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EMPLOYMENT

Technical Staff Member , Los Alamos Natl. Lab.	Apr. 1996 – Present
Adjunct Faculty , Mech. Engg., U. of Colorado, Boulder	Aug. 2007 – Present
Instructor , Dept. of Math, UNM, Albuquerque	Aug. 2006 – Dec. 2006
Visiting Scientist , Program in Atmospheres, Oceans, and Climate Massachusetts Institute of Technology, Cambridge, MA	Aug. 2003 – Jul. 2004
Adjunct Assoc. Professor , Department of Mathematics University of New Mexico, Albuquerque, NM	Apr. 1998 – Dec. 2002
Post-doctoral Fellow , Los Alamos Natl. Lab.	May 1993 – Apr. 1996
CNRS Research Fellow , University of Paris VI, FRANCE	Aug. 1992 – Apr. 1993
Research Fellow in Aeronautics , GALCIT, Caltech	Jun. 1992 – Aug. 1992
Collaborator , Los Alamos Natl. Lab.	Sep. 1989 – Sep. 1991
Research Assistant , GALCIT, Caltech	Jun. 1987 – Jun. 1992
Research Assistant , Indian Institute of Science, Bangalore, INDIA	Apr. 1985 – Jun. 1985

EDUCATION

Summer school in Geophysical and Environmental Fluid Dynamics DAMTP, University of Cambridge, Cambridge, U.K.	Sep. 2000
Ph.D., Aeronautics (with minor in physics) California Institute of Technology	Jun. 1992
M.S., Aeronautics California Institute of Technology	Jun. 1987
Bachelor of Technology, Aeronautics Indian Institute of Technology, Madras, India	Jun. 1986

ACADEMIC AWARDS

William F. Ballhaus Prize for outstanding doctoral dissertation in Aeronautics California Institute of Technology	Jun. 1992
Darryl G. Greenamyre fellowship California Institute of Technology	Sep. 1986 – Aug. 1987
Hindustan Aeronautics Ltd award for academic excellence Indian Institute of Technology, Madras, India	Jun. 1986
National Merit Scholarship, India	Jun. 1982 – Jun. 1986

REFEREED PUBLICATIONS

- B.T. Nadiga.; Livescu (2007) On the instability of the perfect subgrid model of implicit-filtering Large Eddy Simulation of Geostrophic Turbulence, *Phys. Rev. E* 75, 046303
- J. Duan and B.T. Nadiga (2007) Stochastic parameterization for large eddy simulation of geophysical flow, *Proceedings of the American Mathematical Society*, 135, 1187–1196
- B.T. Nadiga (2006) On zonal jets in oceans, *Geophysical Research Letters* Volume 33, Issue 10, L10601
- B.T. Nadiga, M.A. Taylor, J. Lorenz (2006) Ocean modelling for climate studies : Eliminating short time scales in long-term, high-resolution studies of ocean circulation, *Computer and Mathematical Modeling*, 44, 870–886
- Modeling Subgrid Scales in the Turbulent Barotropic Double Gyre Circulation, D.D. Holm and B.T. Nadiga. *Journal of Physical Oceanography*, 33, 2355–2365 (2003)
- Global Bifurcation in a Simple Ocean Model, B.T. Nadiga & B. Luce. *Journal of Physical Oceanography*, 31 (2001), 2669–2690
- Dispersive Eddy Parameterization in a Barotropic Ocean Model, B.T. Nadiga & L.G. Margolin. *Journal of Physical Oceanography*, 31 (2001), 2525–2531
- Enhancement of the inverse-cascade of energy in the two-dimensional averaged Euler equations, B.T. Nadiga & S. Shkoller. *Physics of Fluids*, 13 (2001), 1528–1531
- Four gyre circulation in a barotropic model with double gyre wind forcing R.J. Greatbatch & B.T. Nadiga. *Journal of Physical Oceanography*, 30 (2000), 1461–1471.
- Scaling Properties of an Inviscid Mean-Motion Fluid Model, B.T. Nadiga. *Journal of Statistical Physics*, 98 (2000), 935–948.
- Moment Realizability and the Validity of the Navier-Stokes Equations for Rarefied Gas Dynamics, C.D. Levermore, W.J. Morokoff, & B.T. Nadiga. *Physics of Fluids*, 10 (1998), 3214–3226.
- On Simulating Flows with Multiple Time Scales Using a Method of Averages, B. T. Nadiga, M. W. Hecht, L. G. Margolin & P. K. Smolarkiewicz. *Theoretical and Computational Fluid Dynamics*, 9 (1997), 281–293.
- Different Approximations of Shallow Fluid Flow over an Obstacle, B.T. Nadiga, L.G. Margolin, & P.K. Smolarkiewicz. *Physics of Fluids*, 8 (1996), 1–12.
- Investigations of a two-phase fluid model, B.T. Nadiga & S. Zaleski. *European Journal of Mechanics B: Fluids*, 15 (1996), 885–896.
- Semi-Lagrangian Shallow Water Modeling on the CM-5, B.T. Nadiga, L.G. Margolin, & P.K. Smolarkiewicz. *Parallel Computational Fluid Dynamics: Implementation and Results Using Parallel Computers Proceedings of Parallel CFD'95* (1996), 529–536.
- An Euler Solver Based on Locally Adaptive Discrete-Velocities, B.T. Nadiga. *Journal of Statistical Physics*, 81 (1995), 129–146.
- An Adaptive Discrete Velocity Model for the Shallow Water Equations, B.T. Nadiga. *Journal of Computational Physics*, 121 (1995), 271–280.
- An Exact Shock-Solution in the Nine-Velocity Gas, B. T. Nadiga & B. Sturtevant. *Physica D*, 73 (1994), 205–216.
- A Method for Near-Equilibrium Discrete-Velocity Gas Flows, B. T. Nadiga & D. I. Pullin. *Journal of Computational Physics*, 112 (1994), 162–172.

