

Qualifications Summary

- More than 20 years of experience worldwide in Open Ocean and coastal processes
- Conducted studies of metocean conditions affecting deep water operations, including extreme event analysis; seasonal, meso-scale and internal wave variability of metocean conditions in various regions of the Ocean; tidal currents, sea-level change and coastal fronts off West Africa; physical controls on marine ecosystems
- Coordinated and developed coupled physical-biogeochemical one-dimensional ecosystem model for the Black Sea; applied the model to study response of oxic/anoxic ecosystems to alterations in external conditions
- Specialize in collection, analysis, interpretation and integration of field data into project design. This includes the design of multidisciplinary field studies to measure currents, waves, water level, and seawater properties in various environments
- Fluent in Russian and English

LEONID I. IVANOV, PH. D.

Oceanographer

Professional Affiliations

The Oceanography Society

Fields of Expertise

Research on physical oceanography variability and physical processes in coastal and open ocean waters; signal processing, data analysis and interpretation; design and implementation of observation systems for multidisciplinary research projects; studies of physical controls on marine ecosystems; ecosystem modeling.

Higher Education

Ph.D., Oceanography-Marine Hydrophysical Institute, Ukrainian Academy of Sciences (1990)

M.S., Oceanography-Moscow State University (1978)

Employment History

2001-Present	Woods Hole Group
1993-2001	Senior Scientist, Marine Hydrophysical Institute, Ukraine
1990-1993	Scientist, Marine Hydrophysical Institute, Ukraine
1990	Chief of Field Expedition, feasibility studies for port construction Guinea, (contract with LENMORNIIPROEKT, Russia)
1987-1989	Researcher, Coastal Oceanographic Research Center, Guinea
1985-1987	Assistant Scientist, Marine Hydrophysical Institute, Ukraine

Key Projects

Bottom Current Measurement Study in the Walker Ridge Area of the Gulf of Mexico, for Petrobras America Inc, 2008 and ongoing - Consultant

Acquire information on near-bottom ocean currents in the mega-furrows area at the foot of the Sigsbee Escarpment, provide quality control of the collected data, and perform data analysis and interpretation. The unprecedented measurement program involves deployment of current profiling systems inside several mega-furrows to better understand current variability near the ocean floor and delineate the kinematic structure of near-bottom flows in four different areas of the furrow field.

NE Gulf of Mexico Water Temperature and Currents Study, for Williams - Consultant

Perform a desk study of water temperature and current variability in the specified areas of the northeastern Gulf of Mexico using publicly available data from a Navy digital ocean database as well as from the NOAA's National Ocean Data Center, National Data Buoy Center, and results of numerical models.

Met Ocean Measurement Program for BP Trinidad and Tobago LLC - Consultant

Provide quality control of incoming wind, wave, and current data, document data reduction procedures, complete monthly analyses of the data, produce monthly data reports.

Wind, wave and current conditions for the deepwater port Neptune LNG terminal in Massachusetts Bay, 2007, for Suez LNG N.A. - Consultant

Compile wind, wave and current data from various sources, produce operational and extreme wind, wave and current statistics and define met-ocean design criteria for the site of deepwater port Neptune LNG.

Water depth assessment at the Neptune site in the Gulf of Mexico, 2006, for BHP Billiton - Consultant

Develop a methodology for accurate assessment of mean water depth in connection with the design of seafloor structures for a Tension Leg Platform in the Gulf of Mexico.

Extremal Currents and Fatigue Current Profiles for the New Gendalo Location in Makassar Strait, Indonesia, 2006, for Chevron Corporation - Consultant

Complete extreme current event forecasting for a specific location in the western Makassar Strait through process oriented analysis of ADCP and current meter observations. Provide operational statistics for regional currents.

Update of Wind and Wave Conditions for Makassar Strait Including Regional Wind and Wave Analysis and Operational and Extremal Statistics for the Gendalo, Gehem/Ranggas, and West Seno Sites, 2005, For Unocal Corporation - Consultant

Complete extreme wind and wave event forecasting for a specific location in the western Makassar Strait using *in-situ* wind and wave measurements and satellite information. Provide operational statistics for regional wind and waves.

Key Projects (continued)

Current profile analysis for riser fatigue estimates for Western Makassar Strait, Indonesia 2004-05, for Unocal Corporation - Consultant

Develop a methodology for classification of observed current profiles in accordance with their ability to excite vortex induced vibrations of a riser, use a specific current data set for selection of representative current profiles and corresponding probability of their occurrence.

