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Practical Ship Hydrodynamics-Volker Bertram 2011-08-25 Practical Ship Hydrodynamics provides a comprehensive overview of hydrodynamic experimental and numerical methods for ship resistance and propulsion, maneuvering, seakeeping and vibration. Beginning with an overview of problems and approaches, including the basics of modeling and full scale testing, expert author Volker Bertram introduces the marine applications of computational fluid dynamics and boundary element methods. Expanded and updated, this new edition includes: Otherwise disparate information on the factors affecting ship hydrodynamics, combined to provide one practical, go-to resource. Full coverage of new developments in computational methods and model testing techniques relating to marine design and development. New chapters on hydrodynamic aspects of ship vibrations and hydrodynamic options for fuel efficiency, and increased coverage of simple design estimates of hydrodynamic quantities such as resistance and wake fraction. With a strong focus on essential background for real-life modeling, this book is an ideal reference for practicing naval architects and graduate students.

Fundamentals of Ship Hydrodynamics-Lothar Birk 2019-04-25 Fundamentals of Ship Hydrodynamics: Fluid Mechanics, Ship Resistance and Propulsion Lothar Birk, University of New Orleans, USA Bridging the information gap between fluid mechanics and ship hydrodynamics Fundamentals of Ship Hydrodynamics is designed as a textbook for undergraduate education in ship resistance and propulsion. The book provides connections between basic training in calculus and fluid mechanics and the application of hydrodynamics in daily ship design practice. Based on a foundation in fluid mechanics, the origin, use, and limitations of experimental and computational procedures for resistance and propulsion estimates are explained. The book is subdivided into sixty chapters, providing background material for individual lectures. The unabridged treatment of equations and the extensive use of figures and examples enable students to study details at their own pace. Key features: • Covers the range from basic fluid mechanics to applied ship hydrodynamics. • Subdivided into 60 succinct chapters. • In-depth coverage of material enables self-study. • Around 250 figures and tables. Fundamentals of Ship Hydrodynamics is essential reading for students and staff of naval architecture, ocean engineering, and applied physics. The book is also useful for practicing naval architects and engineers who wish to brush up on the basics, prepare for a licensing exam, or expand their knowledge.

Progress in Industrial Mathematics at ECMI 96-Morten Brons 1997-01-01

Twenty-Second Symposium on Naval Hydrodynamics-National Research Council 2000-03-02 The Twenty-Second Symposium on Naval Hydrodynamics was held in Washington, D.C., from August 9-14, 1998. It coincided with the 100th anniversary of the David Taylor Model Basin. This international symposium was organized jointly by the Office of Naval Research (Mechanics and Energy Conversion S&T Division), the National Research Council (Naval Studies Board), and the Naval Surface Warfare Center, Carderock Division (David Taylor Model Basin). This biennial symposium promotes the technical exchange of naval research developments of common interest to all the countries of the world. The forum encourages both formal and informal discussion of the presented papers, and the occasion provides an opportunity for direct communication between international peers.

Twenty-First Symposium on Naval Hydrodynamics-National Research Council 1997-09-11

Marine Design XIII, Volume 1-Pentti Kujala 2018-06-04 This is volume 1 of a 2-volume set. Marine Design XIII collects the contributions to the 13th International Marine Design Conference (IMDC 2018, Espoo, Finland, 10-14 June 2018). The aim of this IMDC series of conferences is to promote all aspects of marine design as an engineering discipline. The focus is on key design challenges and opportunities in the area of current maritime technologies and markets, with special emphasis on: • Challenges in merging ship design and marine applications of experience-based industrial design • Digitalisation as technological enabler for stronger link between efficient design, operations and maintenance in future • Emerging technologies and their impact on future designs • Cruise ship and icebreaker designs including fleet compositions to meet new market demands To reflect on the conference focus, Marine Design XIII covers the following research topic series: •State of art ship design principles - education, design methodology, structural design, hydrodynamic design; •Cutting edge ship designs and operations - ship concept design, risk and safety, arctic design, autonomous ships; •Energy efficiency and propulsions - energy efficiency, hull form design, propulsion equipment design; •Wider marine designs and practices - navy ships, offshore and wind farms and production. Marine Design XIII contains 2 state-of-the-art reports on design methodologies and cruise ships design, and 4 keynote papers on new directions for vessel design practices and tools, digital maritime traffic, naval ship designs, and new tanker design for arctic. Marine Design XIII will be of interest to academics and professionals in maritime technologies and marine design.

