

## **Dmitry S. Dukhovskoy**

### **Curriculum Vitae**

PhD, Physical Oceanography, Assistant Scholar/Scientist  
Center for Ocean-Atmospheric Prediction Studies  
Florida State University  
Tallahassee, FL 32306-2840, USA  
phone: +1 - 850 - 644-1168  
e-mail: ddmitry@coaps.fsu.edu

### **Education**

University of Alaska Fairbanks, PhD, Physical Oceanography, 2003  
Saint-Petersburg State University, School of Law, M.L., 1998  
Saint-Petersburg State University, M.S., Physical Oceanography, 1996  
Saint-Petersburg State University, B.S., Physical Oceanography and Hydrometeorology, 1994

### **Professional experience**

2007 – present: Assistant Scholar/Scientist, Center for Ocean-Atmospheric Prediction Studies, FSU.  
2004 – 2007: Research Associate, Center for Ocean-Atmospheric Prediction Studies, FSU.  
2003 – 2004: Postdoctoral Associate, Center for Ocean-Atmospheric Prediction Studies, FSU.  
1999 – 2003: Research Assistant at the Institute of Marine Science, UAF.  
1996-1999: Research Assistant, “*EcoShelf*” (St. Petersburg, RF).  
1994-1997: Data Analyst, Department of Ice Forecasts, Arctic & Antarctic Research Institute, St. Petersburg, RF.

### **Research Funding**

Arctic Ocean Model Intercomparison Project (AOMIP), co-P.I., NSF, 2008-2011  
Simulation and analysis of intense currents along the Sigsbee Escarpment, co-P.I., DeepStar MetOcean Committee, 2008-2010.  
Development of a southeastern United States real-time high resolution coupled ocean atmospheric modeling system, DEP of Florida, Co-PI, 2008  
Northern Gulf of Mexico Cooperative Institute, NOAA Cooperative Institute, 2006-2011  
US GODAE: Global Ocean Prediction with the Hybrid Coordinate Ocean Model, ONR, 2006-2009  
Development of a southeastern United States real-time high resolution coupled ocean atmospheric modeling system, FLCOOS/DEP, Co-PI, 2008  
Analysis of the Variability of Apalachicola Bay Water Properties in Response to Variations in the Apalachicola River Discharge Rate, co-P.I., Florida Dept. of Environmental Protection, 2006 – 2007  
Development of a high resolution storm surge model, NOAA ARC, 2006-2007  
Development of a Model of Strong Currents near the Sigsbee Escarpment, co-P.I., DeepStar MetOcean Committee, 2006  
Validation of a Gulf of Mexico Loop Current Forecast Model, DeepStar MetOcean Committee, 2004  
Freshwater Flux in the Arctic Ocean – Greenland Sea System, P.I., Alaska Sea Grant, NOAA, Department of Commerce, 2001-2003.

### **Scientific Interests**

Ocean modelling (regional ocean models, storm surge, unstructured grid)  
Ocean dynamics (mesoscale eddies and topographic Rossby waves)  
Data analysis

### **Field Experience**

Research diving, Gulf of Mexico, Academic Diving Program, FSU, 2006-present  
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

### **Membership**

American Geophysical Union

### **Publications**

- 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, in press.
- 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.
- Todd, A., **D. Dukhovskoy**, and M. Griffin, 2009: Effectiveness of the Keetch-Byram Drought Index toward the estimation of fires in Florida, Agricultural and Forest Meteorology, in review.
- Steven L. Morey, **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, in press.
- Gouillon, F., S. Morey, **D. Dukhovskoy**, J.J. O'Brien, 2009: Forced tidal response in the Gulf of Mexico, J. Geophys. Res. Oceans, in review.
- 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.
- Rozhkov, V., Yu. Klevantsov, and **D. Dukhovskoy**, **1998**: *Inertial waves in the Baltic Sea*, in: Materials of the Oceanographic Conference, Moscow (in Russian).

