



## 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

- Bhaskaran, P.K., R.R. Kumar, S.K. Dube, A.D. Rao, T.S. Murty, **A. Gangopadhyay**, and A. Chaudhuri, 2008 (in press). Tsunami Early Warning System – an Indian Ocean Perspective. *J. Earthquake Tsunami*.
- Calado, L., **A. Gangopadhyay** and I. C. daSilveira, 2008. Feature-Oriented Regional Modeling and Simulations (FORMS) For the Western South Atlantic, Southeastern Brazil Region. *Ocean Model.* (25), 48-64.
- Chaudhuri, S., R Balasubramanian and **A. Gangopadhyay**, 2008 (in press). Upwelling Detection in AVHRR Sea Surface Temperature (SST) Images Using Neural-Network Framework. *IGARSS*.
- Chaudhuri, A., J. J. Bisagni, and **A. Gangopadhyay**, 2008 (accepted). Shelf water entrainment by Gulf Stream warm-core rings between 75° and 50°W from 1978-1999. *Cont. Shelf Res.*
- Patel, S., R Balasubramanian and **A. Gangopadhyay**, 2008 (in press). Automatic Detection of Oceanic Eddies In SeaWiFS-Derived Color Images Using Neural Networks And Shape Analysis. *IGARSS*.
- 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.
- Kim, H-S., **A. Gangopadhyay**, L. K. Rosenfeld, and F. L. Bub, 2007. A high-resolution regional climatology for the Central California, *Cont. Shelf Res.*, doi:10.1016/j.csr.2007.05.011.
- Shaji, C., and **A. Gangopadhyay**, 2007. Synoptic modeling of the West India Coastal Current System using an upwelling feature model. *Cont. Shelf Res.*, doi:10.1016/j.csr.2007.01.004.
- Warn-Varnas, A., **A. Gangopadhyay**, and J.A. Hawkins, 2007. Water masses in the Monterey Bay during the summer of 2000. *Cont. Shelf Res.* doi:10.1016/j.csr.2007.01.004.
- 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, *Cont. Shelf Res.* 25, 1309-1319.