# Robert D Moser

## List of Publications by Year in Descending Order



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|---|---|---|---|
| 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 | Active model split hybrid RANS/LES. *Physical Review Fluids*, **2022**, 7, | 2.8 | 1 |
| 85 | Statistical Properties of Subgrid-Scale Turbulence Models. *Annual Review of Fluid Mechanics*, **2021**, 53, 255-286 | 22 | 21 |
| 84 | Effects of resolution inhomogeneity in large-eddy simulation. *Physical Review Fluids*, **2021**, 6, | 2.8 | 5 |
| 83 | Numerical dispersion effects on the energy cascade in large-eddy simulation. *Physical Review Fluids*, **2021**, 6, | 2.8 | 2 |
| 82 | Bayesian Inference of Fire Evolution Within a Compartment Using Heat Flux Measurements. *Fire Technology*, **2020**, 1 | 3 | 1 |
| 81 | Near-wall patch representation of wall-bounded turbulence. *Journal of Fluid Mechanics*, **2020**, 903, | 3.7 | 4 |
| 80 | Large eddy simulation of compressible, shaped-hole film cooling. *International Journal of Heat and Mass Transfer*, **2019**, 140, 498-517 | 4.9 | 15 |
| 79 | Resolution-induced anisotropy in large-eddy simulations. *Physical Review Fluids*, **2019**, 4, | 2.8 | 9 |
| 78 | 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 |
| 77 | Towards a Predictive Hybrid RANS/LES Framework **2019**, | | 2 |
| 76 | Extreme-scale motions in turbulent plane Couette flows. *Journal of Fluid Mechanics*, **2018**, 842, 128-145 | 3.7 | 38 |
| 75 | Representing Model Inadequacy: A Stochastic Operator Approach. *SIAM-ASA Journal on Uncertainty Quantification*, **2018**, 6, 457-496 | 1.8 | 16 |
| 74 | Implicit LES for Shaped-Hole Film Cooling Flow **2017**, | | 7 |
| 73 | Temporal slow-growth formulation for direct numerical simulation of compressible wall-bounded flows. *Physical Review Fluids*, **2017**, 2, | 2.8 | 1 |
| 72 | Correlation of pressure fluctuations in turbulent wall layers. *Physical Review Fluids*, **2017**, 2, | 2.8 | 12 |
| 71 | Scaling of Lyapunov exponents in homogeneous isotropic turbulence. *Physical Review Fluids*, **2017**, 2, | 2.8 | 18 |
| 70 | The Parallel C++ Statistical Library for Bayesian Inference: QUESO **2017**, 1829-1865 | | 1 |

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| 69 | Validation of Physical Models in the Presence of Uncertainty **2017**, 129-156 | | |
| 68 | 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 |
| 67 | Validating predictions of unobserved quantities. *Computer Methods in Applied Mechanics and Engineering*, **2015**, 283, 1310-1335 | 5.7 | 42 |
| 66 | 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 |
| 65 | Direct numerical simulation of turbulent channel flow up to. *Journal of Fluid Mechanics*, **2015**, 774, 395-415 | 3.7 | 557 |
| 64 | Validation of Physical Models in the Presence of Uncertainty **2015**, 1-28 | | |
| 63 | Probabilistic Approach to NASA Langley Research Center Multidisciplinary Uncertainty Quantification Challenge Problem. *Journal of Aerospace Information Systems*, **2015**, 12, 170-188 | 1 | 11 |
| 62 | . *Computing in Science and Engineering*, **2014**, 16, 24-31 | 1.5 | 23 |
| 61 | Estimating uncertainties in statistics computed from direct numerical simulation. *Physics of Fluids*, **2014**, 26, 035101 | 4.4 | 73 |
| 60 | Two-point statistics for turbulent boundary layers and channels at Reynolds numbers up to □ 2000. *Physics of Fluids*, **2014**, 26, 105109 | 4.4 | 128 |
| 59 | A DPG method for steady viscous compressible flow. *Computers and Fluids*, **2014**, 98, 69-90 | 2.8 | 26 |
| 58 | Petascale direct numerical simulation of turbulent channel flow on up to 786K cores **2013**, | | 26 |
| 57 | Simulation of Rapidly Maneuvering Airfoils with Synthetic Jet Actuators. *AIAA Journal*, **2013**, 51, 1883-1897 | 2.1 | 9 |
| 56 | One-point statistics for turbulent wall-bounded flows at Reynolds numbers up to □2000. *Physics of Fluids*, **2013**, 25, 105102 | 4.4 | 230 |
| 55 | 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 |
| 54 | Accounting for uncertainty in the analysis of overlap layer mean velocity models. *Physics of Fluids*, **2012**, 24, 075108 | 4.4 | 12 |
| 53 | Bayesian uncertainty quantification applied to RANS turbulence models. *Journal of Physics: Conference Series*, **2011**, 318, 042032 | 0.3 | 54 |
| 52 | Effects of Trailing-Edge Synthetic Jet Actuation on an Airfoil. *AIAA Journal*, **2011**, 49, 1763-1777 | 2.1 | 9 |

