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Experimental and numerical prediction of the hydrodynamic performances of a 65 ft planing hull in calm water

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An extensive campaign of model and full scale experimental tests as well as of numerical computations, aimed at the prediction of the hydrodynamic performances of a 65 ft motoryacht in calm water and in waves, is undertaken within the framework of the Project SOPHYA - Seakeeping Of Planing Hull YAchts, co-financed by Friuli-Venezia
Giulia Region in the field of joint industrial and academic research.
In this paper, selected results of the numerical computations conducted by HyMOLab-University of Trieste and by the University of Zagreb for the calm water case are presented. The RANS simulations carried out in combination with a semi-automatic optimized mesh generation tool, developed in this project within the Open-
FOAM/foamExtend framework, are described. Different free surface capturing methods are employed and compared, with focus on numerical issues. The numerical results are compared with new experimental data obtained at the towing tank of the University of Naples within the project, with uncertainty assessment.

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