

Dimitris Menemenlis — Curriculum Vitae

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Education:

B.Eng. Honours, McGill University, Montreal, Quebec, Canada, 1984.

M.A.Sc., Waterloo University, Ontario, Canada, 1987.

Ph.D., University of Victoria, British Columbia, Canada, 1993.

Thesis topic: Acoustical measurement of velocity, vorticity and turbulence in the Arctic boundary layer beneath ice. Thesis advisor: David Farmer.

Recent Employment:

1998–present: Scientist. Jet Propulsion Laboratory, California Institute of Technology, Pasadena.

1993–1998: Scientist. Earth, Atmospheric, and Planetary Sciences, Massachusetts Institute of Technology, Cambridge. Research advisor: Carl Wunsch.

Languages: English, French, and Greek.

Publications:

- X. Davis, L. Rothstein, W. Dewar, and D. Menemenlis (in press): Numerical investigations of seasonal and interannual variability of North Pacific Subtropical Mode Water and its implications for Pacific climate variability. *J. Clim.*
- A. Nguyen, D. Menemenlis, and R. Kwok (in press): Arctic ice-ocean simulation with optimized model parameters: approach and assessment. *J. Geophys. Res.*
- M. Losch, D. Menemenlis, P. Heimbach, J. Campin, and C. Hill (2010). On the formulation of sea-ice models. Part 1: Effects of different solver implementations and parameterizations. *Ocean Modelling*, **33**, 129–144.
- P. Heimbach, D. Menemenlis, M. Losch, J. Campin, and C. Hill (2010). On the formulation of sea-ice models. Part 2: Lessons from multi-year adjoint sea ice export sensitivities through the Canadian Arctic Archipelago. *Ocean Modelling*, **33**, 145–158.
- A. Nguyen, D. Menemenlis, and R. Kwok (2009). Improved modeling of the Arctic halocline with a sub-grid-scale brine rejection parameterization. *J. Geophys. Res.*, **114**, C11014.
- A. Condron, P. Winsor, C. Hill, and D. Menemenlis (2009). Response of the Arctic freshwater budget to extreme NAO forcing. *J. Climate*, **22**, 2422–2437.
- M. Manizza, M. Follows, S. Dutkiewicz, J. McClelland, D. Menemenlis, C. Hill, A. Townsend-Small, and B. Peterson (2009). Modeling transport and fate of riverine dissolved organic carbon in the Arctic Ocean. *Global Biogeochem. Cycles.*, **23**, GB4006.
- N. Gruber, M. Gloor, S. Fletcher, S. Doney, S. Dutkiewicz, M. Follows, M. Gerber, A. Jacobson, F. Joos, K. Lindsay, D. Menemenlis, A. Mouchet, S. Mller, J. Sarmiento, and T. Takahashi (2009). Oceanic sources, sinks, and transport of atmospheric CO₂. *Global Biogeochem. Cycles*, **23**, GB1005.
- B. Dushaw, P. Worcester, W. Munk, R. Spindel, J. Mercer, B. Howe, K. Metzger, T. Birdsall, R. Andrew, M. Dzieciuch, B. Cornuelle, and D. Menemenlis (in press). A decade of acoustic thermometry in the North Pacific Ocean. *J. Geophys. Res.*114, C07021.
- D. Menemenlis, J. Campin, P. Heimbach, C. Hill, T. Lee, A. Nguyen, M. Schodlock, and H. Zhang (2008). ECCO2: High resolution global ocean and sea ice data synthesis. *Mercator Ocean Quarterly Newsletter*, **31**, 13–21.
- G. Boezio, D. Menemenlis, and C. Mechoso (2008). Impact of ECCO Ocean State Estimates on the Initialization of Seasonal Climate Forecasts. *J. Climate*, **21**, 1929–1947.
- B. Fox-Kemper and D. Menemenlis (2008). Can Large Eddy Simulation Techniques Improve Mesoscale Rich Ocean Models? *Ocean Modeling in an Eddy Regime*, ed. Matthew Hecht & Hiroyasu Hasumi, American Geophysical Union, 319–338.

