

Vita

Enrique N. Curchitser

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Professional interests

General circulation of the ocean, dynamics of eastern boundary currents and shelf circulation, sea-ice ocean interactions, effects of bathymetry, coupled bio-physical and numerical modeling.

Professional preparation

1999 Ph.D. in Oceanography, Rutgers University. Dissertation title: *On the Transient Adjustment of a Mid-latitude Abyssal Ocean Basin with Realistic Geometry and Bathymetry.*

1993 M.S. in Mechanical and Aerospace Engineering, Rutgers University. Thesis title: *Cyclic Reduction Solutions of Aerodynamic Problems Using MIMD Distributed Memory Multiprocessors.*

1988 B.S. with honors, in Mechanical and Aerospace Engineering, Rutgers University. Honors thesis title: *Numerical Study of Rayleigh-Benard Convection in 3-D.*

Graduate dissertation advisers

Ph.D. Dr. Dale B. Haidvogel (Rutgers University)

M.Sc. Dr. Richard B. Pelz (Rutgers University)

Appointments

9/06- Associate Research Professor, Institute of Marine and Coastal Sciences, Rutgers University.

9/06- Executive scientist for U.S. GLOBEC.

9/06- Adjunct Associate Research Scientist at the Lamont-Doherty Earth Observatory, Columbia University.

4/02- Doherty Associate Research Scientist, Lamont-Doherty Earth Observatory, Columbia University.

2/01-4/02 Post-Doctoral fellow, Lamont-Doherty Earth Observatory and the Department of Applied Physics and Applied Mathematics, Columbia University.

8/00-2/01 Visiting Scientist, Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany.

9/99-8/00 Postdoctoral scientist, NASA Goddard Institute for Space Studies, New York.

1993-1999 Research assistant in Oceanography, Rutgers University.

1989-1993 Research assistant in Mechanical and Aerospace Engineering, Rutgers University.

1988-1989 Teaching assistant in Mechanical and Aerospace Engineering, Rutgers University.

Participation in field work

2003 (Feb.-Apr.) *R/V N. B. Palmer*, 43 day Ross Sea AnSlope cruise.

2001 (Sep.-Oct.) *R/V N. B. Palmer*, 45 day Western Antarctic Peninsula LTER cruise.

Honors and awards

Faculty fellowship from the Advanced Study Program at the National Center for Atmospheric Research, Boulder, Colorado, Summer 2006.

Post-doctoral fellowship award from the Columbia University Earth Institute Center for Non-Linear Earth Systems, 2001.

James Slade honors scholar, College of Engineering, Rutgers University, 1988.

American Society of Mechanical Engineers. Best technical paper award on a paper titled: *Numerical study of Rayleigh-Benard Convection in 3-D*. ASME northeast regional student competition, March 1988.

Tau Beta Pi national engineering honor society, elected 1987.

Pi Tau Sigma national mechanical engineering honor society, elected 1986.

Rutgers University College of Engineering Dean's List.

Professional memberships

1994-present American Geophysical Union.

2005-present American Meteorological Society

1986-1994 American Institute of Aeronautics and Astronautics.

1986-1994 American Society of Mechanical Engineering.

Publications

Huang, H.P., A. Kaplan, E.N. Curchitser, and N. Maximenko, 2007. The degree of anisotropy for mid-ocean currents from satellite observations and an eddy-permitting model simulation. *J. Geophys. Res.*, Accepted

- Powell, T, C. Lewis, E.N. Curchitser, D.B. Haidvogel, A.J. Hermann and E.L Dobbins, 2006. Results from a three-dimensional, nested biological-physical model of the California Current System and comparisons with statistics from satellite imagery. *J. Geophys. Res.*, 111, C07018, doi:10.1029/2004JC002506
- Gan J.P., H. Li, E.N. Curchitser and D.B. Haidvogel, 2005. Modeling South China Sea Circulation . Part I: Response to seasonal forcing regimes. *J. Geophys. Res.*, 111, C06034, doi:10.1029/2005JC003298.
- Curchitser, Haidvogel, Hermann, Dobbins, Powell and Kaplan. *Multi-scale modeling of the North Pacific Ocean: Assessment of simulated basin-scale Variability (1996-2003)*. JGR-oceans, 110, C11021, doi:10.1029/2005JC002902, 2005.
- Iskandarani, Haidvogel, Levin, Curchitser, and Edwards. *Multiscale Geophysical Modeling Using the Spectral Element Method*. Computing in Science and Engineering, 4(5): 42-48, September 2002
- Curchitser, Haidvogel, and Iskandarani. *Transient adjustment of circulation in a mid-latitude abyssal ocean basin with realistic geometry and bathymetry*. Journal of Physical Oceanography, 31(3):725-745, March 2001
- Curchitser, Haidvogel, and Iskandarani. *On the transient adjustment of a mid-latitude abyssal ocean basin with realistic geometry: The constant depth limit*. Dynamics of Atmospheres and Oceans, 29:147-188, June 1999.
- Curchitser, Iskandarani, and Haidvogel. *Spectral element solution of the Shallow-Water Equations on multiprocessor computers*. Journal of Atmospheric and Oceanic Technology, 15(2):510-521, April 1998.
- Haidvogel, Curchitser, Iskandarani, Hughes, and Taylor. *Global modeling of the ocean and atmosphere using the spectral element method*. Atmosphere-Ocean Vol XXXV, No. 1, 1997.
- Chyczewski, Marconi, Pelz, and Curchitser. *Solution of the Euler and Navier-Stokes Equations on Parallel Processors Using a Transposed/Thomas ADI Algorithm*. AIAA paper 93-3310, in proceedings of 11th Computational Fluid Dynamics Conference, Orlando, FL 1993.
- Curchitser, Pelz, and Marconi. *Solution of the Euler and Navier-Stokes equations on MIMD multiprocessors using cyclic reduction*. AIAA paper 92-0561, in proceedings of the 30th Aerospace Sciences Meeting 1992.
- Curchitser and Pelz. *Implementation of the Euler equations on MIMD, distributed memory, multiprocessor computers using cyclic reduction algorithms*. In Parallel Computational Fluid Dynamics, Elsevier Science Publishers, pp 97-112, 1991.

Manuscripts in preparation

- Curchitser, Hermann, Hedstrom, Budgell, Stabeno and Dobbins. *Interannual variability in sea ice cover in the Bering sea during the 1996-2003 period*. In Preparation.
- Hermann, Curchitser, Haidvogel, and Dobbins. *A comparison of remote versus local influence of El Niño on the coastal circulation of the Northeast Pacific*. In Preparation.

Professional activities

2006-present Member of Pacific International Consortium for the Exploration of the Seas (PICES) working group: *Evaluation of Climate Change Projections*.

2006-present Member of the Community Climate System Model (CCSM) ocean working group.

2005-present Member of NSF Partnership for Advanced Computational Infrastructure (PACI) allocations committee.

2005-2007 Summer visitor to the National Center for Atmospheric Research to help foster integration of regional and global ocean models.