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# Ship Dynamics for Performance Based Design and Risk Averse Operations

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More than a century and half ago, William Froude and his son Robert [1,2] conducted the first scientifically designed towing tank experiments using scaled ship models traveling in calm water or waves. Since then, advances in mathematics and technology have led to the development of various methods for the assessment of the dynamic behavior of ships. Yet, as we enter the 2nd decade of the 21st century the advent of goal-based regulations and the emergence of safe and sustainable shipping standards still confront our ability to understand the fundamentals and assure absolute ship safety in design and operations. To instigate renewed interest in the well-rehearsed subject of ship dynamics this Special Issue presents a collection of 12 high-quality research contributions with a focus on the prediction and analysis of the dynamic behavior of ships in a stochastic environment. The papers presented are co-authored by leading subject matter experts from Europe, the Far East, and the USA. These papers will be of interest to academics, practitioners, and regulators involved in the progression of ship science, technical services, and safety standards.