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|---|---|---|---|
| 51 | Bayesian uncertainty analysis with applications to turbulence modeling. *Reliability Engineering and System Safety*, **2011**, 96, 1137-1149 | 6.3 | 150 |
| 50 | Direct simulation of a zero-pressure-gradient turbulent boundary layer up toRe 6650. *Journal of Physics: Conference Series*, **2011**, 318, 022023 | 0.3 | 5 |
| 49 | Hybrid OpenMP-MPI Turbulent Boundary Layer Code Over 32k Cores. *Lecture Notes in Computer Science*, **2011**, 218-227 | 0.9 | 3 |
| 48 | Modeling Multi-point Correlations in Wall-Bounded Turbulence. *ERCOFTAC Series*, **2011**, 29-37 | 0.1 | |
| 47 | Patient-specific isogeometric fluidtructure 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 |
| 46 | Theoretically based optimal large-eddy simulation. *Physics of Fluids*, **2009**, 21, 105104 | 4.4 | 23 |
| 45 | Representing anisotropy of two-point second-order turbulence velocity correlations using structure tensors. *Physics of Fluids*, **2008**, 20, 101502 | 4.4 | 8 |
| 44 | Direct numerical simulation of turbulence in injection-driven plane channel flows. *Physics of Fluids*, **2008**, 20, 105103 | 4.4 | 20 |
| 43 | A filtered-wall formulation for large-eddy simulation of wall-bounded turbulence. *Physics of Fluids*, **2008**, 20, 115104 | 4.4 | 7 |
| 42 | A fixed-mesh method for incompressible flowtructure systems with finite solid deformations. *Journal of Computational Physics*, **2008**, 227, 3114-3140 | 4.1 | 113 |
| 41 | Two-point similarity in temporally evolving plane wakes. *Journal of Fluid Mechanics*, **2007**, 577, 287-307 | 3.7 | 12 |
| 40 | 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 |
| 39 | An inertial range model for the three-point third-order velocity correlation. *Physics of Fluids*, **2007**, 19, 105111 | 4.4 | 4 |
| 38 | What are we learning from simulating wall turbulence?. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2007**, 365, 715-32 | 3 | 59 |
| 37 | Filtering the Wall as a Solution to the Wall-Modeling Problem **2007**, 117-126 | | |
| 36 | On the validity of the continuum approximation in high Reynolds number turbulence. *Physics of Fluids*, **2006**, 18, 078105 | 4.4 | 3 |
| 35 | Self-similar vortex clusters in the turbulent logarithmic region. *Journal of Fluid Mechanics*, **2006**, 561, 329 | 3.7 | 261 |
| 34 | Relative Periodic Solutions of the Complex Ginzburg--Landau Equation. *SIAM Journal on Applied Dynamical Systems*, **2005**, 4, 1042-1075 | 2.8 | 13 |

