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Special Issue Reprint

Sustainable and Efficient Maritime Operations

Edited by: Jiaguo Liu and Jun Ye

This Reprint presents a collection of studies addressing sustainable and efficient maritime operations from technological, environmental, and managerial perspectives. The contributions reflect recent advances in maritime research, covering themes such as alternative fuels, emission reduction strategies, digitalization, intelligent decision support, port operations, maritime communications, safety management, and system resilience. Together, the papers illustrate how operational efficiency, environmental performance, and safety considerations are increasingly interconnected within modern maritime systems. The Reprint highlights the growing role of data-driven methods, artificial intelligence, and optimization techniques in improving maritime decision-making, while also emphasizing the continued importance of human expertise in safety-critical environments. Several studies provide system-level and lifecycle-based analyses of decarbonization pathways, offering insights into the economic and environmental implications of fuel transitions and emission abatement technologies. Other contributions focus on resilience and risk-related challenges, reflecting the sector's exposure to uncertainty, disruptions, and evolving regulatory pressures. Overall, this Reprint captures current research directions and practical concerns shaping maritime operations, providing an integrated reference for researchers, practitioners, and policymakers interested in sustainability, digital transformation, and operational performance in the maritime domain.



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