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Analysis of the safety conditions for ship mooring during strong wind events: MOORWIND Project

The knowledge of the dynamic behavior of a moored vessel under strong wind conditions is of great importance for the safety of personnel and passengers and the structural integrity of ships and shipyards both during the ship construction phase and along its operating lifetime. The evaluation of such behaviour, which is very complex and strongly non-linear, is usually carried out through simplified models of the wind velocity based on the assumption of simple logarithmic vertical profiles. This simplification increases the uncertainty on the estimation of the actual forces acting on the ship, which is usually taken into account oversizing the mooring system to guarantee safety conditions. The MOORWIND Project, which is being developed through a joint collaboration by CETENA and the University of Genoa, aims at evaluating the real wind actions on a ship during its construction phase by means of wind climatological analyses, numerical simulations, wind tunnel tests and in-situ measurements. The area chosen as test case is the Fincantieri's Monfalcone (Italy) shipyard, which is affected by very strong Bora wind events during the winter season. The results will be finally used to propose a general procedure to analyse this kind of issue in whatever context.

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