Ship Collision Risk For An Offshore Wind Farm Dvikan


Seismic design guidelines for port structures Safety, Reliability and Risk Analysis. Theory, Methods and Applications contains the papers presented at the joint ESREL (European Safety and Reliability) and SRA-Europe (Society for Risk Analysis Europe) Conference (Valencia, Spain, 22-25 September 2008). The book covers a wide range of topics, including: Accident and Incident Investigation; Crisis Management; Risk Assessment; Risk Management; Risk Communication; and Risk Acceptance.

Ship Collision with Bridges

Maritime Technology and Engineering

Marine Design XIII Artificial Intelligence and Big Data Analytics for Smart Healthcare serves as a key reference for practitioners and experts involved in healthcare as they strive to enhance the value added of healthcare and develop more sustainable healthcare systems. It brings together insights from emerging sophisticated information and communication technologies such as big data analytics, artificial intelligence, machine learning, data science, medical intelligence, and, by dwelling on their current and prospective applications, highlights managerial and policymaking challenges they may generate. The book is split into five sections: big data infrastructure, framework and design for smart healthcare; signal processing techniques for smart healthcare applications; business analytics (descriptive, diagnostic, predictive and prescriptive) for smart healthcare; emerging tools and techniques for smart healthcare; and challenges (security, privacy, and policy) in big data for smart healthcare. The content is carefully developed to be understandable to different members of healthcare chain to leverage collaborations with researchers and industry. Presents a holistic discussion on the new landscape of data driven medical technologies including Big Data, Analytics, Artificial Intelligence, Machine Learning, and Precision Medicine Discusses such technologies with case study driven approach with reference to real world application and systems, to make easier the understanding to the reader not familiar with them Encompasses an international collaboration perspective, providing understandable knowledge to professionals involved with healthcare to leverage productive partnerships with technology developers.

Application of Intelligent Systems in Multi-modal Information Analytics Civil Engineering Topics, Volume 4 Proceedings of the 29th IMAC, A Conference and Exposition on Structural Dynamics, 2011, the fourth volume of six from the Conference, brings together 35 contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Civil Engineering, including Operational Modal Analysis, Dynamic Behaviors and Structural Health Monitoring.

The Risk of a Ship Encounter Leading to a Collision Maritime Technology and Engineering includes the papers presented at the 2nd International Conference on Maritime Technology and Engineering (MARTECH 2014, Lisbon, Portugal, 15-17 October 2014). The contributions reflect the internationalization of the maritime sector, and cover a wide range of topics: Ports; Maritime transportation; Inland navigation.

Safety, Reliability and Risk Analysis Accident records show that sooner or later hindrances near a waterway will be hit by ships, be it navigation marks, bridge structures, reefs or shallows. With this background modelling and analysis of ship collisions to bridge structures have an increasing importance as the basis for rational decision making in connection with planning, design and construction of...
bridges over navigable waters. The International Symposium on Ship Collision Analysis focuses on advances in accident analysis, collision prevention and protective measures. The publication Ship Collision Analysis, Proceedings of the 1998 International Symposium, presents the papers of international experts in ship collision analysis and structural design. The contributions give the state of the art and point to future development trends with in the focus areas.

Ships and Offshore Structures XIX Providing high-quality, scholarly research, addressing development, application and implications, in the field of maritime education, maritime safety management, maritime policy sciences, maritime industries, marine environment and energy technology. Contents include electronics, astronomy, mathematics, cartography, command and control, psycho

