DMITRY S. DUKHOVSKOY

Curriculum Vitae

Ph.D., Physical Oceanography
Associate Research Scientist
The Florida State University
Center for Ocean-Atmospheric Prediction Studies
Florida State University
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Tallahassee, FL 32306-2741, USA — Email: ddukhovskoy@fsu.edu

EDUCATION

Florida State University, Tallahassee, FL

Postdoctoral Fellow with Dr. J. O'Brien, Nov. 2003 – Sept. 2004

Project 1: Ocean response to tropical cyclones

Project 2: Generation mechanisms of topographic waves and their representation in hydrodynamic models

Project 3: Analysis of salinity variability in the Apalachicola Bay estuary from hydrographic observations

University of Alaska Fairbanks, Fairbanks, AK

Graduate research with Drs. A. Proshutinsky and M. Johnson, Aug. 1999 – Nov. 2003

Ph.D., Physical Oceanography, Nov. 2003 *(extended curriculum on mathematical statistics and data analysis; Recipient of the Student Alaska Sea Grant)*

Thesis: *"Mechanism of decadal variability of the Arctic Ocean – Greenland-Iceland-Norwegian seas"*

Saint-Petersburg State University, Saint-Petersburg, Russia

Graduate research with Dr. V. Roszhkov, Aug. 1994 – June 1996

Undergraduate study with Dr. V. Fouks, Sept. 1990 – June 1994

M.S., Physical Oceanography, June 1996

B.S., Physical Oceanography, June 1994

Project 1: "Statistical analysis of inertial oscillations in the Baltic Sea"

Project 2: "Analysis of hydrographic observations in the Laptev Sea: Characteristics of the tidal and inertial oscillations"

PROFESSIONAL EXPERIENCE

Florida State University	Associate Research Scientist	8/11 - present
	Assistant Research Scientist	3/07 – 8/11
	Research Associate	8/04-3/07
	Postdoctoral Fellow	11/03-8/04
Tallahassee Community College	Adjunct Faculty, Instructor	8/08 – 1/09
University of Alaska Fairbanks	Research Assistant	8/99-11/03
EcoShelf Ltd. (Russia)	Research Assistant	3/96-7/99
Arctic & Antarctic Res. Institute (Russia)	Sea Ice Data Analyst	8/94-8/97

SCIENTIFIC INTERESTS

• Mechanisms of climate variability in the Arctic Ocean and North Atlantic; • Freshwater in the Arctic – North Atlantic system; • Air-sea heat and momentum fluxes; • Numerical hydrodynamic modeling. • Topographic waves; • Deep ocean dynamics; • Mesoscale eddies; • Statistical methods and data analysis; • Model evaluation and comparison;

ACADEMIC ACTIVITIES

Doctoral Co-Directive Status, Department of Earth, Ocean and Atmospheric Sciences, FSU
Ph.D. Committee: T. Bhatrasataponkul, S.D. Asl
M.S. Committee: T. Nguyen, R. Nedbor-Gross
Senior Honors Thesis Committee: N. Heath
Postdoc Mentor: A. Persechino
Research Advisor: Y. Holguino, P. Rayet, J. Culin, S. Laverti, J. Ubnoske, N. Crock

LECTURES AND SEMINARS

2016 Overview of Storm Surge Modeling Techniques: Examples from the Gulf of Mexico, webinar for the Risk Management Solution
2016 Guest lecturer, Statistical Hypothesis Testing (1 lecture), FSU
2016 Fresh Water as an Essential Climate Variable in the Arctic Climate System, Global Climate Observation Conference, Amsterdam, The Netherlands
2015 Guest lecturer, Numerical Modeling: Finite-Volume Methods (1 lecture), FSU
2015 Guest lecturer, Dynamics and thermodynamics of sea ice (1 lecture), FSU
2013 Guest lecturer, Numerical Modeling: Finite-Volume Methods (2 lectures), FSU
2009 Guest lecturer, Computer Models in Fluid Dynamics (2 lectures), FSU
2009 Simulation of a Storm Surge in the North-Eastern Gulf of Mexico, University of South Carolina, SC
2008 Simulation and 3D visualization of the deep currents over the Sigsbee Escarpment in the Gulf of Mexico, FSU, FL
2008 Adjunct Faculty, College Algebra II, Tallahassee Community College
2006 A mechanism of Arctic decadal variability, WHOI, MA
2004 Guest lecturer, Time Series Analysis (4 lectures), FSU