Plane Waves in a Multi-Speed Discrete-Velocity Gas, B. T. Nadiga. *Rarefied Gas Dynamics: Theory and Simulations*, Progress in Astronautics and Aeronautics, **159**, AIAA, 1994, 313–327.

Compressible Channel Flow Using Two Discrete-Velocity Gas Models, D. Goldstein & B. T. Nadiga. *Rarefied Gas Dynamics: Theory and Simulations*, Vol. 159 of Progress in Astronautics and Aeronautics, AIAA, 1994, 3–14.

Study of a Multispeed Cellular Automaton, B. T. Nadiga, J. E. Broadwell, & B. Sturtevant. *Rarefied Gas Dynamics: Theoretical and Computational Techniques*, Vol. 118 of Progress in Astronautics and Aeronautics, AIAA, ISBN 0-930403-55-X, 1989, 155–170.

OTHER PUBLICATIONS

B.T. Nadiga (2006), On the dynamics of alternating zonal jets in oceans, *Geophysical Research Abstracts*, Vol. 8, 05201

B.T. Nadiga (2006), Oceanic Zonal Jets and the Barotropic Vorticity Equation, *Eos Trans. AGU*, 87(36), Ocean Sci. Meet. Suppl., Abstract OS45L-04

B.T. Nadiga.; Livescu, D.; McKay, C. Q. (2005) Stochastic Large Eddy Simulation of Geostrophic Turbulence American Geophysical Union, Spring Meeting 2005, NG23A-09

B.T. Nadiga (2004) Reduced Dynamics And Modeling of Unresolved Mesoscale Eddy Activity *Geophysical Research Abstracts*, Vol. 6, 05877, 2004

Lagrangian averaging and modeling unresolved mesoscale eddy activity, B.T. Nadiga, *Eos Trans. AGU*, 84(52), Ocean Sci. Meet. Suppl., Abstract OS32M-05, 2003

On Non-oscillatory schemes as subgrid models of geostrophic turbulence, B.T. Nadiga (2004) preprint, LA-UR-06-7647

The Thermohaline Circulation in an Isopycnal Ocean Model With Bulk Surface Forcing, *Eos, Transactions, American Geophysical Union*, **52** (2002)

Discrete-Velocity Models of the Boltzmann Equations: Navier-Stokes Approximations and Shock Profiles, C.D. Levermore & B.T. Nadiga. (preprint).

Nonhydrostatic Effects in Long Term Shallow Fluid Flow, D. D. Holm, L.G. Margolin, & B.T. Nadiga. (preprint)

MANUSCRIPTS IN PREPARATION

Modulational Instability and zonal jets, BT Nadiga & S Nazarenko

Interaction of wind-driven gyres and zonal jets in oceans, BT Nadiga & D Straub

Regularization and Large Eddy Simulations of ocean circulation, BT Nadiga

Adverse pressure gradient and the separation of WBCs with realistic continental geometries, BT Nadiga

On the alignment of subgrid stresses in turbulent ocean circulation, BT Nadiga & G Eyink

INVITED TALKS

Stochastic Dynamics and Climate Modeling, Banff, Canada, Apr 2007

European Geosciences Union, Vienna, Austria, Apr 2005

Dept. Seminar, Dept. of Atmospheric and Oceanic Sciences, McGill University, Quebec, Canada, Jan. 2004

Program in Atmospheres, Oceans, and Climate Seminar, EAPS, Massachusetts Institute of Technology, Cambridge, MA, Nov. 2003

Stanstead Seminar, Canadian Climate Variability Program, Lennoxville, Quebec, Canada, June 2003

Minisymposium at SIAM Dynamical Systems Meeting, Snowbird, Utah, May 2003

Dept. Seminar, IMAU, Univ. of Utrecht, Sep. 2002

Seminar, Dept. of Physical Oceanography, Dalhousie Univ, Halifax, Canada, Aug. 2002