Parametric Design and Hydrodynamic Optimization of Ship Hull Forms-Stefan Harries 1998

Hydrodynamics of Ship Propellers-John P. Breslin 1996-11-13 Technical introduction to ship propeller hydrodynamics, for researchers in ocean technology, naval architecture, mechanical engineering.

Design of Ship Hull Structures-Yasuhisa Okumoto 2009-03-25 In this book, the four authors show us the condensed experience how to design ship hull structures from a practical viewpoint. In three parts, the book presents the fundamentals, the theory and the application of structural design of hulls. The topics are treated comprehensively with an emphasis on how to achieve reliable and efficient ship structures. The authors have in particular introduced their experiences with the rapid increase of ship sizes as well as the introduction of ship types with a high degree of specialization. The associated early failures of these "new" structures have been analyzed to provide the readers with illustrations why structural design needs to be carried out on several levels in order to ensure that correct loading is applied and that local structural behaviour is properly understood.

Twenty-Third Symposium on Naval Hydrodynamics-National Research Council 2002-01-01 "Vive la Revolution!" was the theme of the Twenty-Third Symposium on Naval Hydrodynamics held in Val de Reuil, France, from September 17-22, 2000 as more than 140 experts in ship design, construction, and operation came together to exchange naval research developments. The forum encouraged both formal and informal discussion of presented papers, and the occasion provides an opportunity for direct communication between international peers. This book includes sixty-three papers presented at the symposium which was organized jointly by the Office of Naval Research, the National Research Council (Naval Studies Board), and the Bassin d'Essais des Carènes. This book includes the ten topical areas discussed at the symposium: wave-induced motions and loads, hydrodynamics in ship design, propulsor hydrodynamics and hydroacoustics, CFD validation, viscous ship hydrodynamics, cavitation and bubbly flow, wave hydrodynamics, wake dynamics, shallow water hydrodynamics, and fluid dynamics in the naval context.

Research on Ship Design and Optimization Based on Simulation-Based Design (SBD) Technique-Bao-Ji Zhang 2018-05-30 Ship optimization design is critical to the preliminary design of a ship. With the rapid development of computer technology, the simulation-based design (SBD) technique has been introduced into the field of ship design. Typical SBD consists of three parts: geometric reconstruction; CFD numerical simulation; and optimization. In the context of ship design, these are used to alter the shape of the ship, evaluate the objective function and to assess the hull form space respectively. As such, the SBD technique opens up new opportunities and paves the way for a new method for optimal ship design. This book discusses the problem of optimizing ship's hulls, highlighting the key technologies of ship optimization design and presenting a series of hull-form optimization platforms. It includes several improved approaches and novel ideas with significant potential in this field

Marine Hydrodynamics-J. N. Newman 2018-01-19 A textbook that offers a unified treatment of the applications of hydrodynamics to marine problems. The applications of hydrodynamics to naval architecture and marine engineering expanded dramatically in the 1960s and 1970s. This classic textbook, originally published in 1977, filled the need for a single volume on the applications of hydrodynamics to marine problems. The book is solidly based on fundamentals, but it also guides the student to an understanding of engineering applications through its consideration of realistic configurations. The book takes a balanced approach between theory and empirics, providing the necessary theoretical background for an intelligent evaluation and application of empirical procedures. It also serves as an introduction to more specialized research methods. It unifies the seemingly diverse problems of marine hydrodynamics by examining them not as separate problems but as related applications of the general field of hydrodynamics. The book evolved from a first-year graduate course in MIT's Department of Ocean Engineering. A knowledge of advanced calculus is assumed. Students will find a previous introductory course in fluid dynamics helpful, but the book presents the necessary fundamentals in a self-contained manner. The 40th anniversary of this pioneering book offers a foreword by John Grue. Contents Model Testing • The Motion of a Viscous Fluid • The Motion of an Ideal Fluid • Lifting Surfaces • Waves and Wave Effects • Hydrodynamics of Slender Bodies