Extremal currents and fatigue current profiles for the Gendalo location Makassar Strait, Indonesia 2004, for Unocal Corporation - Consultant

Completed extreme current event forecasting for a specific location in the western Makassar Strait through process oriented analysis of ADCP and current meter observations.

Wind Farm Sites Instrumentation and Data Acquisition Systems 2003-2004, for Cape Wind Associates - Consultant

Processing and analysis of the meteorological and oceanographic data from the Cape Wind Scientific Tower installed in the Nantucket Sound; data reporting.

Analysis of Extremal Currents and Fatigue Current Profiles at the Merah Besar and Rongas Locations in the Makassar Strait, 2003-04, for Unocal Corporation - Consultant

Completed extreme current event forecasting for two locations in the western Makassar Strait through process oriented analysis of ADCP and current meter observations.

Makassar Strait Regional Current Study, 2002-03, for Unocal Corporation - Consultant

Provided a synthesis of the available Unocal oceanographic observations in the western Makassar Strait region and of the published results on the oceanography of the Indonesian Seas derived from models and observations.

Gulf of Honduras Programme, 2003, for Inter-American Development Bank - Consultant

Provided a synthesis of the available information on the oceanography of the Gulf of Honduras as part of the Preliminary Transboundary Diagnostic Analysis

Caspian Environmental Program: National Consultant to Assist the Program as a Trainer/Leading physical Oceanographer for a Pollution Assessment Sea Cruise

Preparation of the cruise plan, hands-on training of cruise participants, collection of CTD and ADCP data in support of the pollution assessment studies.

Operational Data Base Management System for the Black Sea, 2000 – 01, for NATO Science for Peace Program (NATO SFP-971818), - NATO Partner Country Project Director

Preparation of the project work plan; coordination of research.

Ventilation of the Black Sea Anoxic Waters, 1997-2000, for EC INCO COPERNICUS Programme - Team Leader

Project design and management, coordination of research, preparation of project reports and relevant scientific publications.

Key Projects (continued)

Black Sea Observation and Forecasting System, 1997-98, for NATO CCMS - Chairman of the working group on observation systems - Consultant

Preparation of a section on the design of an observation system for the Black Sea Observation and Forecasting System Science Plan.

Publications and Presentations

- Magnell, B.A.; Ivanov, L.I. (2008), Performance of the 75kHz Long Ranger ADCP in a Low Scattering Environment. In Proceedings of the IEEE/EOS/CMTC Ninth Working Conference on Current Measurement technology, 17-19 March 2008, Charleston, SC.
- Ivanov, L.I.; Magnell, B.A.; Catalano, R.A.; Fagan, L. (2006), Characteristics of the Atmospheric Boundary Layer in Nantucket Sound. OCEANS 2006, Vol: Sept. 2006, p.p.1 – 6.
- Magnell, B.A.; Ivanov, L.I.; Garcia Govea, M.C.; Villalba Lopez, R.; Valle Molina (2005), Observations of downward and upward propagating near-inertial waves in the western Gulf Of Mexico. OCEANS, 2005. Proceedings of MTS/IEEE Vol: 3, p.p. 2407 – 2414.
- Konovalov, S.K., A.S., Samodurov, T., Oguz and L.I., Ivanov (2004) Parameterization of iron and manganese cycling in the Black Sea suboxic and anoxic environment *Deep Sea Research Part I*, Volume 51 (12), p.p. 2027-2045.
- Samodurov, A.S., L.I., Ivanov. 2002. A balance model for calculating mean vertical fluxes of mass, heat, salt and dissolved chemical substances in the Black Sea thermohaline. *Marine Hydrophysical Journal*. No 1, p.p. 7- 25.
- Ivanov, L.I. and A.S. Samodurov. 2001. The Role of Lateral Fluxes in Ventilation of the Black Sea. *Journal of Marine Systems* 31 (1-3): 159-174.
- Ivanov, L.I., J.O. Backhaus, E. Ozsoy, and H. Wehde. 2001. Winter Convection in the Black Sea. *Journal of Marine Systems* 31(1-3): 65-76.
- Konovalov, S.K., L.I. Ivanov, and A.S. Samodurov. 2001. Fluxes and Budget of Sulfide and Ammonia in the Black Sea Anoxic Layer. *Journal of Marine Systems* 31(1-3): 203-216.
- Ivanov, L.I., V. Belokopytov, A.S. Samodurov and E. Ozsoy. 2000. Ventilation of the Black Sea Pycnocline on Seasonal and Interannual Time Scales. *Journal of Mediterranean Marine Science* . ½: 61-74..
- Konovalov, S.K., L.I. Ivanov and A.S. Samodurov. 2000. Oxygen, Nitrogen and Sulfide Fluxes in the Black Sea. *Journal of Mediterranean Marine Science* ½: 41-59.

