Thomas B. Gatski

Center for Coastal Physical Oceanography, Department of Ocean, Earth and Atmospheric Sciences
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EDUCATION

1976 Ph.D. Aerospace Engineering, The Pennsylvania State University

1972 M.S. Aerospace Engineering, The Pennsylvania State University

1970 B.S. Aerospace Engineering, The Pennsylvania State University

APPOINTMENTS

2006 – Research Professor, Department of Ocean, Earth, and Atmospheric Sciences, Old Dominion University

2006 – Research Director, Laboratoire D' Aerodynamiques, CNRS UMR 6609, Universite de Poitiers

2006 – (January - March) Visiting Professor, Department of Mechanical Engineering, The Hong Kong Polytechnic University

2005 – (September) Invited Professor, Département Mécanique, École Polytechnique Universitaire De Lille

1986 – 2005 Senior Research Scientist, NASA Langley Research Center

1977 – 1986 Research Scientist, NASA Langley Research Center

1976 – 1977 Post-Doctoral Appointment, Division of Engineering, Brown University

TECHNICAL CONSULTANT

Cortana Corp., Falls Church, VA 22046

Applied Research Laboratory, State College, PA 16804

Hong Kong Polytechnic University, Department of Mechanical Engineering, Hong Kong

Unilever Research, Vlaardingen, The Netherlands

ACADEMIC RELATED ACTIVITIES

National

APS/DFD Meeting 2004, Gallery of Fluid Motion Video Judge, 24 November, Sheraton, Meadowlands, New Jersey

Lecturer, VKI Lecture Series, CFD-Based Aircraft Drag Prediction and Reduction, National Institute of Aerospace, Hampton, Virginia, November 3 - 7, 2003

Member of the Industry and External Relations Advisory Board (IERAB) of the University of Virginia's Department of Mechanical and Aerospace Engineerings, (2003-2005)

Member of doctoral dissertation committee for graduate student in Department of Mechanical and Aerospace Engineering, University of Colorado, Boulder, 2001-2004

Short Course on "Turbulence Modeling for Complex CFD HPC Applications," ARL MSRC PET, Aberdeen, Maryland, March 16–17, 1998

Member of doctoral thesis committee, Old Dominion University, Department of Oceanography, Norfolk, Virginia, Spring 1998,

NASA supervisor for Ph.D. student from University of California, San Diego, 1990-1994

NASA supervisor for Ph.D. student from Old Dominion University, 1984-1987

Member of doctoral dissertation committee for graduate student in Department of Meteorology, Old Dominion University, 1982

NASA supervisor for Ph.D. student from North Carolina State University, 1983-1984

International

Contract Professor, Short Course: "Modeling and Simulation of Compressible Turbulence" University of Rome "la Sapienza", Department of Mechanics and Aeronautics, September 18 - 29, 2000.

Lecturer, Short Course: "New Developments in Mathematical Modelling and Numerical Simulation for Turbulent Transport Phenomena," Japanese Society of Mechanical Engineering, Tokyo, Japan, April 7 - 8, 2000.

Thesis examiner, doctoral thesis, Royal Institute of Technology KTH, Stockholm, Sweden, February, 2000.

Lecturer, Isaac Newton Institute for Mathematical Sciences, Research Programme on Turbulence, Cambridge University, Cambridge, England, April 6th – 16th, 1999.

Member of Jury for Habilitation á Diriger des Recherches at Université Claude Bernard – Lyon I, October 1998.

Member of doctoral thesis committee, University of Poitiers, Poitiers, France, March 1997

Member of doctoral thesis committee, Swiss Federal Institute of Technology, IMHEF-DGM, Lausanne, Switzerland, Winter 1997.

ERCOFTAC (European Scientific Community on Flow Turbulence and Combustion) Scientific Visitor, Swiss Federal Institute of Technology, June 1 - 30, 1996.

Lecturer, Les Houches Center of Physics Spring Session (University of Grenoble, France), "Compressibility Effects on Turbulence," May 21-31, 1996 (Students had both academic and industrial affiliations).

AWARDS

2004 Superior Accomplishment Award (Cash Award)

2001–2003 Performance Awards (Cash Awards)

2001 (December) Superior Accomplishment Award (Cash Award)

2001 (August) Superior Accomplishment Award (Cash Award)

1997 AIAA Best Paper Award (AIAA Applied Aerodynamics Technical Committee). C. L. Rumsey, T. B. Gatski, S. X. Ying, and A. Bertelrud, "Prediction of High-Lift Flows Using Turbulent Closure Models," *AIAA 15th Applied Aerodynmaics Conference*, AIAA Paper 97-2260.