Design Principles of Ships and Marine Structures-Suresh Chandra Misra 2015-12-01 The Definitive Reference for Designers and Design Students A solid grasp of the fundamentals of materials, along with a thorough understanding of load and design techniques, provides the components needed to complete a marine platform design. Design Principles of Ships and Marine Structures details every facet of ship design and design integration, and highlights the design aspects that must be put together to create an integrated whole product. This book discusses naval architecture and marine engineering applications and principles relevant to the design of various systems, examines advanced numerical techniques that can be applied to maritime design procedure at the concept design stage, and offers a comprehensive approach to the subject of ship design. Covers the Entire Sphere of Marine Design The book begins with an introduction to marine design and the marine environment, describing many of the marine products that are used for transportation, defense and the exploitation of marine resources. It also discusses stability issues relevant to ship design, as well as hydrodynamic aspects of resistance, propulsion, sea keeping and maneuvering, and their effects on design. In addition to covering the various systems and sub-systems that go into making a complex product to be used in maritime environment, the author explains engineering economics and its application in ship design, and provides examples wherever necessary. Written by an author with more than 35 years of teaching experience, this book: Describes various design methodologies such as sequential design process with the application of concurrent engineering and set based design factors in the use of computer-aided design techniques Highlights the shape design methodology of ship forms and layout design principles Considers design aspects relative to safety and risk assessment Introduces the design for production aspects in marine product development Discusses design principles for sustainability Explains the principles of numerical optimization for decision-making Design Principles of Ships and Marine Structures focuses on ship design efficiency, safety, sustainability, production, and management, and appeals to students and design professionals in the field of shipping, shipbuilding and offshore engineering.

Marine Design XIII, Volume 2-Pentti Kujala 2018-06-04 This is volume 2 of a 2-volume set. Marine Design XIII collects the contributions to the 13th International Marine Design Conference (IMDC 2018, Espoo, Finland, 10-14 June 2018). The aim of this IMDC series of conferences is to promote all aspects of marine design as an engineering discipline. The focus is on key design challenges and opportunities in the area of current maritime technologies and markets, with special emphasis on: • Challenges in merging ship design and marine applications of experience-based industrial design • Digitalisation as technological enabler for stronger link between efficient design, operations and maintenance in future • Emerging technologies and their impact on future designs • Cruise ship and icebreaker designs including fleet compositions to meet new market demands To reflect on the conference focus, Marine Design XIII covers the following research topic series: •State of art ship design principles - education, design methodology, structural design, hydrodynamic design; •Cutting edge ship designs and operations - ship concept design, risk and safety, arctic design, autonomous ships; •Energy efficiency and propulsions - energy efficiency, hull form design, propulsion equipment design; •Wider marine designs and practices - navy ships, offshore and wind farms and production. Marine Design XIII contains 2 state-of-the-art reports on design methodologies and cruise ships design, and 4 keynote papers on new directions for vessel design practices and tools, digital maritime traffic, naval ship designs, and new tanker design for arctic. Marine Design XIII will be of interest to academics and professionals in maritime technologies and marine design.

A Holistic Approach to Ship Design-Apostolos Papanikolaou 2018-12-11 This book introduces a holistic approach to ship design and its optimisation for life-cycle operation. It deals with the scientific background of the adopted approach and the associated synthesis model, which follows modern computer aided engineering (CAE) procedures. It integrates techno-economic databases, calculation and multi-objective optimisation modules and s/w tools with a well-established Computer-Aided Design (CAD) platform, along with a Virtual Vessel Framework (VVF), which will allow virtual testing before the building phase of a new vessel. The resulting graphic user interface (GUI) and information exchange systems enable the exploration of the huge design space to a much larger extent and in less time than is currently possible, thus leading to new insights and promising new design alternatives. The book not only covers the various stages of the design of the main ship system, but also addresses relevant major onboard systems/components in terms of life-cycle performance to offer readers a better understanding of suitable outfitting details, which is a key aspect when it comes the outfitting-intensive products of international shipyards. The book disseminates results of the EU funded Horizon 2020 project HOLISHIP.

