Journal of Marine Science and Technology

Official Journal of the Japan Society of Naval Architects and Ocean Engineers (JASNAOE)

Editorial board Aims & scope Journal updates

The Journal of Marine Science and Technology provides a forum for the discussion of current issues in marine science and technology. The range of topics extends from research in naval architecture, marine engineering, and ocean engineering to marine-related research in the fields of environmental science and technology, oceanography, computational mechanics, and information technology.

In addition to original, full-length refereed contributions presenting new research and developments in the field, the journal also publishes review papers authored by leading authorities.

- Presents new research in naval architecture, marine engineering, and ocean engineering
- Covers marine-related research in environmental science and technology, oceanography, computational mechanics, and information technology
- Publishes original research contributions and reviews authored by leading authorities

— show less

Editor-in-Chief

Kazuhiro Aoyama

Publishing model

Hybrid (Transformative Journal). How to publish with us, including Open Access

1.947 (2021)

Impact factor

2.005 (2021)

Five year impact factor

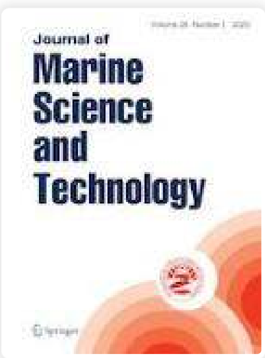
66 days

Submission to first decision (Median)

217,184 (2021)

Downloads

Latest issue



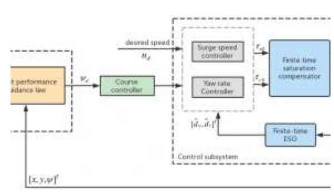
Volume 28

Issue 1, March 2023

View all volumes and issues

Latest articles

State constrained path following of underactuated unmanned surface vehicles subjected to dynamic unknowns and environmental disturbances



Dongdong Mu, Lu Li ... Bowen Liu

Original article | Published: 15 May 2023

[Open Access fees and funding]

[Contact the journal]

Submit manuscript

Working on a manuscript?

Avoid the most common mistakes and prepare your manuscript for journal editors.

[Learn more →]

Explore

[Online first articles]

[Volumes and issues]

Sign up for alerts

About this journal

Electronic ISSN 1437-8213

Print ISSN 0948-4280

Abstracted and indexed in

AGRICOLA
BFI List
Baidu
CLOCKSS
CNKI
CNPIEC
Current Contents/Engineering, Computing and Technology

Dimensions

EBSCO Academic Search

EBSCO Discovery Service

EBSCO Engineering Source

EBSCO MasterFILE

EBSCO STM Source

EI Compendex

Google Scholar

INSPEC

Japanese Science and Technology Agency (JST)

Journal Citation Reports/Science Edition

Naver

Norwegian Register for Scientific Journals and Series

OCLC WorldCat Discovery Service

Portico

ProQuest Aquatic Sciences and Fisheries Abstracts (ASFA)

ProQuest-ExLibris Primo

ProQuest-ExLibris Summon

SCImago

SCOPUS

Science Citation Index Expanded (SCIE)

TD Net Discovery Service

UGC-CARE List (India)

WTI AG

Wanfang

Journal of Marine Science and Technology

Official Journal of the Japan Society of Naval Architects and Ocean Engineers (JASNAOE)

