



## **Title: Nowcast Forecast Systems in Support of Safer Navigation**

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### ***Abstract***

The safe navigation both at sea and in harbour operations requires the early warning of potential hazards that can endanger the personnel at sea or jeopardize the efficient loading/unloading operations inside ports. Timely hazard and environmental conditions forecasting is an essential part of risk management for harbour and ship operations, providing the necessary information for safe and economically efficient navigation and harbour management. Forecasting information systems have been under development for over three decades, addressing many problems and spanning several areas, such as wind, wave and tidal prediction. Forecast systems combine our ability to measure and to simulate the behavior of water bodies, by integrating numerical models, monitoring networks and information technology systems, to provide real-time, short-term, predictions of the main drivers for safe navigation and harbour operations. With the recent emergence of new, reliable and cost-effective automatic data acquisition and highly efficient, reliable numerical models (Baptista, 2006), most important constraints for widespread operational use of oceanographic models in real-time forecasting have been minimized. In particular, nowcast-forecast systems have evolved from research tools to operational tools for the management of harbors, marine resources and emergency operations, providing accurate and timely information on waves and currents conditions.

### ***Biography***

Dr. Anabela Oliveira is a Senior researcher at Hydraulics and Environment Department of LNEC, integrated in the coastal zones division from 1987 to 2009, later head of the Information Technology Division up to 2013, and currently Coordinator of the Information Technology in Water and Environment Research Unit. LNEC is the major research institution in Civil Engineering in Portugal. She has received her M.Sc. and Ph.D. degree in Environmental Science and Engineering at Oregon Graduate Institute, Oregon, USA (nowadays Oregon Health and Science University) and her Bachelor of Science degree in Civil Engineering from the Technical University of Lisbon. She has published over 200 publications, including 40 ISI-indexed papers. She has earned over 300 citations and has an h-index of 13.