



Contribution ID: 25

Type: **Paper**

The roll damping of high-speed craft in waves

Thursday, 15 October 2020 15:45 (30 minutes)

The main component of high-speed craft (HSC) roll damping is due to the hydrodynamic pressure developed on the hull surface: this is very different from the case of displacement hulls. However, the estimation of roll damping of HSC, by means of roll decay tests for example, is often treated in the same manner as for larger and slower ships. Being able to model correctly the roll motions of HSC is of paramount importance: in the prediction of the lateral component of acceleration of an impact at a roll angle, or during a manoeuvre at the pre-planing regime speed.

Practical seakeeping mathematical models of HSC focuses only on the vertical impacts dynamic in head waves, neglecting roll. This work shows a method meant to include hydrodynamic pressure induced roll damping in time domain simulations. The results of the study will be validated by means of free sailing model tests on a HSC at beam and quartering irregular seas performed at the Seakeeping and Manoeuvring Basin (SMB) of MARIN.

Primary authors: Mr CONSOLO, Oliviero (University of Genoa); Mr HILLEGE, Lodewick (Technical University of Delft); Dr BONCI, Matteo (MARIN)

Presenter: Dr BONCI, Matteo (MARIN)

Session Classification: Planing Hull Hydrodynamics 2

Track Classification: Seakeeping, Hydrodynamics