Editors

Arne Fredheim, Trondheim, Norway
Tetsugo Fukuda, Mitaka, Japan
Junji Fukuto, Mitaka, Japan
Koji Goto, Fukuoka, Japan
Akio Imai, Kobe, Japan
Hidetsugu Iwashita, Hiroshima, Japan
Patrick Kaeding, Rostock, Germany
Toru Katayama, Osaka, Japan
Kangsoo Kim, Tokyo, Japan
Mitsuru Kitamura, Hiroshima, Japan
Jason Lavroff, Sandy Bay, Australia
Ye Li, Shanghai, China
Ning Ma, Shanghai, China
Jerzy Matusiak, Espoo, Finland
Motohiko Murai, Yokohama, Japan
Roger Neill, Woodend, Australia
Etsuko Nishimura, Kobe, Japan
Masayoshi Oka, Mitaka, Japan
Malek Pourzanjani, Southampton, UK
Dev Ranmuthugala, Melbourne, Australia
Norimitsu Sakagami, Shimizu, Japan
Hidenori Sekiguchi, Mitaka, Japan
Rajiv Sharma, Chennai, India
Karl Slater, Melbourne, Australia
Abraham Renger Stark, Wageningen, Netherlands
Claudio Testa, Rome, Italy
Yasuyuki Toda, Osaka, Japan
Tomoaki Utsunomiya, Fukuoka, Japan
Francis Valentinis, Bundoora, Australia
Takuji Waseda, Kashiwa, Japan
Baoshan Wu, Wuxi, China
Norio Yamamoto, Chiba, Japan
Hajime Yoshida, Kure, Japan

For authors

Submission guidelines

Language editing services

Ethics & disclosures

Open Access fees and funding

Contact the journal

Submit manuscript

Working on a manuscript?

Journal of Marine Science and Technology

Official Journal of the Japan Society of Naval Architects and Ocean Engineers (JASNAOE)

Aims and scope

The sea is where life is said to have originated. Not only do the earth's oceans provide vital routes of transportation and a rich source of raw materials; they have also remained a challenging frontier and an essential natural habitat whose preservation will be crucial to human survival in the twenty-first century. The efforts of marine scientists and technologists are aimed at the advancement of scientific and engineering knowledge regarding the sea.

The Journal of Marine Science and Technology provides a forum for the discussion of current issues in marine science and technology by publishing original, full-length, refereed contributions on research and/or developments in this field. Review papers by leading authorities are also presented.

The range of topics covered in the Journal of Marine Science and Technology extends from research in the field of naval architecture, marine engineering, and ocean engineering to marine-related research in the field of environmental science and technology, oceanography, computational mechanics, and information technology.

Journal of Marine Science and Technology

Official Journal of the Japan Society of Naval Architects and Ocean Engineers (JASNAOE)

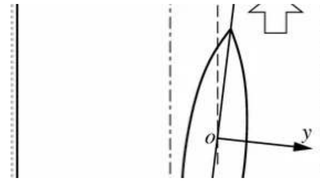
Volume 19, issue 4, December 2014

16 articles in this issue

[Directional stability of a ship in close proximity to channel wall](#)

Masaaki Sano, Hironori Yasukawa & Hiroki Hata

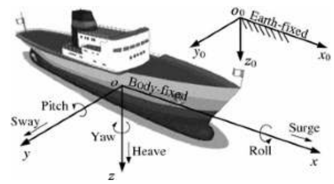
Original article | Published: 29 April 2014 | Pages: 376 - 393



[Sensitivity analysis and parametric identification for ship manoeuvring in 4 degrees of freedom](#)

Xue-Gang Wang, Zao-Jian Zou ... Ru-Yi Ren

Original article | Published: 02 July 2014 | Pages: 394 - 405

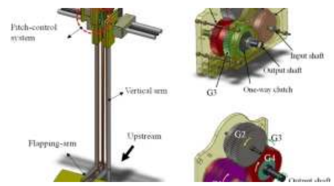


[Nonlinear dynamic model for flapping-type tidal energy harvester](#)

T. Q. Truong, P. E. Sitorus ... T. S. Kang

Original article | Published: 20 August 2014 |

Pages: 406 - 414

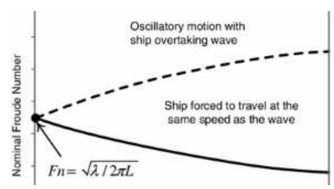


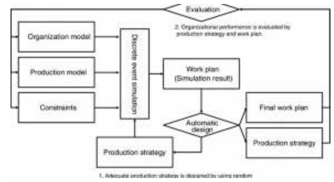
[Analytical methods to predict the surf-riding threshold and the wave-blocking threshold in astern seas](#)