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|---|---|---|---|
| 33 | Validity of quasinormal approximation in turbulent channel flow. *Physics of Fluids*, **2005**, 17, 055106 | 4.4 | 8 |
| 32 | Simulation Strategy of Turbulent Internal Flow in Solid Rocket Motor. *Journal of Propulsion and Power*, **2005**, 21, 251-263 | 1.8 | 21 |
| 31 | Finite-volume optimal large-eddy simulation of isotropic turbulence. *Physics of Fluids*, **2004**, 16, 2255-2271 | 4.4 | 33 |
| 30 | Compressible Wall-Injection Flows in Laminar, Transitional, and Turbulent Regimes: Numerical Prediction. *Journal of Spacecraft and Rockets*, **2004**, 41, 915-924 | 1.5 | 37 |
| 29 | Optimal large-eddy simulation results for isotropic turbulence. *Journal of Fluid Mechanics*, **2004**, 521, 273-294 | 3.7 | 16 |
| 28 | Scaling of the energy spectra of turbulent channels. *Journal of Fluid Mechanics*, **2004**, 500, 135-144 | 3.7 | 463 |
| 27 | Optimal large-eddy simulation of forced Burgers equation. *Physics of Fluids*, **2002**, 14, 4344-4351 | 4.4 | 25 |
| 26 | The Numerical Decomposition of Turbulent Fluctuations in a Compressible Boundary Layer. *Theoretical and Computational Fluid Dynamics*, **2001**, 15, 35-63 | 2.3 | |
| 25 | 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 |
| 24 | Breakdown of continuity in large-eddy simulation. *Physics of Fluids*, **2001**, 13, 1524-1527 | 4.4 | 7 |
| 23 | Direct numerical simulation of a supersonic turbulent boundary layer at Mach 2.5. *Journal of Fluid Mechanics*, **2000**, 414, 1-33 | 3.7 | 221 |
| 22 | Large-eddy simulations - Where are we and what can we expect?. *AIAA Journal*, **2000**, 38, 605-612 | 2.1 | 28 |
| 21 | Direct numerical simulation of turbulent channel flow up to Re⌸590. *Physics of Fluids*, **1999**, 11, 943-945 | 4.4 | 1811 |
| 20 | Optimal LES formulations for isotropic turbulence. *Journal of Fluid Mechanics*, **1999**, 398, 321-346 | 3.7 | 146 |
| 19 | Two-Dimensional Mesh Embedding for B-spline Methods. *Journal of Computational Physics*, **1998**, 145, 471-488 | 4.1 | 27 |
| 18 | Self-similarity of time-evolving plane wakes. *Journal of Fluid Mechanics*, **1998**, 367, 255-289 | 3.7 | 81 |
| 17 | Zonal Embedded Grids for Numerical Simulations of Wall-Bounded Turbulent Flows. *Journal of Computational Physics*, **1996**, 127, 412-423 | 4.1 | 140 |
| 16 | A numerical study of turbulent supersonic isothermal-wall channel flow. *Journal of Fluid Mechanics*, **1995**, 305, 159-183 | 3.7 | 291 |

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|---|---|---|---|
| 15 | Kolmogorov inertial range spectra for inhomogeneous turbulence. *Physics of Fluids*, **1994**, 6, 794-801 | 4.4 | 22 |
| 14 | The evolution of a plane mixing layer with spanwise nonuniform forcing. *Physics of Fluids*, **1994**, 6, 381-396 | 4.4 | 34 |
| 13 | Direct simulation of a self-similar turbulent mixing layer. *Physics of Fluids*, **1994**, 6, 903-923 | 4.4 | 327 |
| 12 | 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 |
| 11 | Spanwise scale selection in plane mixing layers. *Journal of Fluid Mechanics*, **1993**, 247, 321-337 | 3.7 | 29 |
| 10 | Coherent structures in a simulated turbulent mixing layer. *Fluid Mechanics and Its Applications*, **1993**, 415-428 | 0.2 | 3 |
| 9 | The three-dimensional evolution of a plane mixing layer: the Kelvin–Helmholtz rollup. *Journal of Fluid Mechanics*, **1992**, 243, 183 | 3.7 | 256 |
| 8 | 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 |
| 7 | Mixing transition and the cascade to small scales in a plane mixing layer. *Physics of Fluids A, Fluid Dynamics*, **1991**, 3, 1128-1134 | | 103 |
| 6 | 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 |
| 5 | On the secondary instability in plane Poiseuille flow. *Physics of Fluids A, Fluid Dynamics*, **1989**, 1, 775-777 | | 17 |
| 4 | Characteristic-eddy decomposition of turbulence in a channel. *Journal of Fluid Mechanics*, **1989**, 200, 471-509 | 3.7 | 309 |
| 3 | The effects of curvature in wall-bounded turbulent flows. *Journal of Fluid Mechanics*, **1987**, 175, 479 | 3.7 | 163 |
| 2 | Turbulence statistics in fully developed channel flow at low Reynolds number. *Journal of Fluid Mechanics*, **1987**, 177, 133-166 | 3.7 | 3384 |
| 1 | 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 |