Fuzzy Techniques: Theory and Applications-Ralph Baker Kearfoot 2019-06-10 This book describes the latest findings related to fuzzy techniques, discussing applications in control, economics, education, humor studies, industrial engineering, linguistics, management, marketing, medicine and public health, military engineering, robotics, ship design, sports, transportation, and many other areas. It also presents recent fuzzy-related algorithms and theoretical results that can be used in other application areas. Featuring selected papers from the Joint World Congress of the International Fuzzy Systems Association (IFSA) and the Annual Conference of the North American Fuzzy Information Processing Society (NAFIPS) IFSA-NAFIPS'2019, held in Lafayette, Louisiana, USA, on June 18-21, 2019, the book is of interest to practitioners wanting to use fuzzy techniques to process imprecise expert knowledge. It is also a valuable resource for researchers wishing to extend the ideas from these papers to new application areas, for graduate students and for anyone else interested in problems involving fuzziness and uncertainty.

Practical Design of Ships and Other Floating Structures-Tetsuo Okada 2020-10-05 This book gathers the peer-reviewed proceedings of the 14th International Symposium, PRADS 2019, held in Yokohama, Japan, in September 2019. It brings together naval architects, engineers, academic researchers and professionals who are involved in ships and other floating structures to share the latest research advances in the field. The contents cover a broad range of topics, including design synthesis for ships and floating systems, production, hydrodynamics, and structures and materials. Reflecting the latest advances, the book will be of interest to researchers and practitioners alike.

Numerical Ship Hydrodynamics-Takanori Hino 2020 This book explores computational fluid dynamics applied to ship hydrodynamics and provides guidelines for the future developments in the field based on the Tokyo 2015 Workshop. It presents ship hull test cases, experimental data and submitted computational methods, conditions, grids and results. Analysis is made of errors for global (resistance, sinkage, trim and self-propulsion) and local flow (wave elevations, mean velocities and turbulence) variables, including standard deviations for global variables. The effects of grid size and turbulence models are evaluated for both global and local flow variables. Detailed analysis is made of turbulence modeling capabilities for capturing local flow physics. Errors and standard deviations are also assessed for added resistance (captive test cases) and course keeping/steed loss (free running test cases) in head and oblique waves. All submissions are used to evaluate the error and uncertainty by means of a systematic verification and validation (V&V) study along with statistical investigations.

Submarine Hydrodynamics-Martin Renilson 2018-04-20 This book covers specific aspects of submarine hydrodynamics in a very practical manner. The author reviews basic concepts of ship hydrodynamics and goes on to show how they are applied to submarines, including a look at the use of physical model experiments. The book is intended for professionals working in submarine hydrodynamics, as well as for advanced students in the field. This revised edition includes updated information on empirical methods for predicting the hydrodynamic manoeuvring coefficients, and for predicting the resistance of a submarine. It also includes new material on how to assess propulsors, and includes measures of wake distortion, which has a detrimental influence on propulsor performance. Additional information on safe manoeuvring envelopes is also provided. The wide range of references has been updated to include the latest material in the field.

Ship Resistance and Propulsion-Anthony F. Molland 2011-08-08 Ship Resistance and Propulsion provides a comprehensive approach to evaluating ship resistance and propulsion. Informed by applied research, including experimental and CFD techniques, this book provides guidance for the practical estimation of ship propulsive power for a range of ship types. Published standard series data for hull resistance and propeller performance enables practitioners to make ship power predictions based on material and data contained within the book. Fully worked examples illustrate applications of the data and powering methodologies; these include cargo and container ships, tankers and bulk carriers, ferries, warships, patrol craft, work boats, planing craft and yachts. The book is aimed at a broad readership including practising naval architects and marine engineers, seagoing officers, small craft designers, undergraduate and postgraduate students. Also useful for those involved in transportation, transport efficiency and ecologists who need to carry out reliable estimates of ship power requirements.

