

Qualifications Summary

- More than 30 years of experience in metocean sciences, working with a wide range of government, education and oil industry clients
- Supervision and management of major oceanographic measurement and analysis projects
- Validation of numerical wind, wave and current models
- Development of a metocean contracting and consulting business
- Company technical representative to joint industry programs
- Participation in many deep-sea cruises and mooring programs since 1970 in the Labrador Sea, North Atlantic (off Cape Hatteras, Florida Straits, offshore Trinidad and Georges Bank), North Pacific, and Gulf of Mexico. Chief scientist on several eddy surveying cruises in the Gulf of Mexico
- Managing Director of an international joint venture company

DAVID SZABO, M.S.

Senior Oceanographer
Manager Houston Office

Professional Affiliations

Member, American Geophysical Union (AGU)
Member, Oceanography Society
Member, Marine Technology Society

Fields of Expertise

Managing and development of projects to determine impact of the physical environment on engineering projects. Physical oceanography with an emphasis on deep-water currents. Metocean data analysis and criteria development in tropical, subtropical and arctic offshore regions. Numerical wave hindcast studies for a variety of environments. Numerical 3D current modeling of ocean basins in hindcast and forecast modes. Time series and extremal analyses of metocean data. Extensive experience in offshore current measurement programs (moorings) particularly in deep strong current regions such as the Gulf Stream, Loop Current, North Brazil Current and West of Shetlands. Business development and management.

Higher Education

M.S., Oceanography-Florida State University
B.S., Meteorology and Oceanography-New York University

Employment History

2006-Present Senior Oceanographer - Manager Houston, Woods Hole Group
2005-2006 Owner/consultant - Texas Metocean Services, LLC
2000-2005 Division Director- Fugro GEOS, Inc.
2000-2005 Managing Director - Ocean Numerics, Ltd.
1995-2000 Regional Director - Fugro GEOS, Inc.
1981-1995 Metocean Specialist - Mobil Research and Development Corp.
1974-1981 Graduate Research Assistant - Florida State University, Department of Oceanography
1970-1974 Officer (LTJG), Oceanographer - US Coast Guard, Oceanographic Unit

Key Projects

Metocean Criteria for Hibernia Gravity Based Structure, Grand Banks Newfoundland

Managed development of calibrated wind and wave hindcast studies to determine extreme and fatigue criteria used in design of this 450000t GBS. Measured wave heights in severe storms were compared to model estimates to determine bias and scatter. Parametric wave spectra were fit to measured wave spectra at storm peaks to estimate the character of spectra in extreme conditions.

Manteo Exploration Project Offshore North Carolina

Specified a measurement program and satellite data analyses to determine the influence of the Gulf Stream at this potential exploration site offshore North Carolina. A one-year mooring program was successfully conducted, which allowed specification of current profiles for use in riser design. Archived satellite derived sea surface temperature (AVHRR) data over many years were used to map the edge of the Gulf Stream and determine the probability of strong currents at the drilling site.

Deepwater Current Studies Offshore Trinidad

Specified, developed, and managed a three participant joint industry project that successfully measured currents through the water column at three deepwater sites east of Trinidad for one year. Participated in fieldwork, data processing, and reporting.

Near Bottom Current Moorings in the Gulf of Mexico

Specified and conducted a four participant JIP for an exploratory 4 mooring current measurement program in the Gulf of Mexico, GUMBO, lasting a period of one year. Several years later, specified and conducted a comprehensive 19 mooring near-bottom current measurement program, GULL, aimed at understanding strong currents near the Sigsbee Escarpment.

Wave Hindcast Projects

Technical and steering committee participant in several wave hindcast projects: Gulf of Mexico Storm Hindcast of Oceanographic Extremes (GUMSHOE), North European Storm Study (NESS), West Africa Extremes (WAX), and West Africa Normals and Extremes (WANE).