Risk, Reliability and Safety: Innovating Theory and Practice Collision and Grounding of Ships and Offshore Structures contains the latest research results and innovations presented at the 6th International Conference on Collision and Grounding of Ships and Offshore Structures (Trondheim, Norway, 17-19 June 2013). The book comprises contributions made in the field of numerical and analytical analysis of safety, reliability and risk analysis. The TransNav 2011 Symposium held at the Gdynia Maritime University, Poland in June 2011 has brought together a wide range of participants from all over the world. The program has offered a variety of contributions, allowing to look at many aspects of the navigational safety from various different points of view. Topics presented and discussed at the Life-cycle of Structural Systems Real-time, interactive ship simulators limped onto the scene, in the wake of flight simulators, some years ago. The maritime industries have a long history of conservatism, but this is now changing rapidly. The information age has also swept over ships and shipping, and has been taken to heart to such an extent that, for example, flight simulators now cooperate with ship simulators and import useful new concepts and methodologies. The more than 50 papers contained in this book show what and why. Although traditionally conservative, the marine world is also traditionally international and this has not changed. The papers in the book are by leading authors from all over the world and provide a detailed snap-shot of the rapidly advancing state-of-the-art, together with pointers to the future. The overall theme of MARSIM '96 and therefore also of this book is: Vessel manoeuvrability and marine simulation research, training and assessment, and includes original papers on topics such as bridge resource management, distant learning and simulators coupled via the Internet, virtual reality, neural networks, rudder-propeller hydrodynamics, prime mover models, squat in shallow water, and many more.

Maritime Technology and Engineering 5 Volume 1 The TransNav 2013 Symposium held at the Gdynia Maritime University, Poland in June 2013 has brought together a wide range of participants from all over the world. The program has offered a variety of contributions, allowing to look at many aspects of the navigational safety from various different points of view. Topics presented and discussed at the Maritime Transportation and Regional Sustainability Composed of the proceedings of a symposium on engineering geology and the environment, held in Athens in June, 1997, this work provides a survey of trends in engineering geology, and an interdisciplinary collaboration with hydrogeology, geochemistry, geomorphology, and soil and rock mechanics.

Practical Design of Ships and Other Floating Structures Accident records show that sooner or later hindrances near a waterway will be hit by ships, be it navigation marks, bridge structures, reefs or shallows. With this background modelling and analysis of ship collisions to bridge structures have an increasing importance as the basis for rational decision making in connection with planning, design and construction of bridges over navigable waters. The International Symposium on Ship Collision Analysis focuses on advances in accident analysis, collision prevention and protective measures. The publication Ship Collision Analysis, Proceedings of the 1998 International Symposium, presents the papers of international experts in ship collision analysis and structural design. The contributions give the state of the art and point to future development trends with in the focus areas.

Probability and Mechanics of Ship Collision and Grounding This book constitutes the refereed proceedings of the 9th International Conference on Computational Logistics, ICCL 2018, held in Vietri sul Mare, Italy, in October 2018. The 32 full papers presented were carefully reviewed and selected from 71 submissions. They are organized in topical sections as follows: maritime shipping and routing, container handling and container terminals, vehicle routing and multi-modal transportation, network design and scheduling, logistics oriented combinatorial optimization.

Collision and Grounding of Ships and Offshore Structures This book presents a variety of perspectives on vision-based applications. These contributions are focused on optoelectronic sensors, 3D & 2D machine vision technologies, robot navigation, control schemes, motion controllers, intelligent algorithms and vision systems. The authors focus on applications of unmanned aerial vehicles, autonomous and mobile robots, industrial inspection applications and structural health monitoring. Recent advanced research in measurement and other areas where 3D & 2D machine vision and machine control play an important role, as well as surveys and reviews about vision-based applications. These topics are of interest to readers from diverse areas, including electrical, electronics and computer engineering, technologists, students and non-specialist readers. It presents current research in image and signal sensors, methods, and 3D & 2D technologies in vision-based theories and applications; Discusses applications such as daily use devices including robotics, detection, tracking and stereoscopic vision systems, pose estimation, avoidance of objects, control and data exchange for navigation, and aerial imagery processing; Includes research contributions in scientific, industrial, and civil applications.
PIANC Yearbook 2015

Machine Vision, Navigation and the Environment This three-volume work presents the proceedings from the 19th International Ship and Offshore Structures Congress held in Cascais, Portugal on 7th to 10th September 2015. The International Ship and Offshore Structures Congress (ISSC) is a forum for the exchange of information by experts undertaking and applying marine structural research. The aim of the conference 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 ship and offshore structures.