PROFESSIONAL SOCIETIES

American Geophysical Union

REVIEWER RESPONSIBILITIES

Journals: Journal of Physical Oceanography, Ocean Modelling, Continental Shelf Research, Journal of Geophysical Research – Oceans, Marine Geodesy, Environmental Modelling, Dynamics of Atmosphere and Oceans, Estuarine, Coastal and Shelf Science
Funding agencies: Alaska Sea Grant, National Science Foundation

PEER-REVIEWED PUBLICATIONS

Dukhovskoy, D.S., M.A. Bourassa, G.N. Petersen, and J. Steffen, 2017. *Comparison of the ocean surface vector winds from atmospheric reanalysis and scatterometer-based wind products over the Nordic Seas and the northern North Atlantic and their application for ocean modeling,* JGR (in press).

Asl, S.D., **D.S. Dukhovskoy,** M. Bourassa, I.R. MacDonald, 2017. *Hindcast modeling of oil slick persistence from natural seeps.* Remote Sensing of Environment, 189, 96-107.

Hiester, H.R., S.L. Morey, **D. Dukhovskoy,** E.P. Chassignet, V.H. Kourafalou, C. Hu, 2016. *A topological approach for quantitative comparisons of ocean model fields to satellite ocean color data.* Methods in Oceanography, 17, 232-250.

Ozgokmen, T.M, E.P. Chassignet, C.N. Dawson, **D. Dukhovskoy**, G. Jacobs, J. Ledwell, O. Garcia-Peneda, I.R. MacDonald, S.L. Morey, M.J. Olascoaga, A.C. Poje, M. Reed, and J. Skancke, 2016. *Over what area did the oil and gas spread during the 2010 Deepwater Horizon oil spill?* Oceanography, 29(3), 96-107.

Dukhovskoy, D.S., P.G. Myers, G. Platov, M.-L. Timmermans, B. Curry, A. Proshutinsky, J.L. Bamber, E. Chassignet, X. Hu, C.M. Lee, R. Somavilla (2016), *Greenland freshwater pathways in the sub-Arctic Seas from model experiments with passive tracers*. J. Geophys. Res. - FAMOS special issue, in press, doi:10.1002/2015JC011290.

Dukhovskoy, D.S., J. Ubnoske, E. Blanchard-Wrigglesworth, H. Hiester, and A.Yu. Proshutinsky, (2015), *Skill metrics for evaluation and comparison of sea ice models.* J. Geophys. Res., doi:10.1002/2015JC010989.

Dukhovskoy, D.S., R.R. Leben, E.P. Chassignet, C. Hall, S.L. Morey, and R. Nedbor-Gross (2015), *Characterization of the Uncertainty of Loop Current Metrics using a Multidecadal Numerical Simulation and Altimeter Observations*, Deep-Sea Res. I, in press.

Proshutinsky, A., **D. Dukhovskoy,** M.-L. Timmermans, R. Krishfield (2014), *Arctic circulation regimes*. Philosophical Transactions Royal Society A, A 373: 20140160, http://dx.doi.org/10.1098/rsta.2014.0160

Nedbor-Gross, R., **D.S. Dukhovskoy,** M.A. Bourassa, S.L. Morey, and E. Chassignet (2014), *Investigation of the relationship between the Yucatan Channel transport and the Loop Current area in a multi-decadal numerical simulation,* MTS Journal, 48(4), 15-26.

Morey, S.L., and **D.S. Dukhovskoy** (2013), *A downscaling method for simulating deep current interactions with topography – Application to the Sigsbee Escarpment,* Ocean Modelling, 69, 50-63, doi:10.1016/j.ocemod.2013.05.008.

Garcia-Pineda, O., I. MacDonald, C. Hu, J. Svejkovsky, M. Hess, **D. Dukhovskoy**, and S.L. Morey (2013), *Detection of floating oil anomalies from the Deepwater Horizon oil spill with synthetic aperture radar*, Oceanography, 26(2), 124-137.