Floyd L. Thompson Fellowship, NASA Langley Research Center (sabbatical at Cambridge University, 1987–88 academic year).

1985 Special Achievement Award

Certificates of Outstanding Performance , Langley Research Center (March 1, 1983-February 29, 1984; March 1, 1989-February 28,1996). 1999, 2001 (Cash Awards);

PROFESSIONAL AND HONOR SOCIETY MEMBERSHIPS

National

American Physical Society/Division of Fluid Dynamics

American Society of Mechanical Engineers (Fellow)

American Institute of Aeronautics and Astronautics (Associate Fellow)

Honors:

The Honor Society of Phi Kappa Phi

American Men and Women of Science — Physical and Biological Sciences, 14th — 19th editions; Who's Who in Technology Today, 3rd and 5th Editions

Conference/Symposium Organization:

Chair Local Executive Committee, Fourth International Symposium on Turbulence and Shear Flow Phenomena, June 27-29, 2005, Williamsburg, Va.

Co-Organizer (with C. L. Rumsey), CFDVAL2004 - LaRC Workshop on CFD Validation of Synthetic Jets and Turbulent Separation Control, March 29-31, 2004, Williamsburg, Va.

National Coordinator, Turbulence in Compressible Flows, AGARD Special Course, October 20-24, 1997, Newport News, Va.

Co-Organizer (with C. G. Speziale and S. Sarkar), The Lumley Symposium: Recent Developments in Turbulence, November 12 &13, 1990, ICASE, NASA Langley Research Center, Hampton, Va.

Editorships:

Editor-in-Chief: *International Journal of Heat and Fluid Flow*, 2006 - Present.

Associate Editor: *International Journal of Heat and Fluid Flow*, 2004 - 2005.

Associate Editor: *ASME Journal of Fluids Engineering*, March, 2001 - December, 2004.

Editorial Board: *Advances in Fluid Mechanics Series*, July, 2000 - Present.

Editor: *Theoretical and Computational Fluid Dynamics (TCFD)*, 1999 - Present.

Assoc. Editor: *Theoretical and Computational Fluid Dynamics (TCFD)*, 1991 - 1998.

Editor: *Simulation and Modeling of Turbulent Flows* (with M.Y. Hussaini and J.L. Lumley), Oxford University Press, 1996.

Editor: *Transition, Turbulence and Combustion*, Selected Papers from the ICASE/LaRC 1993 Summer Workshop, (with M.Y. Hussaini and T.L. Jackson), Kluwer Academic Publishers, 1994.

Consulting Editor: *AIP Series in Computational Physics – Fluid Dynamics*, 1992 - 1995.

Editor: Special Issue of *TCFD* on Turbulent Eddy Structure and Dynamics (with M. N. Glauser and J. P. Bonnet), Vol. 5 (4-5), 1993.

Editor: *Instabilities and Turbulence in Engineering Flows*, with D.E. Ashpis and R. Hirsh, Kluwer Academic Publishers, 1993.

Editor: *Studies in Turbulence*, with S. Sarkar and C. Speziale, Springer-Verlag, 1992.

Editor: Special Issue of *TCFD* Dedicated to J.L. Lumley, with S. Sarkar and C. Speziale, Vol. 2 (5/6), 1991.

PUBLICATIONS

Book Chapters and Reviews:

"Linear and Nonlinear Eddy Viscosity Models," (with C. L. Rumsey) *Closure Strategies for Modelling Turbulent and Transitional Flows* (B. E. Launder and N. D. Sandham, eds.), Cambridge University Press, Cambridge, 2001.

"Compressible, High Speed Flows," (with S. Barre, J.-P. Bonnet, N. D. Sandham) *Closure Strategies for Modelling Turbulent and Transitional Flows* (B. E. Launder and N. D. Sandham, eds.) Cambridge University Press, Cambridge, 2001.

"Nonlinear Eddy Viscosity and Algebraic Stress Models for Solving Complex Turbulent Flows," (with T. Jongen) *Prog. Aerospace Sci.*, Elsevier Science Publishers, Vol. 36/8, pp. 655-682, 2000.

"Modeling Compressibility Effects on Turbulence" *New Tools in Turbulence Modeling*, Les Editions de Physique, Springer-Verlag, 1996.

"Turbulent Flows – Model Equations and Solution Methodology" *Handbook of Computational Fluid Mechanics*, R. Peyret (ed.), Academic Press, 1996.

Technical Publications: Author or co-author of over 150 archival journal and meeting publications