



Contribution ID: 13

Type: Paper

## Warp effects studied by a time-domain strip model and compared to model experiments

Thursday, 15 October 2020 14:30 (30 minutes)

In the tradition dating back from the 1970ties, time-domain strip approaches have been used to investigate the seakeeping performance of planing High Speed Craft, HSC. The geometrical starting point is prismatic hulls and main issues addressed, have been design-loads and a representative design-acceleration. Usually, *design* is interpreted as some sort of maximum or limiting value. This has been a rationale for focusing on the craft in head seas. A strip method is based on the assumption that the governing hydromechanics can be described in 2-D cross-cuts. Some shortcomings from that assumption have been dealt with in different ways turning the method to something often referred to as 2 1/2 D. The time-domain has opened for a strip approach catching the non-linear motions and accelerations characterising the HSC's run in waves and the different published methods have shown to be useful design tools for relatively prismatic hull shapes. Warp, the longitudinal variation of deadrise, influence the seakeeping characteristics and could be a valuable component for the designer. Warp introduces three-dimensionalities challenging the strip approach. The present study examines a strip-method in order to evaluate its validity range with respect to warp. Results from simulations and published model test results for three warped hulls and their parent prismatic hull, in calm water, regular and irregular waves are presented. The results are discussed and generalised to how warp influences the practical applicability of the time-domain strip method.

**Primary author:** Dr GARME, Karl (Associate professor)

**Presenter:** Dr GARME, Karl (Associate professor)

**Session Classification:** Planing Hull Hydrodynamics 1

**Track Classification:** Seakeeping, Hydrodynamics