Marine Navigation Offshore Risk Assessment is the first book to deal with quantified risk assessment (QRA) as applied specifically to offshore installations and operations. Risk assessment techniques have been used for some years in the offshore oil and gas industry, and their use is set to expand increasingly as the industry moves into new areas and faces new challenges in older regions. The book starts with a thorough discussion of risk analysis methodology. Subsequent chapters are devoted to analytical approaches to escalation, escape, evacuation and rescue analysis of safety and emergency systems. Separate chapters analyze the main hazards of offshore structures: Fire, explosion, collision and falling objects. Risk mitigation and control are then discussed, followed by an outline of an alternative approach to risk modelling that focuses especially on the risk of short-duration activities. Not only does the book describe the state of the art of QRA, it also identifies weaknesses and areas that need development. Readership: Besides being a comprehensive reference for academics and students of marine/offshore risk assessment and management, the book should also be owned by professionals in the industry, contractors, suppliers, consultants and regulatory authorities.

Marine Navigation and Safety of Sea Transportation

Marine Simulation and Ship Manoeuvrability

Civil Engineering Topics, Volume 4 Probability and Mechanics of Ship Collision and Grounding provides simplified analytical procedures for ship collision and grounding assessments, including probabilistic methods, an estimation of the energy released during collisions, and a prediction of the extent of damage on involved structures. An additional chapter is dedicated to current finite element analysis techniques that are used for estimating structural damage during ship collisions. The book encapsulates reliable and fast analysis methods for collision and grounding assessment, presenting tactics that have been extensively validated with experimental and numerical results. In addition, all described analysis methods include realistic calculation examples to provide confidence in their use. Provides mathematical expressions for the determination of probability of ship grounding events, ship to ship collisions and ship collisions against fixed and floating offshore installations, i.e., offshore wind parks and bridges over navigational channels. Provides analytical solutions to calculate the energy released for crushing in ship collision scenarios and loading on ship bottoms in grounding events. Reviews damage theorems and materials modelling and presents simplified analytical methods to determine the structural damage of ship and offshore structures in ship collisions and grounding. Provides calculation examples for each analysis method.

Ship Collision and the Offshore Floating Nuclear Plant (OFNP) This book presents the proceedings of the 2020 International Conference on Intelligent Systems Applications in Multi-modal Information Analytics, held in Changzhou, China, on June 18-19, 2020. It provides comprehensive coverage of the latest advances and trends in information technology, science and engineering. It addresses a number of broad themes, including data mining, multi-modal informatics, agent-based and multi-agent systems for health and education informatics, which inspire the development of intelligent information technologies. The contributions cover a wide range of topics such as AI applications and innovations in health and education informatics; data and knowledge management; multi-modal application management; and web/social media mining for multi-modal informatics. Outlining promising future research directions, the book is a valuable resource for students, researchers and professionals, and a useful reference guide for newcomers to the field.

Ship Collision Analysis 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.

Engineering Geology and the Environment 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 propulsion - 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.

Ship Collision Analysis The safe and reliable performance of many systems with which we interact daily has been achieved through the analysis and management of risk. From complex infrastructures to consumer durables, from engineering systems and technologies used in transportation, health, energy, chemical, oil, gas, aerospace, maritime, defence and other sectors, the management of risk during design, manufacture, operation and decommissioning is vital. Methods and models to support risk-informed decision-making are well established but are continually challenged by technology innovations, increasing interdependencies, and changes in societal expectations. Risk, Reliability and Safety contains papers describing innovations in theory and practice contributed to the scientific programme of the European Safety and Reliability conference (ESREL 2016), held at the University of Strathclyde in Glasgow, Scotland (25-29 September 2016). Authors include scientists, academics, practitioners, regulators and other key individuals with expertise and experience relevant to specific areas. Papers include domain specific applications as well as general modelling methods. Papers cover evaluation of contemporary solutions, exploration of future challenges, and exposition of concepts, methods and processes. Topics include human factors, occupational health and safety, dynamic and systems reliability modelling, maintenance optimisation, uncertainty analysis, resilience assessment, risk and crisis management.

