



Avijit Gangopadhyay

Associate Dean

School for Marine Science and Technology

Professor

Department of Estuarine and Ocean Sciences

School for Marine Science and Technology

University of Massachusetts Dartmouth

Honorary Associate

Harvard Oceanography Group

Research Interests

My primary research interest is in ocean circulation and numerical modeling. During my Ph.D. studies at the University of Rhode Island, I worked on Gulf Stream separation dynamics and autoregressive modeling of gappy and sparse satellite time-series. After earning my Ph.D., I joined the Harvard Oceanography Group and built expertise in initialization, validation, and calibration of dynamical models for the Gulf Stream region for mesoscale forecasting. After Harvard, I joined a team of scientists at NASA's Jet Propulsion Laboratory working on basin-scale numerical models in both the Atlantic and the Pacific.

Current Research

My current research activities include coastal operational ocean modeling (Strait of Sicily, Arabian Sea, Brazil Bight, Gulf of Maine/Georges Bank); basin-scale circulation modeling; the North Atlantic Oscillation and its impact on the Gulf Stream, the Gulf of Maine and the ecosystem; and synthesis of multi-scale, multi-disciplinary data sets from satellite and in-situ observational systems (PORSEC 2000, SeaWiFS, Cod and Climate).

Recent Publications

- Brown, W.S., A. Gangopadhyay, F.L. Bub, Z. Yu, and G. Strout, and A.R. Robinson, 2007. An Operational Circulation Modeling System for the Gulf of Maine/Georges Bank Region, Part 1: The Basic Elements, *IEEE J. Oceanic Eng.* 32(4), doi: 10.1109/JOE.2007.895277.
- Brown, W.S., A. Gangopadhyay, and Z. Yu, 2007. An Operational Circulation Modeling System for the Gulf of Maine/Georges Bank Region, Part 2: Applications", *IEEE J. Oceanic Eng.*, 32(4), doi: 10.1109/JOE.2007.895278.
- Warn-Varnas, A., A. Gangopadhyay, and J.A. Hawkins, 2007. Water masses in the Monterey Bay during the summer of 2000, *Cont. Shelf Res.*, in press.
- Calado, L., A. Gangopadhyay, and I.C.A. da Silveira, 2006. A parametric model for the Brazil Current meanders and eddies off southeastern Brazil. *Geophys. Res. Lett.*, 33, L12602, doi:10.1029/2006GL026092.
- Gangopadhyay, A., C.Y. Shen, G.O. Marmorino, R.P. Mied, and G. Lindemann, 2005. An extended velocity projection method for estimating the subsurface current and density structure for coastal plume regions: An application to the Chesapeake Bay outflow plume, in press, *Cont. Shelf Res.*
- Warn-Varnas, A., A. Gangopadhyay, J. Hawkins, and A. Robinson, 2005. Wilkinson Basin area water masses: A revisit with EOFs, *Cont. Shelf Res.*, 25, pp. 277-296.
- Gangopadhyay, A., A.R. Robinson, P.J. Haley, W.J. Leslie, C. J. Lozano, James J. Bisagni, and Z. Yu, 2003. Feature Oriented Regional Modeling and Simulation (FORMS) in the Gulf of Maine and Georges Bank, *Cont. Shelf Res.*, 23(3-4), pp. 317-353.
- Gangopadhyay, A., and A.R. Robinson, 2002. Feature oriented regional modeling of oceanic fronts, *Dynam. Atmos. Oceans*, 36(1-3), pp. 201-232.
- Taylor, A.H., and A. Gangopadhyay, 2001. A simple model of interannual shifts of the Gulf Stream, *J. Geophys. Res.*, 106(7), 13,849-13860.
- Gangopadhyay, A., and Y. Chao, 2000. Sensitivity of the Gulf Stream path on the cyclonic wind stress curl, *The Global Atmosphere and Ocean Systems*, Vol. 7, 151-178.
- Robinson, A.R., and A. Gangopadhyay, 1997. Circulation and Dynamics of the Western North Atlantic, II: Dynamics of Meanders and Rings. *J. Atmos. Ocean. Tech*, 14(6), 1333-1351.