

Vita

Enrique N. Curchitser

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Professional interests

General circulation of the ocean, dynamics of boundary currents and shelf circulation, dynamics of coupled bio-physical systems, sea-ice/ocean interactions 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-present Associate Research Professor, Institute of Marine and Coastal Sciences, Rutgers University.

9/06-present Executive director of U.S. GLOBEC.

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

4/02-9/06 Doherty Associate Research Scientist, Lamont-Doherty Earth Observatory, Columbia University.

2/01-4/02 Columbia University Earth Institute post-doctoral fellow in the department of Applied Physics and Applied Mathematics and the Lamont-Doherty Earth Observatory.

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.

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

Keynote address to the Brazilian Oceanography Society annual meeting (IV Simposio Brasileiro de Oceanografia), December, 2008.

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

Post-doctoral fellowship award from the Earth Institute of Columbia University, 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.

1986-1994 American Institute of Aeronautics and Astronautics.

1986-1994 American Society of Mechanical Engineering.

Publications

Zhang, B., E.C. Curchitser, J. Levin, W. Han and H. Arango, 2010. The internal tide and energy flux in the Sulu and Sea and adjacent areas. *J. Geo. Res.* Submitted.

Parada, C., B. Ernst, S. Hinckley, J.M. Orensanz, D.A. Armstrong, E.N. Curchitser and A.J. Hermann, 2009. Patterns of connectivity and potential settlement regions of Snow Crab (*Chionoecetes opilio*) larvae in the eastern Bering Sea. *Prog. Ocean.*, Sub Judice.

- S. Ito, K.A. Rose, A.J. Miller, K. Drinkwater, J.E. Overland, S. Sundby E.N. Curchitser, J.W. Hurrell and Y. Yamanaka. *Ocean ecosystem responses to future global change scenarios: A way forward*. In: Global Change and Marine Ecosystems, M. Barange, J. Field, R. Harris, E. Hofmann, I. Perry and F. Werner, Eds., Oxford
- Combes, V., E. Di Lorenzo and E. Curchister, 2009. Interannual and decadal variations in cross-shore mixing in the Gulf of Alaska. *J. Phys. Oce.*, 39(4): 1050-1059.
- Hermann, A.J., E.N. Curchitser, E.L. Dobbins and D.B. Haidvogel, 2009. A comparison of remote versus local influence of El Nino on the coastal circulation of the Northeast Pacific. *Deep-Sea Res. II*, doi:10.1016/j.dsr2.2009.02.005.
- Fiechter J., A.M. Moore, C.A. Edwards, K.W. Bruland, E. Di Lorenzo, C.V. Lewis, T.M. Powell, E.N. Curchitser and K. Hedstrom, 2009. A simple approach to model iron limitation on primary production in the coastal Gulf of Alaska. *Deep-Sea Res. II*, doi:10.1016/j.dsr2.2009.02.010.
- Han W., A. M. Moore, J. Levin, B. Zhang, H. G. Arango, E.N. Curchister, E. Di Lorenzo, A. Gordon, J. Lin, 2009. Seasonal surface ocean circulation and dynamics in the Philippine Archipelago region during 2004-2008. *Dyn. Atm. Oce.*, 47, 114-137.
- Di Lorenzo, E., N. Schneider, K.M. Cobb, K. Chhak, P.J. Franks, A.J. Miller, J.C. McWilliams, S.J. Bograd, H. Arango, E.N. Curchitser, T.M. Powell and P. Rivere, 2008. North Pacific Gyre Oscillation links ocean climate and ecosystem change. *Geophys. Res. Lett.*, 35, L08607, doi:10.1029/2007GL032838.
- Haidvogel D.B., H. Arango, W.P. Budgell, B. Cornuelle, E.N. Curchitser, E. Di Lorenzo, K. Fennel, W.R. Geyer, A.J. Hermann, L. Lanerolle, J. Levin, J.C. McWilliams, A.J. Miller, A.M. Moore, T.M. Powell, A. Shchepetkin, C.R. Sherwood, R.P. Signell, J.C. Warner and J. Wilkin, 2008: Regional Ocean Forecasting in Terrain-Following Coordinates. *J. Comp. Phys.*, 227, 3595-3624.
- 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.*, 112, C09005, doi:10.1029/2007JC004105.
- 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, E.N., D.B. Haidvogel, A.J. Hermann, E. Dobbins, T.M. Powell and A. Kaplan, 2005. Multi-scale modeling of the North Pacific Ocean: Assessment of simulated basin-scale Variability (1996-2003). *J. Gophys. Res.*, 110, C11021, doi:101029/2005JC002902.
- Iskandarani, M, D.B. Haidvogel, J. Levin, E.N. Curchitser, and C.A. Edwards, 2002. Multi-scale Geophysical Modeling Using the Spectral Element Method. *Computing in Science and Engineering*, 4(5): 42-48.

- Curchitser, E.N., D.B. Haidvogel, and M. Iskandarani, 2001. Transient adjustment of circulation in a mid-latitude abyssal ocean basin with realistic geometry and bathymetry. *J. Phys. Oce.*, 31(3):725-745.
- Curchitser, E.N., D.B. Haidvogel, and M. Iskandarani, 1999. On the transient adjustment of a mid-latitude abyssal ocean basin with realistic geometry: The constant depth limit. *Dyn. Atm. Oce.*, 29:147-188.
- Curchitser, E.N., M. Iskandarani, and D.B. Haidvogel, 1998. Spectral element solution of the Shallow-Water Equations on multiprocessor computers. *J. Atmo. Oce. Tech.*, 15(2):510-521.
- Haidvogel, D.B., E.N. Curchitser, M. Iskandarani, R. Hughes, and M. Taylor, 1997. Global modeling of the ocean and atmosphere using the spectral element method. *Atmo.-Oce.* Vol XXXV, No. 1.
- Chyczewski, T., F. Marconi, R.B. Pelz, and E.N. Curchitser, 1993. Solution of the Euler and Navier-Stokes Equations on Parallel Processors Using a Transposed/Thomas ADI Algorithm. *Proceedings of 11th Computational Fluid Dynamics Conference*, AIAA paper 93-3310.
- Curchitser, E.N., R.B. Pelz, and F. Marconi, 1992. Solution of the Euler and Navier-Stokes equations on MIMD multiprocessors using cyclic reduction. *Proceedings of the 30th Aerospace Sciences Meeting*. AIAA paper 92-0561
- Curchitser E.N. and R.B. Pelz, 1991. Implementation of the Euler equations on MIMD, distributed memory, multiprocessor computers using cyclic reduction algorithms. *Parallel Computational Fluid Dynamics*, Elsevier Science Publishers, pp 97-112.

Professional activities

- 2007-2009** Member of the task team formulating a strategic plan for the development of the National Center for Atmospheric Research (NCAR) next generation comprehensive Earth System Model.
- 2007-present** Member of the Ecosystem Studies of Subarctic Seas (ESSAS) modeling working group.
- 2006-present** Member of Pacific International Consortium for the Exploration of the Seas (PICES) working group (WG-20): *Evaluation of Climate Change Projections*.
- 2006-present** Member of the Community Climate System Model (NCAR-CCSM) ocean working group.
- 2005-2008** Member of the National Science Foundation (NSF) Partnership for Advanced Computational Infrastructure (PACI) allocations committee.
- 1999-present** Grant and manuscript reviewer for the National Science Foundation (NSF), North Pacific Research Board (NPRB) and various journals including: *J. Geophys. Res.*, *J. Phys. Oce.*, *Deep Sea Res.* and *Prog. Oce.*