Information, Communication and Environment Developments in the Collision and Grounding of Ships and Offshore includes the contributions to the 8th International Conference on Collision and Grounding of Ships and Offshore Structures (ICCGS 2019, Lisbon, Portugal, 21-23 October 2019). The series of ICCGS-conferences started in 1996 in San Francisco, USA, and are organised every three years in Europe, Asia and the Americas. Developments in the Collision and Grounding of Ships and Offshore covers a wide range of topics, from the behavior of large passenger vessels in collision and grounding, collision and grounding in arctic conditions including accidental ice impact, stability residual strength and oil outflow of ships after collision or grounding, collision and grounding statistics and predictions and measures of the probability of incidents, risk assessment of collision and grounding, prediction and measures for reduction of collision and grounding, new designs for improvement of structural resistance to collisions, analysis of ultimate strength of ship structures (bulkheads, tank tops, shell etc.), design of buffer bows to reduce collision consequences, design of foreship structures of ferries with doors to avoid water ingress in case of a collision, development of rational rules for the structural design against collision and grounding, innovative navigation systems for safer sea transportation, the role of IMO, classification societies, and other regulatory bodies in developing safer ships, collision between ships and offshore structures, collision between ships and fixed or floating bridges and submerged tunnels, collision with quays and waterfront structures, collision and grounding experiments, properties of marine-use materials under impact loadings, residual strength of damaged ships and offshore structures, analysis of ultimate strength of ship structures, to human factors in collision and grounding accidents. Developments in the Collision and Grounding of Ships and Offshore is a valuable resource for academics, engineers and professionals involved in these areas.

Safety and Reliability: Methodology and Applications This book presents papers from the First International Conference on Smart Vehicular Technology, Transportation, Communication and Applications (VTCA 2017). Held from 6 to 8 November 2017 in Kaohsiung, Taiwan, the conference was co-sponsored by Springer, Fujian University of Technology in China, Fujian Provincial Key Laboratory of Digital Equipment, Fujian Provincial Key Lab of Big Data Mining and Applications, and National Kaohsiung University of Applied Sciences in Taiwan. The book is a valuable resource for researchers and professionals engaged in all areas of smart vehicular technology, vehicular transportation, vehicular communication, and applications.

Guide Specifications and Commentary for Vessel Collision Design of Highway Bridges, 2nd Edition, with 2010 Interim Revisions Developments in the Collision and Grounding of Ships and Offshore includes the contributions to the 8th International Conference on Collision and Grounding of Ships and Offshore Structures (ICCGS 2019, Lisbon, Portugal, 21-23 October 2019). The series of ICCGS-conferences started in 1996 in San Francisco, USA, and are organised every three years in Europe, Asia and the Americas. Developments in the Collision and Grounding of Ships and Offshore covers a wide range of topics, from the behavior of large passenger vessels in collision and grounding, collision and grounding in arctic conditions including accidental ice impact, stability residual strength and oil outflow of ships after collision or grounding, collision and grounding statistics and predictions and measures of the probability of incidents, risk assessment of collision and grounding, prediction and measures for reduction of collision and grounding, new designs for improvement of structural resistance to collisions, analysis of ultimate strength of ship structures (bulkheads, tank tops, shell etc.), design of buffer bows to reduce collision consequences, design of foreship structures of ferries with doors to avoid water ingress in case of a collision, development of rational rules for the structural design against collision and grounding, innovative navigation systems for safer sea transportation, the role of IMO, classification societies, and other regulatory bodies in developing safer ships, collision between ships and offshore structures, collision between ships and fixed or floating bridges and submerged tunnels, collision with quays and waterfront structures, collision and grounding experiments, properties of marine-use materials under impact loadings, residual strength of damaged ships and offshore structures, analysis of ultimate strength of ship structures, to human factors in collision and grounding accidents. Developments in the Collision and Grounding of Ships and Offshore is a valuable resource for academics, engineers and professionals involved in these areas.