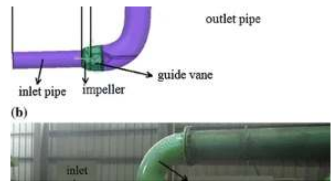
Atsuo Maki, Naoya Umeda ... Tetsushi Ueta

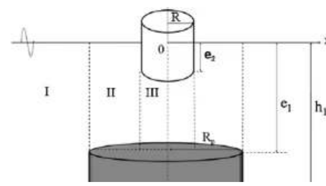
Original article | Published: 27 February 2014 |

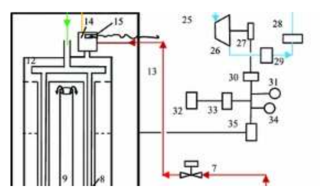
Pages: 415 - 424

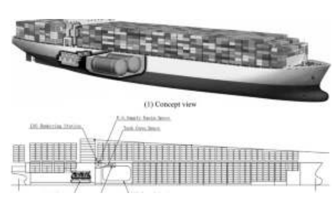



Evaluation
Organization model
Production model
Constraints
Discrete event simulation
Work plan
(Simulation result)
Automatic design
Final work plan
Production strategy
Production strategy


outlet pipe
inlet pipe
impeller
guide vane
(b)
inlet






(1) Concept view

J Mar Sci Technol (2014) 19:351–359
DOI 10.1007/s00773-014-0274-1

ORIGINAL ARTICLE

Optimization of P.E. area division and arrangement based on product mix

Sanghwan Kim · Hyun Chung · Mingyu Kim

Received: 25 December 2012 / Accepted: 1 May 2014 / Published online: 29 May 2014

Abstract The shipbuilding industry in recent times has witnessed a decline in the demand for commercial ships and a sharp increase in the demand for offshore plants. In response to this change in the industry, shipbuilding companies have sought an optimal product mix for producing commercial ships and offshore plants with minimal additional investment in facilities. This study was aimed at optimizing the pre-erection (P.E.) area partition for ship and offshore blocks based on the forecasted product mix of the planning horizon. The offshore P.E. area requires additional investment in facilities because the blocks are usually much heavier than those of ships. For given production schedules, and taking the flexibility of the forecasted change into consideration, we determined the optimal P.E. area partition ratio using the dynamic layout problem methodology. In this study, material handling cost, operating cost, rearrangement cost, and additional P.E. area construction cost were used to determine the optimal division. The optimal division of the P.E. area for offshore plants was then determined for a 10-year planning horizon. The results were applied to a shipyard to evaluate their business feasibility.

Keywords Product mix · Layout · Pre-erection area · DLP (dynamic layout problem) · Optimization · Shipyard

S. Kim
Offshore Outfitting Group 4, Daewoo Shipbuilding & Marine Engineering, Goeje, Korea

H. Chung (✉) · M. Kim
Division of Ocean Systems Engineering, School of Mechanical Aerospace and Systems Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea
e-mail: hyunny92@kaist.edu

1 Introduction

The demand for deep-sea drilling ships has increased in recent times owing to the greater demand for oil and higher oil prices. To fulfill the demand for offshore plants, many studies are being conducted by shipyards to enable the mixed production of ships and offshore plants in the workspace for commercial ships, the demand for which has dropped. Product mix is a production strategy that adds a different product to the production line while minimizing investment in additional facilities. To achieve product mix for commercial ships and offshore plants, various factors such as the block schedule, weight, size, and erection method must first be examined. Figure 1 shows a product mix process for a shipyard. Product mix processes for commercial ships and offshore plants include cutting, fabrication, flat assembly, and curve assembly. However, given the characteristics of commercial ships and offshore plants, the building process is more commonly separated from the pre-erection (P.E.) process. A block is the basic unit in shipbuilding. One method for reducing the assembly time within the building dock involves the formation of a grand block by pre-assembling several blocks and then transferring it to the dock for erection. Whereas the number of grand blocks may differ depending on the shipyard, approximately 10 are used to build a ship [1].

