

عنوان مقاله:

Development of a software to modeling 3 DOF Non-Linear dynamic of a planing vessel

محل انتشار:

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خلاصه مقاله:

This study is intended to improve Zarnick s (1978) analytical model for motions of planing vessel. A nonlinear time domain mathematical model was developed for dynamic longitudinal behavior of high-speed motion planning crafts in regular waves. This model was based on a two-dimensional strip theory using the expanding wedge theory, momentum. Due to the nonlinearity and complex dynamic behavior of these vessels, a time-domain simulation was adopted. Today the Zarnick model is the basis of many studies in the field of analysis of planing vessels and is capable of determining movements in regular and irregular waves. Finally simulation was verified with Fridsma (1969) tests. By comparing RAOs diagrams of proposed code with RAOs diagrams of Fridsma's experimental tests is can be conclude that the proposed code in many ratios of fit with the test results. Of course, in some of the RAOs diagrams, the results of the code with the lab data are not as good as in $c = 0.07$, but are reasonably acceptable.

کلمات کلیدی:

Planing Vessels, 3DOF Non-Linear Dynamic, Regular waves

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