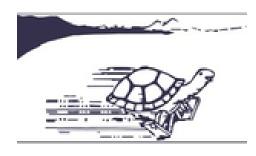Contribution ID: **20**   Type: **Paper**

WAVE INTERFERENCE PREDICTION OF A TRIMARAN USING FORM FACTOR

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Abstract

The increasing demands in high-speed transportation have brought the multi-hull forms into the forefront. Many applications have already been realized in civil transportation and naval purposes. The design features and performance characteristics of these vessels differ from mono-hull due to the wave interference phenomenon. Nowadays, evaluation of ship hydrodynamics with CFD has become very popular and successful results have been achieved. Based on this, it is aimed to contribute to the prediction of wave interference effects of a trimaran surface combatant, advancing in deep, unbounded and calm water, by applying the CFD method. A trimaran model with a scale of 1/125 was chosen for the numerical investigation. Primarily, a V&V study was conducted by using proper techniques. Then, the form factor of the trimaran was calculated with two different methods: Prohaska and double-body. The hydrodynamic analyses were performed under incompressible, viscous and fully turbulent flow conditions. Computational results were compared in terms of resistance components and interference factors. The form factor prediction methods were discussed regarding wave interference.

Keywords: CFD, Form factor, Trimaran, Wave interference.

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