**Presentations**

- Dukhovskoy, D.S., P. Posey, J. Metzger, and Eric Chassignet (2009), Validation analysis of the 0.72 degree HYCOM/CICE 4.0 2003-2006, 12<sup>th</sup> AOMIP Workshop, Woods Hole, MA
- Dukhovskoy, D.S. and S.L. Morey (2008), Simulation and visualization of the deep currents over the Sigsbee Escarpment in the Gulf of Mexico, Physical Oceanography Seminar, FSU
- Dukhovskoy, D.S., and S.L. Morey (2008), Simulation and validation of a storm surge in bays and estuaries with complex coastline geometry, AGU, San Francisco, CA
- Dukhovskoy, D.S., and S.L. Morey (2008), Application of FVCOM for simulating storm surge in the northeastern Gulf of Mexico, Unstructured Grid Workshop, Halifax, NS, Canada.
- Dukhovskoy, D.S., E. Chassignet, S.L. Morey (2008), A high-resolution model of the Apalachee Bay, Northern Gulf Institute Workshop, Biloxi, MS.
- Dukhovskoy, D.S., and S.L. Morey (2007), Development of a Nested Storm Surge Modeling System, Gordon Research Conference Coastal Oceanography, New London, NH.
- Dukhovskoy, D.S., M.A. Bourassa, S.L. Morey (2007), *Modeling Studies of the Ocean Response to a Tropical Cyclone*, Decadal Variability Workshop, Kona, HI
- Dukhovskoy, D.S., S.L. Morey (2006), *Modeling Topographically Trapped Waves in the Shelf Seas*, 13th International Biennial Conference on Physics of Estuaries and Coastal Seas, Astoria, OR
- Dukhovskoy D.S. (2006), seminar: A mechanism of Arctic decadal variability, WHOI
- Dukhovskoy, D.S., S.L. Morey, and J.J. O'Brien (2006), *The long-wave response of low-latitude shelves to tropical cyclones*, Caribbean Climate Symposium, Mayagüez, PR
- Dukhovskoy, D.S., S.L. Morey, and J.J. O'Brien (2006), *Topographic Waves on a Continental Shelf With a Multi-Step Topography*, Eos Trans. AGU, 87(36), Ocean Sci. Meet. Suppl., Abstract OS16J-04, Honolulu, HI
- Dukhovskoy, D.S., S.L. Morey, M.A. Bourassa and J.J. O'Brien (2006), *Contribution of Wind-Forced Coastally Trapped Waves to Coastal Sea Level Rise During a Hurricane*, annual AMS meeting, Atlanta, GA
- Dukhovskoy, D.S., S.L. Morey, and J.J. O'Brien (2005), *Topographic Rossby Wave in a Z-level ocean model*, EOS Trans. AGU, 86(18), Jt. Assem. Suppl., Abstract OS11A-01, New Orleans, LA.
- Dukhovskoy, D.S., M.A. Johnson, and A.Yu. Proshutinsky (2004), Invited talk: *Role of sea ice in a mechanism of Arctic decadal variability*, Eos Trans. AGU, 85(47), Fall Meet. Suppl., Abstract C52A-03 INVITED, San Francisco, CA.
- Morey, S.L., Dukhovskoy, D.S., and J.J. O'Brien (2004), *Forecast of mesoscale eddies and Loop Current using NCOM*, DeepStar Model Intercomparison Workshop, Houston, TX.
- Dukhovskoy, D.S., M.A. Johnson, and A.Yu. Proshutinsky (2004), *Heat and Fresh Water Exchange Between the Arctic Ocean and the GIN Sea as a Driving Mechanism of Arctic Decadal Variability*, CRCES-IPRC Workshop on Decadal Variability, Kona, Hawaii.
- Dukhovskoy, D.S. (2003), *Study of Decadal Variability in the Arctic Ocean – GIN Sea Ice-Ocean-Atmosphere Climate System*, invited participant at Physical Oceanography Dissertation Symposium II, Kona, Hawaii.
- Dukhovskoy, D.S., M.A. Johnson, and A.Yu. Proshutinsky (2003), *Model Study of the Decadal Variability of the Arctic Ocean – Greenland Sea System*, 7<sup>th</sup> Conference on Polar Meteorology and Oceanography and Joint Symposium on High-Latitude Climate Variations held by AMS, Hyannis, Massachusetts.
- Dukhovskoy, D.S., M.A. Johnson, and A.Yu. Proshutinsky (2002), *Model Studies of Freshwater Fluxes in the Arctic Ocean*, Eos Trans. AGU, 83(47), Fall Meet. Suppl., Abstract OS22A-0233, San Francisco, CA.
- Dukhovskoy, D.S. and M.A. Johnson (2002), *Arctic Ocean Model Intercomparison Using Sound Speed*, Eos Trans. AGU, 83(19), Spring Meet. Suppl., Abstract GC51A-04, Washington DC.

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Dukhovskoy, D.S. and A. Proshutinsky (2000), *Analysis of the Arctic Sea Level Pressure Simulated by the CCSM*, Cite abstracts as Eos Trans. AGU, 81 (48), Fall Meet. Suppl., Abstract A61C-11, San Francisco, CA.

### **Teaching experience**

- 2008, August – December, Adjunct Faculty, Instructor, College Algebra II, Tallahassee Community College
- 2008, 2 lectures on Finite-Volume Methods in ocean modeling in “Numerical methods in oceanography” of Dr. Chassignet (FSU, Dept. of Oceanography)
- 2005, mentoring a summer visiting student (Yurin Holguino, Puerto-Rico), project: Development of fine-resolution ocean model of Puerto-Rican part of the Caribbean Basin.
- 2004, 4 lectures on the introductory statistics in the course of “Time series analysis” of Dr. J. O’Brien (FSU, Dept. of Meteorology)
- 2004, participation in the REU project by co-supervising student (Suean Laverti) in his research on development of 2-layer ocean model of the Gulf of Guinea and Gulf of Mexico.

### **Relevant certificates**

Active Scientific Diver, Academic Diving Program, FSU  
Advanced Scuba Diver Certificate (PADI)  
Research Scuba Diver Certificate (PADI)  
Dry Suit Scuba Diver Certificate (PADI)  
Scuba Lifesaving and Accident Management (YMCA)  
Nitrox Scuba Diver (YMCA)