The sizes and weights of the ship blocks and offshore plants are determined by the product development conditions of the company, factory size, and strategic decisions. Since offshore plants are equipped with drilling derricks, external turret mooring systems, and other heavy equipment, an offshore plant block tends to be heavier than the block of a commercial ship. The former is also larger than the latter thus the erection of an offshore plant is done outside a dock and there are less size constraints.

J Mar Sci Technol (2014) 19:479–492
DOI 10.1007/s00773-014-0278-x

ORIGINAL ARTICLE

Parametric bulbous bow design using the cubic Bezier curve and curve-plane intersection method for the minimization of ship resistance in CFD

Deddy Chrismianto · Dong-Joon Kim

Received: 3 April 2013 / Accepted: 6 June 2014 / Published online: 5 July 2014

Abstract Parametric geometric modeling plays an important role in ship's hull form optimization by use of computational fluid dynamic (CFD) analysis. However, it is difficult to create satisfactory parametric modeling for some curved shapes, such as a ship's bulbous bow. In this study, the cubic Bezier curve and curve-plane intersection methods are applied to generate the parametric design of a bulbous bow in a solid modeling procedure by taking into account the input of 4 (four) design parameters. For this, a suitable application program interface script within the ANSYS Design Modeler was developed. An application to the ship resistance minimization by use of CFD was made to show that the proposed method could be implemented properly. In this respect, the parametric design of the bulbous bow of a container ship (KRISO Container Ship type) was chosen to be modified. First, it was shown that the computational results generated by CFD were close to the experimental data for the original ship hull form. The developed optimization method was subsequently applied to find the optimal bulbous bow. Finally, the dependence of the optimum bulbous bow on a ship's speed (some variations of Fn values) was investigated and the results were compared to each other.

D. Chrismianto (✉)
Department of Naval Architecture, Diponegoro University, Semarang, Indonesia
e-mail: deddychrismianto@yahoo.co.id

D.-J. Kim
Department of Naval Architecture and Systems Marine Engineering, Pukyong National University, Busan, South Korea
e-mail: djkim@pknu.ac.kr

Keywords Parametric bulbous bow design · Cubic Bezier curve · Curve-plane intersection method · CFD · Optimization method

1 Introduction

Recently, the relationship between parametric design and ship performance analysis using computational fluid dynamic (CFD) has become a topic of interest, specifically, how to obtain an optimum ship hull form or an optimum bulbous bow form that will ensure a ship's good hydrodynamic performance. There are several methods of parametric design that have been used in ship modeling. The use of the control points of the cubic B spline to generate the parametric of ship hull design as well as the parametric of bulbous bow design has been introduced with successful results [1–5]. Campana et al. [6] has used the Bezier polynomial patches method, in which the shape modification was controlled by a given number of control points that were used as design variables/input parameters for finding an optimum shape in the optimization process. Chen and Huang [7] has used a technique for parameter estimation using the B-spline surface fitting method in the inverse design problem of finding the optimal hull form. In addition, Kang and Lee [8] has implemented the parametric morphing technique to generate hull form rapidly with some variations of the input parameters. Furthermore, Rodriguez and Jambrina [9] has developed a programmed design based on a programming language as a tool for parametric hull form generation. In general, these methods can be used to create the parametric design for surface modeling only. However, some CFD softwares (especially RANSE solver) need a solid modeling in the meshing stage before the CFD analyzing stage can begin. Pecot et al. [10]

