



PRADS 2022 PROGRAMME

15th International Symposium on Practical
Design of Ships and Other Floating Structures

09 - 13 OCTOBER 2022 - DUBROVNIK - CROATIA



FSB



**BUREAU
VERITAS**

**15th International Symposium on Practical Design of Ships and
Other Floating Structures (PRADS 2022) - Programme**

Editors:

Nikola Vladimir

Šime Malenica

Ivo Senjanović

Technical Editor & Design:

Gordana Radaković, Creayon Studio

Publisher:

Faculty of Mechanical Engineering and Naval Architecture,

University of Zagreb

Zagreb, Croatia

Organizers:

Faculty of Mechanical Engineering and Naval Architecture,

University of Zagreb

Zagreb, Croatia

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Bureau Veritas

Paris, France

Printed by:

Promeritum d.o.o.

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15th International Symposium on Practical Design of Ships and Other Floating Structures

PRADS 2022

Programme



Under the auspices of
the Croatian Academy of Sciences and Arts
Department of Technical Sciences

Organizers:



FSB

Faculty of Mechanical Engineering and Naval Architecture,
University of Zagreb
Zagreb, Croatia



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PRADS 2022 CONFERENCE SECRETARIAT

University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture
Department of Naval Architecture and Ocean Engineering
Ivana Lučića 5, 10002 Zagreb, Croatia
Tel: +385 1 61 68 114
Email: prads2022@fsb.hr
<https://prads2022.fsb.hr/>

GENERAL SCHEDULE

9 Oct 2022	WELCOME RECEPTION
10 Oct 2022	OPENING CEREMONY
	Nikola Vladimir University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture, Zagreb, Croatia
	Šime Malenica Bureau Veritas, Paris, France
	PLENARY LECTURES TECHNICAL SESSIONS
11 Oct 2022	TECHNICAL SESSIONS SC MEETING
12 Oct 2022	TECHNICAL SESSIONS CONFERENCE DINNER
13 Oct 2022	TECHNICAL SESSIONS GUIDED CITY TOUR

CONFERENCE DINNER

Dinner is taking place at **Sunset Beach Dubrovnik Restaurant** Šetalište kralja Zvonimira 17, 20000, Dubrovnik, Croatia
The Sunset Beach Dubrovnik is a restaurant at a walking distance (10-15 minutes) from the conference venue.

CONFERENCE VENUE & TRAVEL INFO

PRADS 2022 is being held in Hotel Dubrovnik Palace, Dubrovnik Croatia.

<https://www.adriaticluxuryhotels.com/hoteldubrovnik-palace/>

If you are arriving by airplane, you are going to arrive to **Dubrovnik Airport**. A taxi service is available during the operating hours of the airport directly taking you to the venue for about 40.00 EUR. Cheaper transfers by shuttle or bus are also available. **Dubrovnik airport shuttle** which runs to and from Dubrovnik will take you from Dubrovnik Airport and make stop at the Pile Gate bus stop - about 5 EUR. There you can take the **bus No. 4 (Pile - Hotel Palace)** which will take you directly to the venue (last stop) - about 2 EUR. The bus is departing every 15 minutes.

The currency of Croatia is currently the Croatian Kuna (HRK), with approximate exchange rate: 1.00 EUR = 7.5345 HRK.

SUNDAY, 09 OCTOBER 2022

MONDAY, 10 OCTOBER 2022

TUESDAY, 11 OCTOBER 2022

17:30 – 19:00	REGISTRATION	08:00 – Onwards	REGISTRATION		
19:00 – 20:00	WELCOME RECEPTION	08:30 – 08:40	OPENING CEREMONY Mare I		
		08:40 – 09:00	Mare I I. Senjanović, N. Hadžić: Croatian Shipbuilding - Past, Current Situation & Perspectives	08:30 – Onwards	REGISTRATION
		09:00 – 09:45	PLENARY LECTURE 1 Mare I O.M. Faltinsen: Slamming Load Effects on Ships and Marine Structures	09:00 – 09:45	PLENARY LECTURE 3 - MARE I J.J. Jensen: Extreme Value Predictions and Critical Wave Episodes for Marine Structures
		09:45 – 10:30	PLENARY LECTURE 2 Mare I M. Perić: The Role of CFD in Ship Design and Optimization	09:45 – 10:30	PLENARY LECTURE 4 - MARE I Q. Derbanne: Brief History of Rule Loads and Longitudinal Strength of Ships
		10:30 – 11:00	Coffee break	10:30 – 11:00	Coffee break
		11:00 – 12:40	TECHNICAL SESSIONS	11:00 – 12:40	TECHNICAL SESSIONS
		12:40 – 14:10	Lunch	12:40 – 14:10	Lunch
		14:10 – 15:50	TECHNICAL SESSIONS	14:10 – 15:50	TECHNICAL SESSIONS
		15:50 – 16:20	Coffee break	15:50 – 16:20	Coffee break
		16:20 – 18:00	TECHNICAL SESSIONS	16:20 – 18:00	TECHNICAL SESSIONS
				18:10 – 18:20	GROUP PHOTO
				18:30 – 20:00	STANDING COMMITTEE MEETING

