Title: Oil Spill Risk Management Cycle: From Risk Prevention Analysis to Real Time Accident Forecast

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Abstract

The frequent accidental oil spills in the last decades has raised a growing concern on the preparedness and response to spill-induced emergencies. This concern fuelled the implementation of several support tools, including pollution monitoring systems and real time forecast modelling systems. However, in the event of a spill accident that affects coastal resources, each tool is mostly used in a disconnected, ad-hoc fashion, without compliance to the risk management cycle, and often not providing accurate predictions at the right scales due to computational constraints or unknown local conditions. Risk management systems, successfully applied for tsunamis and dam-break risks, can be used for pollution risks to provide an adequate framework for the effective protection of coastal resources. Recent developments on the modelling systems for coastal problems using high-performance resources provides the potential for their application to pollution risk analysis, integrated with real time monitoring networks and multi-environment computational platforms for easy access to predictions and prevention analysis. A new risk management system is presented herein, combining a multi-scenario risk analysis based on high accuracy oil spill predictions and a new forecast system for oil spill accidents.

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 400 citations and has an h-index of 14.