 318, 042032	0.3	54
59	Spectral analysis of the budget equation in turbulent channel flows at high Reynolds number. *Journal of Fluid Mechanics*, **2019**, 860, 886-938	3.7	49
58	A Critical Evaluation of the Resolution Properties of B-Spline and Compact Finite Difference Methods. *Journal of Computational Physics*, **2001**, 174, 510-551	4.1	44
57	Validating predictions of unobserved quantities. *Computer Methods in Applied Mechanics and Engineering*, **2015**, 283, 1310-1335	5.7	42
56	Extreme-scale motions in turbulent plane Couette flows. *Journal of Fluid Mechanics*, **2018**, 842, 128-145	3.7	38
55	Short-time Lyapunov exponent analysis and the transition to chaos in Taylor-Couette flow. *Journal of Fluid Mechanics*, **1991**, 233, 83-118	3.7	38
54	Compressible Wall-Injection Flows in Laminar, Transitional, and Turbulent Regimes: Numerical Prediction. *Journal of Spacecraft and Rockets*, **2004**, 41, 915-924	1.5	37
53	The evolution of a plane mixing layer with spanwise nonuniform forcing. *Physics of Fluids*, **1994**, 6, 381-396	4.4	34
52	Finite-volume optimal large-eddy simulation of isotropic turbulence. *Physics of Fluids*, **2004**, 16, 2255-2271	4.4	33

51	Spanwise scale selection in plane mixing layers. *Journal of Fluid Mechanics*, **1993**, 247, 321-337	3.7	29
50	Large-eddy simulations - Where are we and what can we expect?. *AIAA Journal*, **2000**, 38, 605-612	2.1	28
49	Two-Dimensional Mesh Embedding for B-spline Methods. *Journal of Computational Physics*, **1998**, 145, 471-488	4.1	27
48	Petascale direct numerical simulation of turbulent channel flow on up to 786K cores **2013**,		26
47	A DPG method for steady viscous compressible flow. *Computers and Fluids*, **2014**, 98, 69-90	2.8	26
46	A discontinuous Petrov□Galerkin methodology for adaptive solutions to the incompressible Navier□Stokes equations. *Journal of Computational Physics*, **2015**, 301, 456-483	4.1	25
45	Optimal large-eddy simulation of forced Burgers equation. *Physics of Fluids*, **2002**, 14, 4344-4351	4.4	25
44	. *Computing in Science and Engineering*, **2014**, 16, 24-31	1.5	23
43	Theoretically based optimal large-eddy simulation. *Physics of Fluids*, **2009**, 21, 105104	4.4	23
42	Kolmogorov inertial range spectra for inhomogeneous turbulence. *Physics of Fluids*, **1994**, 6, 794-801	4.4	22
41	Simulation Strategy of Turbulent Internal Flow in Solid Rocket Motor. *Journal of Propulsion and Power*, **2005**, 21, 251-263	1.8	21
40	Statistical Properties of Subgrid-Scale Turbulence Models. *Annual Review of Fluid Mechanics*, **2021**, 53, 255-286	22	21
39	Direct numerical simulation of turbulence in injection-driven plane channel flows. *Physics of Fluids*, **2008**, 20, 105103	4.4	20
38	Scaling of Lyapunov exponents in homogeneous isotropic turbulence. *Physical Review Fluids*, **2017**, 2,	2.8	18
37	On the secondary instability in plane Poiseuille flow. *Physics of Fluids A, Fluid Dynamics*, **1989**, 1, 775-777		17
36	Representing Model Inadequacy: A Stochastic Operator Approach. *SIAM-ASA Journal on Uncertainty Quantification*, **2018**, 6, 457-496	1.8	16
35	Optimal large-eddy simulation results for isotropic turbulence. *Journal of Fluid Mechanics*, **2004**, 521, 273-294	3.7	16
34	Large eddy simulation of compressible, shaped-hole film cooling. *International Journal of Heat and Mass Transfer*, **2019**, 140, 498-517	4.9	15