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- R. Kwok, E. Hunke, W. Maslowski, D. Menemenlis, and J. Zhang (2008). Variability of sea ice simulations assessed with RGPS kinematics. *J. Geophys. Res.*, **131**, C11012.
- D. Menemenlis, I. Fukumori, and T. Lee (2007). Atlantic to Mediterranean sea level difference driven by winds near Gibraltar Strait. *J. Phys. Oceanogr.*, **37**, 359–376.
- I. Fukumori, D. Menemenlis, and T. Lee (2007). A near-uniform basin-wide sea level fluctuation of the Mediterranean Sea. *J. Phys. Oceanogr.*, **37**, 338–358.
- C. Hill, D. Menemenlis, R. Ciotti, and C. Henze (2007). Investigating solution convergence in a global ocean model using a 2048-processor cluster of distributed shared memory machines. *Scientific Programming*, **15**, 107–115.
- S. Fletcher, N. Gruber, A. Jacobson, M. Gloor, S. Doney, S. Dutkiewicz, M. Gerber, M. Follows, F. Joos, K. Lindsay, D. Menemenlis, A. Mouchet, S. Müller, and J. Sarmiento (2007). Inverse estimates of the oceanic sources and sinks of natural CO₂ and their implied oceanic transport. *Global Biogeochem. Cycles*, **21**, GB1010.
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- N. Krakauer, J. Randerson, F. Primeau, N. Gruber, and D. Menemenlis (2006). Carbon isotope evidence for the latitudinal distribution and wind speed dependence of the air-sea gas transfer velocity. *Tellus*, **58B**, 390–417.
- P. Heimbach, R. Ponte, C. Evangelinos, G. Forget, M. Mazloff, D. Menemenlis, S. Vinogradov, and C. Wunsch (2006). Combining altimetric and all other data with a general circulation model. In Proceedings of the 15 Years of Progress in Radar Altimetry Symposium. ESA Special Publication SP-614, ISBN 92-9092-925-1, ESA Publications Division, ESTEC, 2200 AG Noordwijk, The Netherlands.
- D. Menemenlis, C. Hill, A. Adcroft, J. Campin, B. Cheng, B. Ciotti, I. Fukumori, P. Heimbach, C. Henze, A. Köhl, T. Lee, D. Stammer, J. Taft, and J. Zhang (2005). NASA supercomputer improves prospects for ocean climate research. *Eos Trans. AGU*, **86**, 89, 95–96.
- D. Menemenlis, I. Fukumori, and T. Lee (2005). Using Green’s functions to calibrate an ocean general circulation model. *Mon. Weather Rev.*, **133**, 1224–1240.
- R. Gross, I. Fukumori, and D. Menemenlis (2005). Atmospheric and oceanic excitation of decadal-scale earth orientation variations. *J. Geophys. Res.*, **110**, B09405.
- R. Gross, I. Fukumori, D. Menemenlis, and P. Gegout (2004). Atmospheric and oceanic excitation of length-of-day variations during 1980-2000. *J. Geophys. Res.*, **109**, B01406.
- I. Fukumori, T. Lee, B. Cheng, and D. Menemenlis (2004). The origin, pathway, and destination of Niño3 water estimated by a simulated passive tracer and its adjoint. *J. Phys. Oceanogr.*, **34**, 582–604.
- P. Worcester, B. Cornuelle, B. Dushaw, M. Dzieciuch, B. Howe, D. Menemenlis, J. Mercer, W. Munk, R. Spindel, D. Stammer, and M. Zarnetske (2004). Acoustic remote sensing of large-scale temperature variability in the North Pacific Ocean. *Gayana*, **68**, 576–577.
- R. Gross, I. Fukumori, and D. Menemenlis (2003). Atmospheric and oceanic excitation of the Earth’s wobbles during 1980-2000. *J. Geophys. Res.*, **108**, 2370.
- P. Fieguth, D. Menemenlis, and I. Fukumori (2003). Mapping and pseudoinverse algorithms for ocean data assimilation. *IEEE Trans. Geosci. Remote Sens.*, **41**, 43–51.
- T. Lee, I. Fukumori, D. Menemenlis, Z. Xing, and L. Fu (2002). Effects of the Indonesian Throughflow on the Pacific and Indian Oceans. *J. Phys. Oceanogr.*, **5**, 1404–1429.
- D. Menemenlis and M. Chechelnitsky (2000). Error Estimates for an Ocean General Circulation Model From Altimeter and Acoustic Tomography Data. *Mon. Weather Rev.*, **128**, 763–778.