Publications and Presentations (continued)

- Ivanov, L.I. and S. Besiktepe. 1999. Black Sea Cold Intermediate Water Mass Volumetric Structure and Its Variability. In: A. Zatsepin (ed.), *Oceanic Fronts and Related Phenomena* (Konstantin Fedorov International Memorial Symposium). IOC Workshop Report Series, N 159, UNESCO, 646.
- Ivanov, L.I. and V.N. Eremeev. 1999. Ventilation of the Black Sea on Interannual Time Scales: Results of Long-Term Monitoring and Present Day Needs. In: L.Kruger (ed.), *World Federation of Scientists. Environmental Conditions. Working Group on Water and Pollution. Proceeding Series, Vol.3*, 163-183.
- Konovalov, S.K., L.I. Ivanov, J.W. Murray, and L.V. Eremeeva. 1999. Eutrophication: A Plausible Cause for Changes in the Hydrochemical Structure of the Black Sea Anoxic Layer, pp. 61-74. In: U. Unluata (ed.), *Degradation of the Black Sea: Challenges and Remedies*. Dordrecht, Netherlands: Kluwer Academic Publishers.
- Samodurov, A.S. and L.I. Ivanov. 1998. Processes of Ventilation of the Black Sea Related to Water Exchange Through the Bosphorus. In: L. Ivanov and T. Oguz (eds.), *Ecosystem Modeling as a Management Tool for the Black Sea*. NATO ASI Series 2: 221-236. Dordrecht, Netherlands: Kluwer Academic Publishers.
- Ivanov, L.I., S. Konovalov, V. Belokopytov, and E.Ozsoy 1998. Regional Peculiarities of Physical and Chemical Responses to Changes in External Conditions within the Black Sea Pycnocline: Cooling Phase. In: L.Ivanov and T.Oguz (eds.), *Ecosystem Modeling as a Management Tool for the Black Sea*. NATO ASI Series.2: 53-68. Dordrecht, Netherlands: Kluwer Academic Publishers.
- Ivanov, L.I. and T. Oguz (eds.). 1998. *Ecosystem Modeling as a Management Tool for the Black Sea*. NATO ASI Series.1, 2. Dordrecht, Netherlands: Kluwer Academic Publishers.
- Ivanov, L.I., S. Besiktepe, and E.Ozsoy. 1997. Physical Oceanography Variability in the Black Sea Pycnocline, pp.. 265-274. In A. Mikaelyan and E. Ozsoy (eds.), *Sensitivity to Change: Black Sea, Baltic Sea and North Sea*. NATO ASI Series. Dordrecht, Netherlands: Kluwer Academic Publishers.
- Ivanov, L.I., I. Yu. Shkvoretz. 1995. Thermohaline Structure of Deep and Near-Bottom Black Sea Waters. *Morskoy Hydrophys. J. (Soviet Journal of Physical Oceanography)* 6: 52-59.
- Buesseler, K.O., H.D. Livingston, L.I. Ivanov, and A.S. Romanov. 1994. Stability of the Oxic/Anoxic Interface in the Black Sea. *Deep-Sea Research* 41 (2): 283-296.
- Ivanov, L.I. and A.B. Polonsky. 1992. Seasonal Variability of Temperature and Salinity in the Northwestern Tropical Atlantic. *Okeanologia (Oceanology)* 32 (4): 654-660.

Publications and Presentations (continued)

Baev, S.A., N.P. Bulgakov, and L.I. Ivanov. 1990. The Intensity of the Ocean Meso-Scale Circulation Off Brazil. *Okeanologia (Oceanology)* 30 (1): 5-10.

Ivanov, L.I., V.A. Ivanov, and A.D. Lisichonok. 1989. Redistribution of the Internal Tide Energy in the Zone of the North Atlantic Counter Current. *Morskoy Hydrophys. J. (Soviet Journal of Physical Oceanography)* 4: 52-58.

Baev, S.A. and L.I. Ivanov. 1988. The Fine Structure of Temperature and Salinity Fields in the Northwestern Tropical Atlantic. *Morskoy Hydrophys. J. (Soviet Journal of Physical Oceanography)* 4: 51-55.

Ivanov, L.I and V.A. Ivanov. 1987. Spatial Characteristics of Internal Tides in the Guyana Basin. *Morskoy Hydrophys. J. (Soviet Journal of Physical Oceanography)* 4: 50-57.