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Safety System for Ships in Harbours

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The port of Sines has invested in the modernization and stimulation of its maritime sector. To this end, it has made investments directed at scientific research and risk management associated with new uses of the sea, which include the BlueSafePort project. This project aims to develop a system (on web and mobile platforms) for forecasting and warning, 72 hours in advance, of emergency situations related to navigation, docking and mooring maneuvers in port areas.

The safety system, called SAFEPORT, consists of an integrated tool that includes: the software package SWAMS – Simulation of Wave Action on Moored Ships, Pinheiro et al. 2016; numerical models to evaluate the behavior of maneuvering ships, developed by the Centre for Marine Technology and Ocean Engineering (not included in this work); a continuous monitoring procedure to evaluate and validate the results obtained by the numerical models; and a risk assessment methodology.

This work presents the results of two different simulations made for ships berthed at terminals in the port of Sines, to illustrate the system's working. The first corresponds to a current situation, where it is not expected the system to issue an alert, and the other is a storm situation, when the forces on the mooring system may exceed pre-set limits.

References:

Pinheiro, L.; Fortes, C.J.E.M.; Santos, J.A. Rosa-Santos, P. (2016) - Numerical simulation of the motions and forces of a moored ship in Leixões harbour. MARTECH 2016 - 3rd International Conference on Maritime Technology and Engineering, 4 - 6 julho. 217-223pp. Lisboa. ISBN 978-1-138-03000-8.

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