WEDNESDAY, 12 OCTOBER 2022

THURSDAY, 13 OCTOBER 2022

08:30 -
Onwards REGISTRATION

08:30 -
Onwards REGISTRATION

09:00 -
10:40 TECHNICAL SESSIONS

09:00 -
10:40 TECHNICAL SESSIONS

10:40 -
11:10 Coffee break

10:40 -
11:10 Coffee break

11:10 -
12:50 TECHNICAL SESSIONS

11:10 -
12:50 TECHNICAL SESSIONS

12:50 -
14:20 Lunch

12:50 -
14:20 Lunch

14:20 -
16:00 TECHNICAL SESSIONS

14:20 -
16:00 TECHNICAL SESSIONS

19:30 -
Onwards CONFERENCE DINNER

16:00 -
18:00 GUIDED CITY TOUR

08:00 - Onwards	REGISTRATION			
08:30 - 08:40	OPENING CEREMONY Mare I			
08:40 - 09:00	Mare I I. Senjanović, N. Hadžić: Croatian Shipbuilding - Past, Current Situation & Perspectives			
09:00 - 09:45	PLENARY LECTURE 1 / Mare I O.M. Faltinsen: Slamming Load Effects on Ships and Marine Structures			
09:45 - 10:30	PLENARY LECTURE 2 / Mare I M. Perić: The Role of CFD in Ship Design and Optimization			
10:30 - 11:00	Coffee break			
11:00 - 12:40	01. TECHNICAL SESSIONS Dubrava I Chair: Yan Xing-Kaeding CFD T. Katayama, K. Yamaguchi, T. Nanami, J. Umeda, S. Ozeki, M. Soga, T. Watanabe: Calculation of Hydrodynamics Forces acting on Prismatic Planing Surface by CFD S.H. Lee, K.J. Paik, J.H. Cho, G.H. Kim, H.S. Kim: A study on the Added Resistance Performance in Various Regular Waves and Irregular Waves using URANS Solver L. Perez-Rojas, A. Portillo-Juan: Study of the Propeller Effect on the Sinkage of Ships Y.J. Kim, D.H. Kim: Study of Wind Resistance Reducing Methods for Commercial Vessels	02. TECHNICAL SESSIONS Mare II Chair: Kwang Jun Paik Design I O.T. Gudmestad: Modern Ship Design J. le Poole, N. Charisi, K. Droste, A. Habben Jansen, A.A. Kana: The Design Knowledge Management Square - a Framework for Early Stage Complex Ship Design J. Ha, M.I. Roh, K.S. Kim, M.C. Kong: Integrated Method for the Arrangement Design of a Ship for Implementing Digital Twin in Design I. Bačkalov, M. Kalajdžić, N. Momčilović, S. Rudaković, M. Vidić: Shallow-Draught Vessels for the Vessel Train	03. TECHNICAL SESSIONS Mare III Chair: Patrick Kaeding Structures, Structural analysis I M. Deul, P. van Lieshout, N. Werter: On the Validity of using Small-Scale Fatigue Data to Design Full-Scale Steel Welded Structures: Testing Assumptions on Residual Stress Relief L.N.B. Zacharias, M.I.L. de Souza, J.P. Pasqualino, P.W. dos Reis: Buckling Analysis of FPSO Panel under Pitting Corrosion M. Yamada, T. Okada, Y. Naruse, Y.Kawamura, G. Hayakawa, K. Ishibashi, H. Koyama: Influence of Plate Aspect Ratio on the Axial Load Effect on the Plate Strength against Lateral Pressure T. Zheng, N.Z. Chen: Identification and Fatigue Life Prediction for Critical Blade Root Bolts of a Floating Offshore Wind Turbine (FOWT)	04. TECHNICAL SESSIONS Mare IV Chair: Quentin Derbanne Meteocean U.D. Nielsen, A. Ikonomakis, J. Dietz: Sea States Encountered by Ships in the Maersk Fleet - An Assessment based on Reanalysis data (ERA5) G. de Hauteclouque, M. Lasbleis: Extreme Seastate Parametrization and its Consequences on Ship Responses W. Fujimoto, T. Fukui: Modelling Storm Avoidance Behaviour based on AIS Data of Container Ships in the North Atlantic Ocean Y.H. Kim, S.K. Cho, H.J. Kang: Development of Practical Sea State Now-casting System with Optical Images using Machine Learning
12:40 - 14:10	Lunch			

