Ocean Engineering 189 (2019) 106346

Contents lists available at ScienceDirect

Ocean Engineering

journal homepage: www.elsevier.com/locate/oceaneng

Parametric design and optimisation of high-speed Ro-Ro Passenger ships

Sotiris Skoupas a, George Zaraphonitis b,*, Apostolos Papanikolaou b,c

a *Lloyd's Register, 87 Akti Miaouli, 18538, Piraeus, Greece*
b *National Technical University of Athens, 9 Heroon Politechniou str., 15773, Athens, Greece*
c *Hamburger Schiffbau-Versuchsanstalt, 164 Bramfelder Straße, D-22305, Hamburg, Germany*

ABSTRACT

An integrated methodology for the parametric design and optimisation of high-speed Ro-Ro Passenger vessels of both mono- and twin-hull configuration is presented. The hullform and internal layout are elaborated automatically in the NAPA® software environment enabling the multi-objective optimisation of design alternatives with respect to installed propulsive power, transport capacity and economic viability, while considering all major design constraints, including intact and damage stability. Typical application results from the optimisation of two high-speed Ro-Ro Passenger vessels are presented and discussed.

For more information about this article please contact:

Prof. Dr.-Ing. Habil. Apostolos Papanikolaou, Senior Scientific Advisor HSVA, Papanikolaou@hsva.de

Prof. George N. Zaraphonitis, National Technical University of Athens, zar@deslab.ntua.gr