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- B. Dushaw, G. Bold, C.-S. Chiu, J. Colosi, B. Cornuelle, Y. Desaubies, M. Dzieciuch, A. Forbes, F. Gaillard, A. Gavrilov, J. Gould, B. Howe, M. Lawrence, J. Lynch, D. Menemenlis, J. Mercer, P. Mikhalevsky, W. Munk, I. Nakano, F. Sshott, U. Send R. Spindel, T. Terre, P. Worcester, C. Wunsch (2001). Observing the Ocean in the 2000s: A Strategy for the Role of Acoustic Tomography in Ocean Climate Observation. In *Observing the Oceans in the 21st Century*, C. J. Koblinsky and N. R. Smith (Eds), GODAE Project Office and Bureau of Meteorology, Melbourne.
- J. Colosi and the ATOC group (1999). A Review of Recent Results on Ocean Acoustic Wave Propagation in Random Media: Basin Scales. *IEEE J. Oceanic Eng.*, **24**, 138–155.
- B. Dushaw and the ATOC group (1999). Multimegameter-Range Acoustic Data Obtained by Bottom-Mounted Hydrophone Arrays for Measurement of Ocean Temperature. *IEEE J. Oceanic Eng.*, **24**, 202–214.
- The ATOC Consortium (1998). Ocean Climate Change: Comparison of Acoustic Tomography, Satellite Altimetry, and Modeling. *Science*, **281**, 1327–1332.
- P. Fieguth, D. Menemenlis, T. Ho, C. Wunsch, and A. Willsky (1998). Mapping Mediterranean Altimeter Data with a Multiresolution Optimal Interpolation Algorithm. *J. Atmos. Oceanic Technol.*, **15**, 535–546.
- D. Menemenlis and C. Wunsch (1997). Linearization of an Oceanic General Circulation Model for Data Assimilation and Climate Studies. *J. Atmos. Oceanic Technol.*, **14**, 1420–1443.
- D. Menemenlis, T. Webb, C. Wunsch, U. Send, and C. Hill (1997). Basin-Scale Ocean Circulation from Combined Altimetric, Tomographic and Model Data. *Nature*, **385**, 618–621.
- D. Menemenlis, P. Fieguth, C. Wunsch, and A. Willsky (1997). Adaptation of a Fast Optimal Interpolation Algorithm to the Mapping of Oceanographic Data. *J. Geophys. Res.*, **102**, 10,573–10,584.
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- D. Menemenlis, D. Farmer, and P. V. Czipott (1995). A Note on Infragravity Waves in the Arctic Ocean. *J. Geophys. Res.*, **100**, 7089–7093.
- D. Menemenlis (1994). Line-Averaged Measurement of Velocity Fine Structure in the Ocean Using Acoustical Reciprocal Transmission. *Int. J. Remote Sensing*, **15**, 267–281.
- D. Menemenlis (1993). Acoustical Measurement of Velocity, Vorticity and Turbulence in the Arctic Boundary Layer Beneath Ice. Ph.D. Thesis, University of Victoria, British Columbia, Canada.
- D. Menemenlis and D. Farmer (1992). Acoustical Measurement of Current and Vorticity Beneath Ice. *J. Atmos. Oceanic Technol.*, **9**, 827–849.
- P. Czipott, M. Levine, C. Paulson, D. Menemenlis, D. Farmer, and R. Williams (1991). Ice Flexure Forced by Internal Wave Packets in the Arctic Ocean. *Science*, **254**, 832–835.
- D. Menemenlis (1987). Alternative Devices and Converter Configurations for D.C. Power Transmission. M.A.Sc. Thesis, Waterloo University, Ontario, Canada.