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Power Prediction Modeling of Conventional High-Speed Craft

- **Focuses specifically on mathematical modelling of the most significant factors for in-service power prediction: bare hull resistance, dynamic trim, and propeller's open-water efficiency**
- **Fills the gap in best design practices for high-speed crafts**
- **Discusses several models and methods**

The proposed book addresses various power prediction methods, a principal design objective for high-speed craft of displacement, semi-displacement, and planing type. At the core of the power prediction methods are mathematical models based on experimental data derived from various high-speed hull and propeller series. Regression analysis and Artificial Neural Network (ANN) methods are used as extraction tools for this kind of models. The most significant factors for in-service power prediction are bare hull resistance, dynamic trim, and the propeller's open-water efficiency. Therefore, mathematical modeling of these factors is a specific focus of the book. Furthermore, the book includes a summary of most of the power-prediction-relevant literature published in the last 50 years, and as such is intended as a reference overview of the best high-speed craft modeling practices. Once these mathematical models have been developed and validated, they can be readily programmed into software tools, thereby enabling the parametric analyses required for the optimization of a high-speed craft design. The proposed book is intended primarily for naval architects who design and develop various types of high-speed vessels (yachts, boats etc.), as well as for students who are interested in the design of fast vessels. The book includes useful Excel Macro Codes for the outlined mathematical models. Moreover, software for all considered models is provided.

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