

電動船外機を取り付けた小型船の航行特性

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Navigation Characteristics of the Boat with Electric Outboard Motor

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Abstract

In this study, energy consumption and noise level are evaluated based on the analysis of experiments on the sea to measure individual characteristics of electric and engine outboard motors, and to investigate navigation characteristics of the two kinds of boats; one is propelled by the electric outboard motor and the other is propelled by the engine outboard motor. As a result, it was clarified that the energy consumption of the electric outboard motor to get the same thrust is approximately 27-46% of the energy consumption of the engine outboard motor. There is almost no difference when the boat attaching the electric outboard motor is navigated under the generation efficiency at the time of 60%, transmission efficiency 94%, battery charging electric discharge efficiency 83%. The higher effectiveness of the electric outboard motor is mainly caused by the difference between the energy conversion efficiency of the electric outboard motor and the gasoline engine motor, it decreases when the boat attaching the electric outboard motor is navigated. Furthermore, it was shown that the noise level of the electric outboard motor was lower than that of the engine outboard motor experimentally.

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