Offshore Risk Assessment The OFNP research group in the Nuclear Science and Engineering Department at MIT is developing a power plant that combines two well-established technologies -- light water reactors and offshore platforms -- into a new design called the Offshore Floating Nuclear Plant (OFNP). Deploying a nuclear reactor aboard a floating platform up to 12 nautical miles into the ocean raises unique security questions and considerations. This investigation presents a framework for analyzing the threat of intentional ship collision, modeling damage and characterizing the effectiveness of potential solutions, as well as integrating or adapting the recommended security strategies into existing regulatory and legal environments. First, a collision risk assessment is completed and a postulated design-basis collision threat (DBT) is determined to be a 150,000 DWT ship. Next, using the DBT characteristics and the finite element modeling software ABAQUS, estimations for damage are provided for a reference
case and for cases with variations in collision characteristics. Results indicate increased ship penetration from faster and larger ships, wedge-shaped ship hulls, fixed OFNP moorings, direct broadside collisions, and OFNP designs with less internal structural support. Additionally, in order to minimize risk of unacceptable damage, the results indicate that vessels larger than 70,000 DWT should be restricted from entering within an eight-nautical mile exclusion zone. The results from the previous assessments are then used to present technical, operational, and regulatory recommendations for damage mitigation. The analysis concludes with an assessment of the existing regulatory and legal environments in which the regulatory solutions would have to be implemented, provides an analysis of the degree to which the ideal regulations comply with existing laws, and then culminates with the presentation of further recommendations and a regulatory strategy framework for meeting security goals while achieving legal compliance. In summary, this investigation considers the threat of intentional collision with an Offshore Floating Nuclear Plant and utilizes risk assessment techniques, numerical modeling, and legal research to contextualize the threat, model possible damage, and present technical, operational, and regulatory solutions for avoiding or mitigating damage.

Developments in the Collision and Grounding of Ships and Offshore Structures

Marine Design XIII, Volume 2 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.

Artificial Intelligence and Big Data Analytics for Smart Healthcare Within the last fifty years the performance requirements for technical objects and systems were supplemented with: customer expectations (quality), abilities to prevent the loss of the object properties in operation time (reliability and maintainability), protection against the effects of undesirable events (safety and security) and the ability to respond to contextual changes.


Advances in Smart Vehicular Technology, Transportation, Communication and Applications 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 ship designs, 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 Guide to the Collision Avoidance Rules The 12th International Conference on Marine Navigation and Safety of Sea Transportation (TransNav 2017) will take place on June 21-23 in Gdynia, Poland. Main themes of this conference include: electronic navigation, route planning, mathematical models, methods and algorithms, ships manoeuvring, navigational risks, Global Navigation Satellite Systems (GNSS), Automatic Identification System (AIS), marine radar, anti-collision, dynamic positioning, visualization of data, hydrometeorological aspects and weather routing, safety at sea, inland navigation, autonomous water transport, communications and global maritime distress and safety system (GMDSS), port ant routes optimum location and magnetic compasses.

Progress in Maritime Technology and Engineering This set of two volumes comprises the collection of the papers presented at the 5th International Conference on Maritime Technology and Engineering (MARTECH 2020) that was held in Lisbon, Portugal, from 16 to 19 November 2020. The Conference has evolved from the series of biennial national conferences in Portugal, which have become an international event, and which reflect the internationalization of the maritime sector and its activities. MARTECH 2020 is the fifth of this new series of biennial conferences. The set comprises 180 contributions that were reviewed by an International Scientific Committee. Volume 1 is dedicated to maritime transportation, ports and maritime traffic, as well as maritime safety and reliability. It further comprises sections dedicated to ship design, cruise ship design, and to the structural aspects of ship design, such as ultimate strength and composites, subsea structures as pipelines, and to ship building and ship repair.
Developments in the Collision and Grounding of Ships and Offshore Structures This book aims to promote the study, research and applications in the design, assessment, prediction, and optimal management of life-cycle performance, safety, reliability, and risk of civil structures and infrastructure systems. The contribution in each chapter presents state-of-the-art as well as emerging applications related to key aspects of the life-cycle civil engineering field. The chapters in this book were originally published as a special issue of Structure and Infrastructure Engineering.

Methods and Algorithms in Navigation Maritime Transport and Regional Sustainability is a critical examination of the developing global connections between maritime transport and regional sustainability. This book provides a comprehensive, holistic examination on how the maritime transport sector helps regions to achieve their sustainability goals, especially focusing on the challenges posed by climate change. It analyzes maritime transport from multiple perspectives, establishing a strong theoretical framework drawn on evidence from both the developed and emerging economies across the globe. It identifies commonalities that contribute to a coherent transport-region relationship, including how maritime operations, planning, and management impact regional governance. Tracing the vital threads linking transport to its regional surroundings, Maritime Transport and Regional Sustainability analyses the major issues and challenges that maritime transport researchers, planners, and policymakers face.

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