DIFFERENT APPROACHES IN SIMULATION PROPELLER OPEN WATER CHARACTERISTICS USING CFD METHOD

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ABSTRACT

The paper presents different approaches in simulation open water propeller performance by using CFD method, which are sliding mesh, moving reference frame and stationary reference frame approaches. The different in numerical setup, order of accuracy in simulation results and computational time between three methods are given. To confirm the accuracy of numerical results a well-known propeller of Japan Bulk Carrier ship model is selected for verification and validation process. At the end, the suggestion for choosing each approach based on the order of accuracy and computational time are given. During the research process, a commercial package provided by SIEMENS, Star-CCM+ was applied as a solver.

KEYWORDS: CFD, RANSE, Open Water & Propeller

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