

عنوان مقاله:

Foil Application to Reduce Resistance of Catamaran under High Speeds and Different Operating Conditions

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نویسندگان:

H. Kazemi moghadam - *Sea Based Energy Research Group, Babol Noshirvani University of Technology, Babol, Iran*

Rouzbeh Shafaghat - *Sea Based Energy Research Group, Babol Noshirvani University of Technology, Babol, Iran*

A. Hajiabadi - *Sea Based Energy Research Group, Babol Noshirvani University of Technology, Babol, Iran*

خلاصه مقاله:

Today, researchers exploit hybrid craft more than they used to be. The main reason is that they need to high speed as well as extra portability. For instance, a famous hybrid craft is named Hysucat, was designed through the combination of catamaran and hydrofoil. Catamarans, a type of multihull boats, have always considered by designers because of their simultaneous supply of high speed and stability. These boats hold high drag despite more wetted surface as well. By using hydrofoil the wetted surface reduces, and then the drag of boat will decline. Meanwhile, sketches in the layout of hydrofoil processes notice to weight and center of gravity. This paper investigated application of hydrofoil in the high speed catamaran with considering different conditions in terms of center of gravity and load conditions. The model has exploited in the three states of loading (partial, ballast and over) and two centers of gravity for each diverse weight. Hence, nine series tests in towing tank have been carried out on the model boat in scale 1 ratio to 11.43. Eventually, results were computed to full scale boat by Froude number and ITTC model. According to the test results, usage of the hydrofoil brings about 50% drag reduction.

کلمات کلیدی:

Catamaran, Hydrofoil, Load Conditions, Towing Tank, Drag Reduction

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