Composition of the ISP Editorial Board

Dr. J. van den Broek recently stepped down as member of the Editorial Board. Two new members joined the Editorial Board in February 2019: Prof. Dr. Ir. C. van Rhee (TU Delft), who’s field of expertise is “Dredging Engineering” and Dr. P. Corigliano (University of Messina, Italy), who’s field of expertise is “Fatigue of structures and materials.”

ISP issues in 2018

In 2018 two issues of the Journal have been published. Vol. 65 no. 1 was issued in July and Vol. 65 no.2 in December. Abstracts of both issues can be found on https://www.mkc-net.nl/isp-journal/isp-journal-eng/isp-journal-issues/.

Brief abstracts of no.2 are also provided in this newsletter. Full abstracts of articles that have been published in this ISP issue can also be found at https://content.iospress.com/journals/international-shipbuilding-progress

ISP Volume 65, Issue 2

ISP Volume 65, issue 2 of 2018 contains 4 articles on various topics. These range from the development of a Life Cycle ship Performance Assessment (LCPA) method, blending economic and environmental aspects, to numerical investigations of ship maneuvering, propeller performance and seakeeping behavior. More extensive summaries, as well as the full articles can be found on https://content.iospress.com/journals/international-shipbuilding-progress/65/2

Life cycle ship performance assessment (LCPA): A blended formulation between costs and environmental aspects for early design stage

The development is described of a method to compare different design solutions in the early design stage with respect to performances along the whole life-cycle frame by a single parameter: the LCPA index. This index includes the impacts of both economic and environmental aspects. Key Performance Indicators (KPIs) for both aspects are identified and discussed. A blended formulation between Life Cycle Cost (LCC) and Life Cycle Assessment (LCA) is developed, leading to the LCPA index. A Ship Breakdown Structure has been developed to link ship design parameters with the calculation of KPIs. The approach has been implemented and applied to a Ro-Ro passenger ship in order to validate the LCPA tool structure and its reliability.
Numerical investigation on the influence of Froude number on the maneuvering characteristics of a container ship

Numerical simulations are described of captive maneuvering model tests at different forward speeds for a containership to estimate the speed effect on the hydrodynamic derivatives. It is shown that the effect of forward speed can be significant and should be taken into account when making predictions of maneuvering behavior.

Improving model scale propeller performance prediction using the k-$k_L$-ω transition model in OpenFOAM.

Propeller performance on full scale is usually based on results of open water tests on model scale, which is usually scaled up to full scale by some semi-empirical method. In practice these appear not always to be sufficiently accurate, especially for special geometries like high skew propellers, propellers with tip rake, ducted propellers or CLT propellers. This article describes a CFD-based approach to calculate the performance of model scale propellers in open water, taking into account transition from laminar to turbulent flow. It is validated against results of experiments with three benchmark propellers and showed substantial improvements in the accuracy of the performance prediction, compared to calculations based on fully turbulent flow.

CFD, potential flow and system-based simulations of fully appended free running 5415M in calm water and in waves

The seakeeping ability of ships is one of the aspects that needs to be assessed during the design phase of ships. Traditionally, potential flow calculations and model tests are employed to investigate whether the ship performs according to specified criteria. In the present paper, a detailed validation study of several computational methods for ship dynamics is presented. The ability of the methods to predict motions in calm water as well as in waves is investigated. In calm water, the roll decay behavior of a fully appended self-propelled free running 5415M model is investigated first. Subsequently, forced roll motions simulated by oscillating the rudders or stabilizer fins are studied. Lastly, the paper discusses comparisons between experiments and simulations in waves with varying levels of complexity, i.e. regular head waves, regular beam waves and bi-chromatic waves. The predictions for all methods are validated with an extensive experimental data set. The paper shows that only high-fidelity CFD is able to accurately predict all the relevant physics during roll decay, forced oscillation and sailing in waves.
ISP issues in 2019

For 2019 four issues of ISP have been scheduled. The first issue (March) will be a special issue, containing extensions of selected papers of the NAV2018 conference, held in Trieste, Italy in June 2018. The second (June) and third (September) issues will be regular issues. The fourth issue (December) will be a special issue on the application of hydrogen in the marine field.

Next meeting of the Editorial Board

The next meeting of the Editorial Board has been scheduled for July 1st, at MARIN in Wageningen, The Netherlands.

Upcoming conferences, meetings and training courses

Overviews of relevant conferences, exhibitions, meetings and training courses can be found on:

http://www.marin.nl/web/Events
https://www.rina.org.uk/RINA_Events
http://www.sname.org/events/calendar
http://www.swzonline.nl/events-calendar.