

BRIAN M. EMERY

http://euler.msi.ucsb.edu/brian_emery.htm

emery@msi.ucsb.edu

805-967-3388

EDUCATION

University of California, Santa Barbara

M.S. Mechanical Engineering, 1996.

University of California, Santa Barbara

B.S. Physics, 1992

EMPLOYMENT

Computer Network Technologist III, Marine Science Institute, UCSB, 1996 – present

Conceived of and designed an algorithm to automate the calibration of ocean current measuring radars using backscatter from container ships. Led a team of scientists that obtained more than \$400,000 to develop, test and deploy a software product that will run on radar site computers. Presently testing an operational prototype.

Developed MATLAB code and websites for automated, real-time processing of radar ocean current maps, drifting buoy temperature measurements, and lake dynamics data.

More than 10 years experience programming for scientific data analysis with MATLAB, emphasizing time series analysis, signal processing and data visualization.

Presently working 50% time as a computer systems administrator of the Marine Science Institute network, including over 20 servers.

Consultant, Codar Ocean Sensors, Ltd., Los Altos, CA , 2006 – 2009

Conducted validation studies of new ocean current data processing algorithms.

Wrote and published software tools for validating Bi-Static HF radar ocean current measurements.

Travelled to Japan and Nova Scotia to install and calibrate HF radar installations.

Graduate Student Researcher, Mechanical Engineering, UCSB, 1994 - 1996

Investigated eddy mixing and stirring in the North Atlantic, emphasizing fluid mechanics, turbulent flows, and statistical analysis of time series data.

GRANTS

NOAA SBIR Phase II , 2011-2013, \$399,883. HF Radar Calibration with Automatic Identification System Ships of Opportunity

NOAA SBIR Phase I , 2010, \$94,977. Ocean Current Radar Calibration with Ships of Opportunity and the Automatic Identification System

JOURNAL PUBLICATIONS

Emery, B., L. Washburn, C. Whelan and D. Barrick, Measuring Antenna Patterns for Ocean Current Radars with Ships of Opportunity, *Journal of Atmospheric and Oceanic Technology*, *manuscript in preparation*

Ohlmann, J. C., J. H. LaCasce, L. Washburn, A. J. Mariano, and B. Emery, 2012, Relative dispersion observations and trajectory modeling in the Santa Barbara Channel, *J. Geophys. Res.*, 117, C05040, doi:10.1029/2011JC007810

Ohlmann, C., P. White, L. Washburn, E. Terrill, B. Emery, and M. Otero, 2007, Interpretation of Coastal HF Radar Derived Surface Currents with High-Resolution Drifter Data, *Journal of Atmospheric and Oceanic Technology*, 24, 666-680, doi:10.1175/JTECH1998.1

Emery, B.M., L. Washburn, M. Love, M.M. Nishimoto, and J. C. Ohlmann, 2006, Do oil and gas platforms off California reduce recruitment of bocaccio (*Sebastes paucispinis*) to natural habitat? An analysis based on trajectories derived from high frequency radar, *Fisheries Bulletin*, 104, 391-400

Emery B.M., L. Washburn, and J.A. Harlan, 2004, Evaluating Radial Current Measurements from CODAR High-Frequency Radars with Moored Current Meters, *Journal of Atmospheric and Oceanic Technology*, 21, 8, 1259-1271

Washburn, L., B. M. Emery, B. H. Jones, D. G. Ondercin, 1998, Eddy stirring and phytoplankton patchiness in the subarctic North Atlantic in late summer, *Deep Sea Research Part I: Oceanographic Research Papers*, 45, 9, 1411-1439

PROCEEDINGS

Emery, B.M., L. Washburn, and J.A. Harlan, 2003, Evaluating radial component current measurements from CODAR high frequency radars and moored in situ current meters, *Proceedings of the First International Radiowave Oceanography Workshop*, Timberline Lodge, OR, 9-12 April

Washburn, L., E. H. Beckenbach, B. M. Emery, and J.A. Harlan, 2003, HF radar observations of surface currents in the vicinity of Pt. Conception California, *Proceedings of the First International Radiowave Oceanography Workshop*, Timberline Lodge, OR, 9-12 April

REPORTS

Emery, B. M., and S. MacIntyre, Expanding observations of mixing in Toolik Lake with the North American Regional Reanalysis, NSF Arctic LTER final report contribution, 2011

Emery, B. M. and L. Washburn, Evaluation of SeaSonde Hardware Diagnostic Parameters as Performance Metrics, NOAA IOOS final report, October 2007

Emery B. M., K. E. Laws, L. Washburn, and J. D. Paduan, Error Characterization in High Frequency Radar Ocean Surface Current Observations, NOAA IOOS final report, January 2007

PRESENTATIONS

Emery, B., L. Washburn, C. Whelan and D. Barrick, Measuring Antenna Patterns from AIS Ships of Opportunity, ROWG 6, November, 2012, University of South Florida

Washburn, L., B. Emery, C. Johnson, and C. Ohlmann, Oceanographic applications and developments in hardware and software using an array of high frequency radars in the Southern California Coastal Ocean Observing System, Radiowave Oceanography Workshop 10, September 26-29, 2010

Emery, B., M. Nishimoto, L. Washburn, and M. Love, Do oil and gas platforms off California reduce recruitment of Bocaccio (*Sebastes paucispinis*) to natural habitat? An analysis based on trajectories derived from high frequency radar, ROWG 4, Old Dominion University (Norfolk, VA) June 2-4, 2009

Emery, B., A Review of ROWG 2, ROWG 3, Sept, 2007, Scripps Institution of Oceanography, San Diego, CA

POSTER PRESENTATIONS

MacIntyre, S., J. P. Fram, Paul J. Kushner, and B. Emery, Effects of Large Scale Forcing on Thermal Regime and Mixing Dynamics of Lakes in the Alaskan Arctic ,LTER All Scientists Meeting, Estes Park, CO, September 2012

Emery, B., L. Washburn, D. Barrick, and C. Whelan, Antenna Patterns from AIS Ships of Opportunity, ROWG 5, April, 2011, Santa Barbara, CA

MacIntyre, S., A. Jonsson, M. Jansson, J. Aberg, D. Turney, B. Emery, and S. Miller, Buoyancy Flux, Turbulence, and the Gas Transfer Coefficient in a Stratified Lake, AGU Fall Meeting, San Francisco, CA, December, 2010

Reams, E., C Johnson, B. Emery, and L Washburn, Liquid Cooling for a SeaSonde Transmitter, ROWG 3, Sept, 2007, Scripps Institution of Oceanography, San Diego, CA

Johnson, C., B. Emery, and L Washburn, Custom Transmit Antennas for SeaSondes , ROWG 3, Sept, 2007, Scripps Institution of Oceanography, San Diego, CA

Yu, G., B. Emery, and L Washburn, Effects of Antenna Pattern Smoothing on SeaSonde Radial Data, ROWG 3, Sept, 2007, Scripps Institution of Oceanography, San Diego, CA

PROFESSIONAL SERVICE

Reviewer, Journal of Atmospheric and Oceanic Technology (3)

Reviewer, Marine Technology Society Journal (1)

ACTIVITIES

Currently enrolled in Matrix Analysis and Computation (ME/ECE/CS 210A), fall 2012

Steering Committee Member, Radiowave Operators Working Group (ROWG), 2004-present

Participant, Learning From Data telecourse, California Institute of Technology, spring 2012

ROWG 5 Workshop Host, Santa Barbara, CA, 2011

PUBLISHED CODE

MATLAB code repository of data analysis tools:

https://bitbucket.org/emery/hfrp_additions