HYCOM Model Implementation

Participated in the HYCOM (Hybrid Ocean Model) Consortium. HYCOM is a primitive equation ocean circulation model that uses different representation of the vertical coordinate to maximize accuracy. This model was applied by Ocean Numerics to model development for the regions west of the Shetlands for the NWAG group, for West Africa for the WANE project and for the South China Sea for ExxonMobil. The model was also used in a data assimilative mode to support an ocean forecast service, Ocean FOCUS, for the Gulf of Mexico. The service used satellite data (altimeter, sea surface temperature and chlorophyll) with the model results to assess present and future positions of the Loop Current and eddies.

Publications and Presentations

- Cox, A.T., V. Cardone, F. Counillon, and D. Szabo (2005). Hindcast Study of Winds, Waves and Currents in Northern Gulf of Mexico in Hurricane Ivan, OTC 17736, Offshore Technology Conference, May 2005, Houston Texas.
- Cardone, V. J., A.T. Cox, K.A. Lisaeter and D. Szabo (2004). Hindcast of Winds, Waves and Currents in Northern Gulf of Mexico in Hurricane Lili (2002). 2004 Offshore Technology Conference, May 2004, Houston, TX.
- Calverley, M.J., D. Szabo, V.J. Cardone, E.A. Orelup and M.J. Parsons. (2002). Wave Climate Study of the Caribbean Sea. Preprints of the 7th International Workshop on Wave Hindcasting and Forecasting. October 21-25, 2002 Banff, Alberta, Canada. Proceedings available from Environment Canada, Downsview, Ontario.
- Cardone V.J., C.K. Cooper and D. Szabo (1995). A Hindcast Study of the Extreme Wave Climate of Offshore West Africa (WAX). OTC 7687 Offshore Technol Conf Houston.
- Peters D.J., C.J. Shaw, C.K. Grant, J.C. Heideman, and D. Szabo (1993). Modelling the North Sea through the North European Storm Study. OTC 7130. Offshore Technol. Conf. Houston.
- Gu G.Z., E.P. Berek , F.J. Dello Stritto, D. Szabo and H.V. Leder. (1993). Extremal Analysis of Hibernia Wave Hindcast Data. Preprints of Third International Workshop on Wave Hindcasting and Forecasting. Montreal, Quebec. Proceedings available from Environment Canada, Downsview, Ontario.
- Lewis D.B., J.B. Adams, J.B. Shanks and D. Szabo (1991). The Loop Current Experience - Ewing Bank 871. Jour Petrol Tech Paper 23478, pg 1038-1044.
- Cardone V.J., D. Szabo and F.J. Dello Stritto (1989). Development of Extreme Wind and Wave Criteria for Hibernia. Preprints of Second International Workshop on Wave Hindcasting and Forecasting. April 25-28, 1989 Vancouver, BC. Proceedings available from Environment Canada, Downsview, Ontario
- Cardone V.J., J.A. Greenwood, D. Szabo and F.J. Dello Stritto (1989). Engineering Parameters from Hindcast Results. Preprints of Second International Workshop on Wave Hindcasting and Forecasting. April 25-28, 1989 Vancouver, BC. Proceedings available from Environment Canada, Downsview, Ontario.
- Szabo D., V.J. Cardone and B.T. Callahan (1989). Severe Storm Identification for Extreme Criteria Determination by Hindcasting. Preprints of Second International Workshop on Wave Hindcasting and Forecasting. April 25-28, 1989 Vancouver, BC. Proceedings available from Environment Canada, Downsview, Ontario

Publications and Presentations (continued)

Szabo D., V.J. Cardone, B. Eid and F.J. Dello Stritto (1989). Verification of Numerical Wave Hindcasts for Severe Storms at Hibernia. Preprints of Second International Workshop on Wave Hindcasting and Forecasting. April 25-28, 1989 Vancouver, BC. Proceedings available from Environment Canada, Downsview, Ontario.

Cardone V.J. and D. Szabo. (1985). Impact of Uncertainty in Specification of Offshore Wind on Accuracy of Wave Hindcasts and Forecasts. Proceedings of Workshop on Offshore Winds and Icing. October 7-11, 1985. Halifax, Nova Scotia.

Szabo D. and G.L. Weatherly. (1979). Energetics of the Kuroshio South of Japan. Jour of Mar Res Vol 37-3 pg 531-556.