J Mar Sci Technol (2014) 19:510–527
DOI 10.1007/s00773-014-0265-2

ORIGINAL ARTICLE

Numerical prediction of the fluctuating noise source of waterjet in full scale

Qiongfang Yang · Yongsheng Wang · Zhihong Zhang

Received: 21 May 2013 / Accepted: 8 March 2014 / Published online: 29 March 2014

Abstract Fluctuating noise sources of the full-scaled waterjet equipped on the transom of a trimaran at 18 kn are analyzed by hybrid method coupling Scale-Adaptive Simulation (SAS) of periodic pulsating pressure on blades with boundary element acoustic models (BEM) for acoustic field. Numerical self-propelled tests of the full-scaled trimaran–waterjet system using $k-\varepsilon$ explicit algebraic Reynolds stress turbulent model (EARSM) with rotation-curvature correction are completed to output the non-uniform inflow into waterjet. The total propulsive efficiency is predicted satisfactorily, and local flow details are reasonably reproduced. Transient simulations of the fluctuating pressure of waterjet pump with non-uniform inflow at self-propelled rotating speed reveal that: pulsating pressure of the monitoring points located at the back of the rotor and before the stator presents the most dominant second blades passing frequency (BPF) line spectrum in frequency domain to reflect the rotor–stator interaction. When 0.95 times of span is used to represent the most heaviest loading section on rotor blades, the averaged pulsating pressure coefficient at BPF per unit chord is far more smaller than that on propeller blades. The acoustic highlights of the sound intensity distribution in the pump are located in the axial region between rotor with stator at BPF and its harmonics. The most-dominated tonal noise at 2BPF is 136.2 dB, and the total sound pressure level over the range of 1 kHz is 148.8 dB with scattering effect of the hull stern involved. Comparing to the propeller with a comparative absorbed power, smaller non-uniformity of inflow and smaller pulsating pressure benefits the waterjet about 16 dB quieter noise.

Keywords Numerical self-propulsion · Waterjet noise · Fluctuating pressure · Full scale

Q. Yang (✉) · Y. Wang
College of Marine Power Engineering, Naval University of Engineering, Wuhan 430033, China
e-mail: yqfhaijun2008@126.com

Z. Zhang
College of Science, Naval University of Engineering, Wuhan 430033, China

Abbreviations

List of symbols

D	Diameter of pump inlet (mm)
G	Sound Green's function
K	Turbulent kinetic energy (m^2/s^2)
K_p	Non-dimensional fluctuated pressure coefficient
n_s	Specific speed of pump
n	Propeller rotating speed (r/s)
$p(r)$	Sound pressure at any position r
P	Braked power (kW)
Q	Volume flow rate (m^3/s)
T	Thrust deduction coefficient
T	Thrust of the waterjet (N)
v_s	Uniform incoming velocity, ship speed (m/s)
y^+	Dimensionless normal distance from the wall

Greek symbols

α_v	Air volume fraction
μ_t	Turbulent viscosity
ω	Turbulent vortex frequency
Ω	Vorticity tensor, second invariant of velocity gradient
σ	Sinkage coefficient
τ	Retarded time, flow time-scale
δ	Trim coefficient
ζ	Flow non-uniform level

Journal of Marine Science and Technology

COUNTRY

Japan

Universities and research institutions in Japan

Media Ranking in Japan

SUBJECT AREA AND CATEGORY

Earth and Planetary Sciences
- Oceanography

Engineering
- Mechanical Engineering
- Mechanics of Materials
- Ocean Engineering

PUBLISHER

Springer Japan

H-INDEX

54

PUBLICATION TYPE

Journals

ISSN

09484280, 14378213

COVERAGE

1995-2022

INFORMATION

Homepage

How to publish in this journal

SCOPE

The sea is where life is said to have originated. Not only do the earth's oceans provide vital routes of transportation and a rich source of raw materials; they have also remained a challenging frontier and an essential natural habitat whose preservation will be crucial to human survival in the twenty-first century. The efforts of marine scientists and technologists are aimed at the advancement of scientific and engineering knowledge regarding the sea. The Journal of Marine Science and Technology provides a forum for the discussion of current issues in marine science and technology by publishing original, full-length, refereed contributions on research and/or developments in this field. Review papers by leading authorities are also presented. The range of topics covered in the Journal of Marine Science and Technology extends from research in the field of naval architecture, marine engineering, and ocean engineering to marine-related research in the field of environmental science and technology, oceanography, computational mechanics, and information technology.