Ship Design-Apostolos Papanikolaou 2014-09-16 This book deals with ship design and in particular with methodologies of the preliminary design of ships. The book is complemented by a basic bibliography and five appendices with useful updated charts for the selection of the main dimensions and other basic characteristics of different types of ships (Appendix A), the determination of hull form from the data of systematic hull form series (Appendix B), the detailed description of the relational method for the preliminary estimation of ship weights (Appendix C), a brief review of the historical evolution of shipbuilding science and technology from the prehistoric era to date (Appendix D) and finally a historical review of regulatory developments of ship's damage stability to date (Appendix E). The book can be used as textbook for ship design courses or as additional reading for university or college students of naval architecture courses and related disciplines; it may also serve as a reference book for naval architects, practicing engineers of related disciplines and ship officers, who like to enter the ship design field systematically or to use practical methodologies for the estimation of ship's main dimensions and of other ship main properties and elements of ship design.

Multicriterion Evolutionary Optimization of Ship Hull Forms for Propulsion and Seakeeping-Steven Francis Zalek 2006

Maritime Information Review- 1999

Hydrodynamic Propulsion and Its Optimization-J.A. Sparenberg 1994-12-31 HYDRODYNAMIC PROPULSION AND ITS OPTIMIZATION ANALYTIC THEORY Hydrodynamic propulsion has been of major interest ever since craft took to the water. In the course of time, many attempts have been made to invent, develop, or to improve hydrodynamic propulsion devices. Remarkable achievements in this field were made essentially by experienced individuals, who were in need of reliable propulsion units such as paddle wheels, sculling devices, screw propellers, and of course, sails. The problem of minimizing the amount of input energy for a prescribed effective output was first investigated seriously at the beginning of this century. In 1919, BETZ presented a paper on air-screw propellers with minimum consumption of energy which could be applied to ship-screw propellers also. Next, attempts were made to optimize hydrodynamic propulsion units. Ensuing investigations concerned the optimization of the hydrodynamic system: ship-propeller. The first simple theory of ship propulsion which was presented considered more or less only thrust augmentation, wake processing and modification of propeller characteristics when operating behind the ships hull. This theory has been little improved meanwhile and is still useful, particularly with regard to practical ship design and for evaluating results of ship model tests. However, this theory is not adequate for optimization procedures necessary for high-technology propulsion, particularly for ship propellers utilizing propulsion improving devices such as tip end plates or tip fins at the propeller blades, spoilers in front of the propeller, asymmetrical stern etc.

Hydrodynamics of High-Speed Marine Vehicles-Odd M. Faltinsen 2006-01-09 Hydrodynamics of High-Speed Marine Vehicles, first published in 2006, discusses the three main categories of high-speed marine vehicles - vessels supported by submerged hulls, air cushions or foils. The wave environment, resistance, propulsion, seakeeping, sea loads and manoeuvring are extensively covered based on rational and simplified methods. Links to automatic control and structural mechanics are emphasized. A detailed description of waterjet propulsion is given and the effect of water depth on wash, resistance, sinkage and trim is discussed. Chapter topics include resistance and wash; slamming; air cushion-supported vessels, including a detailed discussion of wave-excited resonant oscillations in air cushion; and hydrofoil vessels. The book contains numerous illustrations, examples and exercises.

Load and Global Response of Ships-J.J Jensen 2001-08-08 Load and Global Response of Ships gives an introductory background to naval architecture statistics and strength of materials. Each subject is treated in detail; starting from the first principle. The aim of this title was to derive and present the necessary theoretical framework for predicting the extreme loads and the corresponding hull girder stresses that a ship may be subjected to during its operational lifetime. Although some account is given to reliability analysis, the present treatment has to be supplemented with methods for detailed stress evaluation and for structural strength assessment before a complete structural reliability analysis can be carried out. The classification societies have issued rules and regulations for a proper structural analysis of a ship and selection of the scantlings. Previously, those rules rather explicitly gave formulae for the thickness of the hull platings, the size of the stiffeners etc. Such empirical rules must necessarily be rather conservative in order to apply to a large variety of ships. With the advent of powerful computers, the rules have changed. Today, the naval architect can perform the structural analysis using mainly rational methods based on first principles. The classification society may then specify proper safety factors against local global failure modes, taking into account the consequences of failure and the analysis procedure used. A cruder method of analysis then necessitates a larger safety factor. Therefore the effort made by the experienced naval architect to perform a detailed structural analysis will be returned not just by a rational structural arrangement but also often in lower weight of the ship and thus a higher payload throughout the operational lifetime of the ship. This analysis has attempted to make explicit one way in which designers limit the design space by creating rules to which they expect users to adhere. It is also an attempt to encourage designers to reconsider the "rules of use" that they have used in their designs, so as to reconceptualise potential usage. This can help design behaviour where rule use is not blindly followed. By making these rules visible, it is possible to expose the limitations of current technology, and development design solutions that do not restrict use to the "normal" case of action. Rules are useful to designers because they are simplifications of activity. Rules encode the normal case, and these are simplistic representations of work that are, in many cases, accurate enough for the purpose of design. However, encoding behaviour in rules has dangers in that they do not encompass the whole range of behaviours that can be performed. Using examples, this title shows that being able to break rules means that people are able to engage in a richer more flexible set of actions (and therefore more appropriate to contingency) than when they are constrained to a limited range.