Dynamical Systems and Differential Equations 2002, University of North Carolina, Wilmington, May 2002

Reduced Descriptions of Coupled GFD systems, Institute for Mathematics and its Applications, University of Minnesota, Feb 2002

Geophysical Fluid Mechanics Symposium in MATH 2000, McMaster University, Hamilton, Ontario, Canada, June 2000

Caltech Fluid Mechanics Seminar, Pasadena, CA, Feb 2000

Coarse-grained hydrodynamics Mechanical Engineering Seminar, Dept. of Mech. Engg., UNM, 1999

Fifth SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, May 1999

Institute for Applied Mathematics, Italian National Research Council, Rome, July 1998

Lab. of Dynamic Meteorology, Ecole Normal Supérieur, Paris, July 1998

4th International Conf. on Discrete Models of Fluid Dynamics, Univ. of Oxford, UK, July 1998

SHOM, Oceanographic and Hydrologic Institute, Brest, France, July 1998

Institute for Geophysics and Planetary Physics, LANL, Los Alamos, NM, 2 March 1995

Fluid Mechanics Colloquium at the Indian Institute of Science, Bangalore, India, 6 Sep 1994.

Laboratoire d'Hydrodynamique, Ecole Polytechnique, Palaiseau, France, Feb. 1993

Laboratoire de Modélisation en Mécanique, CNRS, Univ. Paris VI, Paris, France, Nov. 1992.

Laboratoire de Physique Statistique, Ecole Normale Supérieure, Paris, France, Nov. 1992.

2nd International Conference on Industrial and Applied Mathematics (ICIAM), Society for Industrial and Applied Mathematics, Washington, D.C, July 1991.

Fluid Mechanics Seminar, Indian Institute of Science, Bangalore, India, Dec 1987.

CONFERENCES ORGANIZED

'Uncertainty, Random Dynamical Systems and Stochastic Modeling in Geophysics,' with I. Pavlyukevich, and D. Schertzer, EGU General Assembly, April 2007

'Implicit and Adjoint Techniques in Ocean Modeling', with W. Weijer, SIAM, March 2007

'Stochastic Dynamics,' with J. Duan, D. Schertzer, and P. Imkeller, EGU, Vienna, Austria, April 2006

'Stochastic Closure for large scale turbulent flows', with D. Livescu, AGU Joint Assembly, New Orleans, May 2005

'Stochastic Dynamics,' with J. Duan, D. Schertzer, and P. Imkeller, EGU, Vienna, Austria, April 2005

'Dynamics of Ocean Circulation' jointly with David Straub, AGU Joint Assembly, Montreal, Canada, May 2004

Mini-symposium, SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, May 1997

REFEREE ACTIVITY

Refereed articles for Journal of Physical Oceanography, Monthly Weather Review, Journal of Fluid Mechanics, Physics of Fluids, Computers and Fluids, Transport Theory and Statistical Physics, Journal of Waterway, Port, Coastal and Ocean Engineering, Journal of Statistical Physics, International Journal of Modern Physics C, Physics Letters A, Physica D, Journal of Computational Physics, and Siam Journal on Scientific Computing.

FUNDED PROJECTS

Multi-resolution Techniques for Ocean Circulation Modeling, with O. Vasilyev, SCIDAC, DOE, 2007-2011 (\approx 200K\$ pa)

Stochastic Closure, with D. Schmidt, LDRD, Directed Research, LANL, 2003–2005 (\approx 500K\$ pa)

Implicit time integration for OGCMs, LDRD, Exploratory Research, LANL, 2002–2004 (\approx 200K\$ pa)

Variability in simple ocean models, DOE MICS, 2000-2002 (\approx 100K\$ pa)

RECENT COLLABORATORS

Richard Greatbatch, Dalhousie Univ., Rafaele Ferrari, MIT; Gregory Eyink, Johns Hopkins; David Straub, McGill; Baylor Fox-Kemper, MIT; Mark Taylor, Sandia; Piotr Smolarkiewicz, NCAR; Rainer Bleck, LANL; Matthew Hecht, LANL; Darryl Holm, LANL; Daniel Livescu, LANL; Benjamin Luce, LANL; Len Margolin, LANL

TEACHING

Developed and taught a graduate level course on geophysical fluid dynamics at University of New Mexico, Albuquerque, including a series of table top experiments to motivate important aspects of rotation and stratification.

Lecturer, Los Alamos Summer School

GRADUATE STUDENTS MENTORED/ADVISED

T. Zaki, Stanford, H. Thornquist, Rice University, TX; A. Srinivasan, Univ. of Miami, FL; C. Mckay, Univ. of Wiscosin, Madison; E. Forgoston, Univ. of Arizona, Tucson; A. Linfoot, Univ. of Arizona, Tucson; G. Colantuono Florida State University, FL; Shanon McIntyre, U. of Colorado, Boulder (co-adviser)