Morey, S.L. and **D.S. Dukhovskoy,** 2012: *Analysis methods for characterizing salinity variability from multivariate time series applied to the Apalachicola Bay estuary,* J. Atmos. Ocean. Tech., 29, doi:10.1175/JTECH-D-11-00136.1.

Harris, R., C. Pollman, D. Hutchinson, W. Landing, D. Axelrad, S. Morey, **D. Dukhovskoy**, and K. Vijayaraghavan, 2012*: A screening model analysis of mercury sources, fate, and bioaccumulation in the Gulf of Mexico,* Environmental Research, 119, 53-63.

Harris, R., C. Pollman, W. Landing, D. Evans, D. Axelrad, D. Hutchinson, S. Morey, D. Rumbold, **D. Dukhovskoy**, D. Adams, K. Vijayaraghavan, C. Holmes, D. Atkinson, T. Myers, and E. Sunderland, 2012: *Mercury in the Gulf of Mexico: Sources to receptors, Environmental Research,* 119, 42-52.

Dukhovskoy, D.S. and S.L. Morey, 2011: *Simulation of the Hurricane Dennis storm surge and considerations for vertical resolution,* J. Natural Hazards, DOI 10.1007/s11069-010-9684-5, 58(1), 511-540.

Gouillon, F., S.L. Morey, **D.S. Dukhovskoy,** and J.J. O'Brien, 2010: *Forced tidal response in the Gulf of Mexico,* JGR, 115, C10050, doi:10.1029/2010JC006122.

Harris R., C. Pollman, W. Landing, S. Morey, **D. Dukhovskoy,** and D. Axelrad, 2010: *Development of a dynamic Mercury cycling model for the Gulf of Mexico,* Geochimica Et Cosmochimica Acta, 74(12), A383.

Dukhovskoy, D.S., S.L. Morey, P.J. Martin, J.J. O'Brien, C. Cooper, 2009: *Application of a vanishing, quasi-sigma, vertical coordinate for simulation of high-speed, deep currents over the Sigsbee Escarpment in the Gulf of Mexico,* Ocean Modelling, 28(4), 250-265, doi: 10.1016/j.ocemod.2009.02.009.

Morey, S.L., **D.S. Dukhovskoy**, and M.A. Bourassa, 2009: *Connectivity between variability of the Apalachicola River flow and the biophysical oceanic properties of the northern West Florida Shelf*, Continental Shelf Research, doi:10.1016/j.csr.2009.02.003.

Dukhovskoy, D.S., S.L. Morey, and J.J. O'Brien, 2009: *Generation of baroclinic topographic waves by a tropical cyclone impacting a low-latitude continental shelf,* Continental Shelf Research, 29, 333-351, doi: 10.1016/j.csr.2008.01.007.

Dukhovskoy, D.S., S.L. Morey, and J.J. O'Brien, **2006**: *Influence of multi-step topography on barotropic waves and consequences for numerical modeling*, Ocean Modelling, 14, 45-60, doi:10.1016/j.ocemod.2006.03.002.

Dukhovskoy, D., M. Johnson, and A. Proshutinsky, **2006**: *Arctic decadal variability from an idealized atmosphere-ice-ocean model. 1. Model description, calibration, and validation,* J. Geophys. Res., 111, C06028, doi:10.1029/2004JC002821

Dukhovskoy, D., M. Johnson, and A. Proshutinsky, **2006**: *Arctic decadal variability from an idealized atmosphere-ice-ocean model. 2. Simulation of decadal oscillations,* J. Geophys. Res., 111, C06029, doi:10.1029/2004JC002820.

Morey, S.L., M.A. Bourassa, **D.S. Dukhovskoy,** and J.J. O'Brien, 2006: *Modeling Studies of the Upper Ocean Response to a Tropical Storm*, J. Ocean Dynamics, 56 (5-6), 594-606, DOI 10.1007/s10236-006-0085-y.

Morey, S.L., S. Baig, M.A. Bourassa, **D.S. Dukhovskoy**, and J.J. O'Brien, 2006: *Remote forcing contribution to storm-induced sea level rise during Hurricane Dennis*, Geophys. Res. Lett., 33, L19603, doi:10.1029/2006GL027021.