33	Relative Periodic Solutions of the Complex Ginzburg--Landau Equation. *SIAM Journal on Applied Dynamical Systems*, **2005**, 4, 1042-1075	2.8	13
32	Accounting for uncertainty in the analysis of overlap layer mean velocity models. *Physics of Fluids*, **2012**, 24, 075108	4.4	12
31	Two-point similarity in temporally evolving plane wakes. *Journal of Fluid Mechanics*, **2007**, 577, 287-307	3.7	12
30	Correlation of pressure fluctuations in turbulent wall layers. *Physical Review Fluids*, **2017**, 2,	2.8	12
29	Probabilistic Approach to NASA Langley Research Center Multidisciplinary Uncertainty Quantification Challenge Problem. *Journal of Aerospace Information Systems*, **2015**, 12, 170-188	1	11
28	Simulation of Rapidly Maneuvering Airfoils with Synthetic Jet Actuators. *AIAA Journal*, **2013**, 51, 1883-1897	2.1	9
27	Effects of Trailing-Edge Synthetic Jet Actuation on an Airfoil. *AIAA Journal*, **2011**, 49, 1763-1777	2.1	9
26	Resolution-induced anisotropy in large-eddy simulations. *Physical Review Fluids*, **2019**, 4,	2.8	9
25	Representing anisotropy of two-point second-order turbulence velocity correlations using structure tensors. *Physics of Fluids*, **2008**, 20, 101502	4.4	8
24	Validity of quasinormal approximation in turbulent channel flow. *Physics of Fluids*, **2005**, 17, 055106	4.4	8
23	Implicit LES for Shaped-Hole Film Cooling Flow **2017**,		7
22	A filtered-wall formulation for large-eddy simulation of wall-bounded turbulence. *Physics of Fluids*, **2008**, 20, 115104	4.4	7
21	Breakdown of continuity in large-eddy simulation. *Physics of Fluids*, **2001**, 13, 1524-1527	4.4	7
20	Direct simulation of a zero-pressure-gradient turbulent boundary layer up toRe□ 6650. *Journal of Physics: Conference Series*, **2011**, 318, 022023	0.3	5
19	Effects of resolution inhomogeneity in large-eddy simulation. *Physical Review Fluids*, **2021**, 6,	2.8	5
18	An inertial range model for the three-point third-order velocity correlation. *Physics of Fluids*, **2007**, 19, 105111	4.4	4
17	Near-wall patch representation of wall-bounded turbulence. *Journal of Fluid Mechanics*, **2020**, 903,	3.7	4
16	Flow Visualization of Superbursts and of the Log-Layer in a DNS at (operatorname{Re} _{tau } = 950). *Flow, Turbulence and Combustion*, **2007**, 79, 175-189	2.5	3

15	On the validity of the continuum approximation in high Reynolds number turbulence. *Physics of Fluids*, **2006**, 18, 078105	4.4	3
14	Hybrid OpenMP-MPI Turbulent Boundary Layer Code Over 32k Cores. *Lecture Notes in Computer Science*, **2011**, 218-227	0.9	3
13	Coherent structures in a simulated turbulent mixing layer. *Fluid Mechanics and Its Applications*, **1993** , 415-428	0.2	3
12	Towards a Predictive Hybrid RANS/LES Framework **2019**,		2
11	Numerical dispersion effects on the energy cascade in large-eddy simulation. *Physical Review Fluids*, **2021**, 6,	2.8	2
10	Bayesian Inference of Fire Evolution Within a Compartment Using Heat Flux Measurements. *Fire Technology*, **2020**, 1	3	1
9	Conservative integral form of the incompressible Navier-Stokes equations for a rapidly pitching airfoil. *Journal of Computational Physics*, **2012**, 231, 6268-6289	4.1	1
8	Active model split hybrid RANS/LES. *Physical Review Fluids*, **2022**, 7,	2.8	1
7	Temporal slow-growth formulation for direct numerical simulation of compressible wall-bounded flows. *Physical Review Fluids*, **2017**, 2,	2.8	1
6	The Parallel C++ Statistical Library for Bayesian Inference: QUESO **2017**, 1829-1865		1
5	Validation of Physical Models in the Presence of Uncertainty **2015**, 1-28		
4	The Numerical Decomposition of Turbulent Fluctuations in a Compressible Boundary Layer. *Theoretical and Computational Fluid Dynamics*, **2001**, 15, 35-63	2.3	
3	Filtering the Wall as a Solution to the Wall-Modeling Problem **2007**, 117-126		
2	Validation of Physical Models in the Presence of Uncertainty **2017**, 129-156		
1	Modeling Multi-point Correlations in Wall-Bounded Turbulence. *ERCOFTAC Series*, **2011**, 29-37	0.1	