Transactions of the Royal Institution of Naval Architects-Royal Institution of Naval Architects 2000 List of members in each volume.

AI Magazine- 1989

Buckling of Ship Structures-Mohamed Shama 2012-08-04 Buckling of Ship Structures presents a comprehensive analysis of the buckling problem of ship structural members. A full analysis of the various types of loadings and stresses imposed on ship plating and primary and secondary structural members is given. The main causes and consequences of the buckling mode of failure of ship structure and the methods commonly used to control buckling failure are clarified. This book contains the main equations required to determine the critical buckling stresses for both ship plating and the primary and secondary stiffening structural members. The critical buckling stresses are given for ship plating subjected to the induced various types of loadings and having the most common boundary conditions encountered in ship structures. The text bridges the gap existing in most books covering the subject of buckling of ship structures in the classical analytical format, by putting the emphasis on the practical methods required to ensure safety against buckling of ship structural members. It is very useful to ship designers, shipyard engineers, naval architects, international classification societies and also to students studying naval architecture, marine engineering and offshore structures. It is a valuable source for practicing naval architects to quickly check the possibility of buckling of ship structure members without reverting to the complex and costly analysis using advanced FEM software.

Ship Technology Research- 2005

Ship Resistance and Propulsion-Anthony F. Molland 2011-08-08 Ship Resistance and Propulsion provides a comprehensive approach to evaluating ship resistance and propulsion. Informed by applied research, including experimental and CFD techniques, this book provides guidance for the practical estimation of ship propulsive power for a range of ship types. Published standard series data for hull resistance and propeller performance enables practitioners to make ship power predictions based on material and data contained within the book. Fully worked examples illustrate applications of the data and powering methodologies; these include cargo and container ships, tankers and bulk carriers, ferries, warships, patrol craft, work boats, planing craft and yachts. The book is aimed at a broad readership including practising naval architects and marine engineers, seagoing officers, small craft designers, undergraduate and postgraduate students. Also useful for those involved in transportation, transport efficiency and ecologists who need to carry out reliable estimates of ship power requirements.

CFD and CAD in Ship Design-Gerard Oortmersen 1990 In the field of hydrodynamics, various methods have been developed for the prediction of calm water resistance and manoeuvring characteristics. These methods range from rather simple empirical methods to very advanced Computational Fluid Dynamics (CFD). In ship design, Computer Aided Design (CAD) applications mainly focus on the description of the geometry of the ship and the calculation of hydrostatic properties. Considerable attention has been given to drawing systems and connectivity to systems for supporting the production process of ships - Computer Aided Manufacturing (CAM). This volume reviews the rapid advances that have been made in computer applications to ship hydrodynamics and ship design, due to developments in the performance of computer hardware. Special attention is paid to the integration of hydrostatic calculations in ship design software offering new possibilities to ship designers for optimizing the design of ships.