Dukhovskoy, D.S., M.A. Johnson, and A. Proshutinsky, 2004: *Arctic decadal variability: An auto-oscillatory system of heat and fresh water exchange*, Geophys. Res. Lett., 31, L03302, doi:10.1029/2003GL019023.

REPORTS AND OTHER PUBLICATIONS

MacDonald, I., **D. Dukhovskoy**, M. Bourassa, S. Morey, O. Garcia-Pineda, S.D. Asl, C. Hu, M. Reed, and J. SCkanke, (2017), Remote Sensing Assessment of Surface Oil Transport and Fate during Spills in the Gulf of Mexico, Synthesis Report, U.S. Department of the Interior, BOEM, (in revision).

Morey, S.L., **D.S. Dukhovskoy**, and C. Cooper (2010), Measurements and modeling of topographically trapped waves along the Sigsbee Escarpment, 2010 Offshore Technology Conference, OTC 20694

Morey, S.L., M.A. Bourassa, **D.S. Dukhovksoy**, and J.J. O'Brien (2006), Modeling the impacts of remote forcing on hurricane storm surge, in Research Activities in Atmospheric and Ocean Modeling, World Meteorological Organization

RECENT PRESENTATIONS AND CONFERENCE PROCEEDINGS

Dukhovskoy, D.S., E. Chassignet, P.J. Hogan, E.J. Metzger, O.M. Smedstad, P.G. Posey, L. Stefanova, A.J. Wallcraft (2016), Current state and recent changes in the Arctic Ocean from the HYCOM-NCODA Global ocean and sea ice prediction system, AGU, San Francisco, CA.

Dukhovskoy, D.S., M.A. Bourassa, J. Steffen, and G.N. Petersen (2016), Evaluation of ocean surface winds from reanalyses in the Nordic Seas, NASA OVWST Workshop, Sapporo, Japan.

Dukhovskoy, D.S., A. Proshutinsky, P. Myers, G. Platov, J. Bamber, M.-L. Timmermans, B. Curry, R. Somavilla, and M. Bourassa (2016), Role of Greenland Meltwater in the changing Arctic, EGU, Vienna, Austria (invited)

Dukhovskoy, D.S. (2015). Coastally trapped freshwater currents on the subpolar shelf: Variability and forcing of the East Greenland Current from a model experiment. Gordon Research Conference.

Dukhovskoy, D.S., M. Bourassa, and A. Proshutinsky (2015). Freshwater pathways in the sub-Arctic Seas from a Greenland freshwater experiment. ISAR, Japan.

Dukhovskoy, D., A. Proshutinsky, C. Herbaut, Y. Aksenov, P. Myers, G. Platov, and E. Popova (2015). Arctic circulation regimes and Greenland freshwater in the sub-Arctic seas. EGU, Vienna

Dukhovskoy,D., M. Bourassa, and A. Proshutinsky (2014). Relation Between Large-Scale Atmospheric Variability and Ocean Circulation in the Nordic Seas. FAMOS workshop, WHOI, MA.

Dukhovskoy, D.S and M.A. Bourassa (2014). Uncertainty in Ocean Surface Winds over the Nordic Seas, OVWST Workshop, Brest, France.

Dukhovskoy, D.S. and M.A. Bourassa (2014). Intercomparison of several ocean surface wind products over the Nordic Seas, EGU, Viena, Austria.

Dukhovskoy, D.S., M.A. Bourassa, and A. Proshutinsky (2014). Freshwater pathways in the Nordic Seas from numerical experiments, Ocean Science Meeting, Honolulu, HI.

FIELD EXPERIENCE

Research diving, Gulf of Mexico, Academic Diving Program, FSU, 2004-2014
Research diving, Gulf of Alaska, Academic Diving Program, UAF, 2003
Gulf of Alaska, GLOBEC project, hydrological observations, July-August, 2001
Barents Sea, hydrological observations, Murmansk Marine Biological Institute, June – July, 1993
Baltic Sea, hydrological observations, Saint-Petersburg State University, July, 1992