Quartiles

FIND SIMILAR JOURNALS

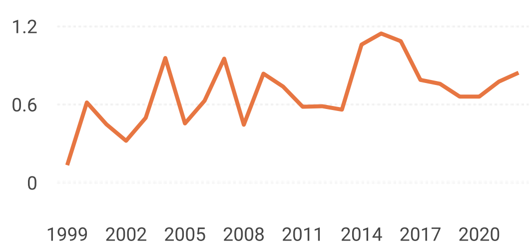
1
Ocean Engineering
GBR
85%
similarity

2
Journal of Marine Science and Application
CHN
79%
similarity

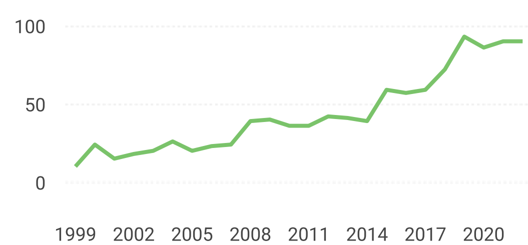
3
China Ocean Engineering
USA
78%
similarity

4
International Jou Architecture and
KOR
78
simila

SJR

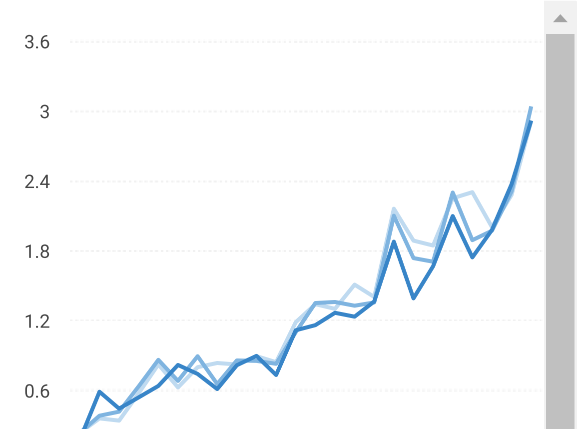


Total Documents

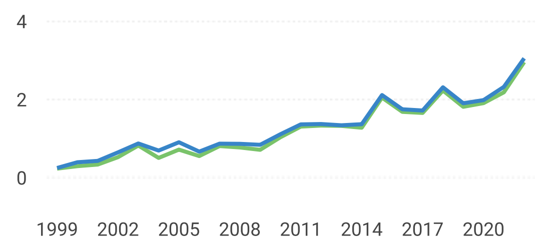


Total Cites Self-Cites

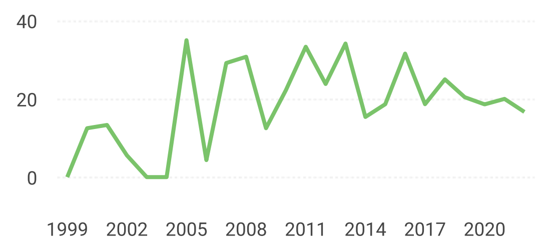
Citations per document



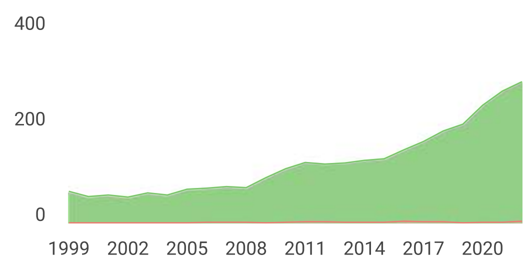
External Cites per Doc Cites per Doc



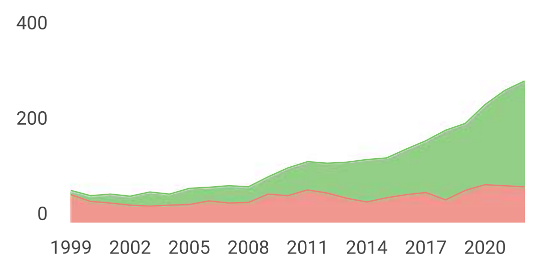
% International Collaboration



Citable documents Non-citable documents



Cited documents Uncited documents



← Show this widget in your own website

Just copy the code below and paste within your html code:

<a href="https://www.scimag

SCImago Graphica

Explore, visually communicate and make sense of data with our **new data visualization tool**.