Oceanic Abstracts with Indexes- 1983

High Speed Catamarans and Multihulls-Liang Yun 2018-10-29 High speed catamaran and multihull high speed marine vessel have become very popular in the last two decades. The catamaran has become the vessel of choice for the majority of high speed ferry operators worldwide. There have been significant advances in structural materials, and structural design has been combined with higher power density and fuel efficient engines to deliver ferries of increasing size. The multihull has proven itself to be a suitable configuration for active power projection across oceans as well as for coastal patrol and protection, operating at high speed for insertion or retrieval with a low energy capability. At present there is no easily accessible material covering the combination of hydrodynamics, aerodynamics, and design issues including structures, powering and propulsion for these vehicles. Coverage in High Speed Catamarans and Multihulls includes an introduction to the history, evolution, and development of catamarans, followed by a theoretical calculation of wave resistance in shallow and deep water, as well as the drag components of the multihull. A discussion of vessel concept design describing design characteristics, empirical regression for determination of principal dimensions in preliminary design, general arrangement, and methods is also included. The book concludes with a discussion of experimental future vehicles currently in development including the small waterplane twin hull vessels, wave piercing catamarans, tunnel planing catamarans and other multihull vessels.

Principles of Yacht Design-Rolf Eriasson 2014-01-16 Principles of Yacht Design has established itself as the standard book on the subject for practising designers, naval architecture students, discerning boat owners as well as the boatbuilding industry as a whole. The fourth edition is completely revised and expanded and follows the design from scratch of a completely new yacht including all new computer-generated explanatory illustrations. As such, it examines every aspect of the process of yacht and powerboat design. The authors have used a newly designed 41 foot performance cruiser to demonstrate the practical application of yacht design theory. Beginning with the yacht's specifications, the authors examine the vital topics of aero and hydrodynamics and conclude with practical matters such as the layout of the cockpit, deck and cabin, and provide a complete weight calculation for the boat. 'This book is deeply fascinating . . . a must.' Classic Boat 'The standard book on the subject for practising designers, naval architecture students, discerning boat owners and the boatbuilding industry as a whole.' Yachting Life (May 2007) 'A definitive work on yacht design.' Cruising

Hydrodynamics of Planing Monohull Watercraft-William S. Vorus 2016-08-26 This book addresses the principles involved in the design and engineering of planing monohull power boats, with an emphasis on the theoretical fundamentals that readers need in order to be fully functional in marine design and engineering. Author William Vorus focuses on three topics: boat resistance, seaway response, and propulsion and explains the physical principles, mathematical details, and theoretical details that support physical understanding. In particular, he explains the approximations and simplifications in mathematics that lead to success in the applications of planing craft design engineering, and begins with the simplest configuration that embodies the basic physics. He leads readers, step-by-step, through the physical complications that occur, leading to a useful working knowledge of marine design and engineering. Included in the book are a wealth of examples that exemplify some of the most important naval architecture and marine engineering problems that challenge many of today's engineers.

Progress in Maritime Technology and Engineering-Carlos Guedes Soares 2018-04-17 Progress in Maritime Technology and Engineering collects the papers presented at the 4th International Conference on Maritime Technology and Engineering (MARTECH 2018, Lisbon, Portugal, 7-9 May 2018). This conference has evolved from a series of biannual national conferences in Portugal, and has developed into an international event, reflecting the internationalization of the maritime sector and its activities. MARTECH 2018 is the fourth in this new series of biannual conferences. Progress in Maritime Technology and Engineering contains about 80 contributions from authors from all parts of the world, which were reviewed by an International Scientific Committee. The book is divided into the subject areas below: - Port performance - Maritime transportation and economics - Big data in shipping - Intelligent ship navigation - Ship performance - Computational fluid dynamics - Resistance and propulsion - Ship propulsion - Dynamics and control - Marine pollution and sustainability - Ship design - Ship structures - Structures in composite materials - Shipyard technology - Coating and corrosion - Maintenance - Risk analysis - Offshore and subsea technology - Ship motion - Ships in transit - Wave-structure interaction - Wave and wind energy - Waves Progress in Maritime Technology and Engineering will be of interest to academics and professionals involved in the above mentioned areas.

A Hydrodynamic Hull Form Design Procedure in Conceptual and Preliminary Ship Design-Kadir Sariöz 1993

Proceedings of the ASME Fluids Engineering Division- 2000

Marine Propellers and Propulsion-John Carlton 2012 The early development of the screw propeller. Propeller geometry. The propeller environment. The ship wake field, propeller performance characteristics.

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