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## Development of Estimation Method of Running Performance for Planing Craft with Outboard Engine

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**Summary:** In this paper, an estimation method of running performance for high-speed planing craft with outboard engine is proposed. The estimation method is constructed by the running attitude & resistance simulation with towing tank test data, propeller open water test results and engine performance curves, those are respectively independent. And some factors, those is caused by interaction between hull and outboard engine, connect them, some of the factors are called self-propulsion factor in naval architecture. The characteristics of these factors are also investigated experimentally in model and real scale. The estimation method of hydrodynamic forces acting on lower hull of outboard engine is proposed, and the estimated running attitudes and resistance are improved at the range of high forward speed especially. Moreover, the maximum speed and fuel consumption are estimated by the proposed method, and it is confirmed that the estimated results are agreement with the measured results in full scale tests.

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