14:10 – 15:50	05. TECHNICAL SESSIONS Dubrava I	06. TECHNICAL SESSIONS Mare II	07. TECHNICAL SESSIONS Mare III	08. TECHNICAL SESSIONS Mare IV
	Chair: Odd Magnus Faltinsen Maneuvering I	Chair: Ove Tobias Gudmestad Design II	Chair: Tetsuo Okada Structures, Structural analysis II	Chair: Jørgen Juncher Jensen Monitoring
	R. Suzuki, Y. Tsukada, M. Ueno: Effects of Steady Wave Forces for Oblique Motion on Estimation of Manoeuvres of Full-Scale Ships D. Rabliås, T. Kristiansen, R. Skejic: Sensitivity Study of Wave Height Variation during Turning Circles in Regular Waves T. Ohmori, K. Ohashi: Numerical Study to Improve the Estimation of Manoeuvring Fluid Force for a Container Ship in Deep and Restricted Water M. Kuroda, S. Yokota, M. Tsujimoto, R. Fukasawa: Effect of Hydrodynamic Forces due to Drift Motion on Ship performance in Actual Seas at Low Speed	C. Veldhuis, A. Grasman, J. Willemsen, U. Shipurkar: Systematic Design of Future Marine Power & Energy Systems R. Gafter, N. Drimer: A Feasibility Study of a New Concept of VLFS H.J. Son, J.S. Kim, Y.C. Lee, H.J. Kim: On Prediction of Drillship Transit Speed under Various Propulsion Modes and Optimization of Power Distribution for Bow and Stern Thrusters Y.C. Hung, H.J. Tang, C.T. Lee, R.Y. Yang: Feasibility Study on Different Layouts of Power Cable for Floating Offshore Substation	J. Andrić, B. Haraminić, M. Tomičić, P. Přebeg: Influence of Large Shell Openings Geometry in Ship Superstructure on Stress Concentration Reduction T. Lindemann, P. Kaeding, A. La Ferlita, N. Schenk, D. Aleksashin: Determination of Ultimate Strength for a Bulk Carrier under Combined Loads G. Jagite, D. Coache, Š. Malenica: On the Modeling of the Nonlinear Dynamic Response of Composite Wind Turbine Blades J.C. Petiteau, S. Paboef: Fatigue Assessment of Composites Parts for Marine Renewable Energy Converters	R. Hageman, I. Drummen, I. Thompson, K. Stambaugh: Fleet Structural Integrity through Monitoring and Data Fusion K. Toh, Y. Kurisaki, S. Hirakawa, Y. Kawajiri, K. Furukawa, H. Murayama, D. Yanagihara: Fundamental Investigation on Measuring Procedure of Ship Motion and Hull Girder Deformation by Using Global Navigation Satellite System R. Miratsu, W. Fujimoto, T. Fukui, H. Ochi: Evaluation of Ship Motions and Hull Structural Strength for Container Ships based on AIS Data and Wave Hindcast S. Ivosevic, N. Kovac, G. Vastag: The Analysis of the Corrosion-Induced Failures of the Inner Bottom Plating of Fuel Oil Tanks
15:50 – 16:20	Coffee break			
16:20 – 18:00	09. TECHNICAL SESSIONS Dubrava I	10. TECHNICAL SESSIONS Mare II	11. TECHNICAL SESSIONS Mare III	12. TECHNICAL SESSIONS Mare IV
	Chair: Hyeon Kyu Yoon Maneuvering II	Chair: Kazuhiro Aoyama Design III	Chair: Ilson Pasqualino Structures, Structural analysis III	Chair: Joonmo Choung Risk Assessment
	S. Bielicki: Modified MMG Mathematical Model for Manoeuvring Simulations of Ships driven by Azimuth Thrusters P. Krata, T. Hinz, S.A. Dugan, M. Marley, J. Montewka: Prediction and Evaluation of an Angle of Heel due to Turning Maneuver of Small Training Ships: Comparison of Dynamic Analysis and Static Design Criteria X. Mao, X. Zhan: Course-keeping Ability and Minimum Propulsion Power Assessment in Adverse Weather Conditions Using a Manoeuvring-Seakeeping Unified Model R. Skejčić, O.M. Faltinsen: Maneuvering of Submarines at Periscope Depths in a Seaway	J. Van Houten, D. Singer, M.D. Collette: Balancing Designer Influence with Rework for Design Paths of a Simple Polynomial Model T. Takami, U.D. Nielsen, J.J. Jensen: Application of Prolate Spheroidal Wave Functions for Assessment and Prediction of Ship Responses E. Scheffers, P. de Vos: An Improved Approach for On-Board Distribution System Robustness Estimation in Early-Stage Ship Design I. Gypa, M. Jansson, R. Gustafsson, S. Werner, R. Benschow: Propeller Design Procedure for a Wind-Assisted KVLCC2	Š. Malenica, T. Novaes, J. de Lauzon, F. Bigot, I. Senjanović, N. Vladimir, B.K. Choi: Accounting for the Nonlinearities of Tank Supports in Structural Assessment of the Vessels Equipped with Independent Tanks M. Radon, S. Küster: Comparative Global Strength Assessment Study for Mega Yachts D. Dessi, F. Passacantilli: Application of Modal Strain Energy Analysis to Damage Identification in Marine Structures J. Yang, B.S. Jang: The Hull Structural Response Prediction Method using Distortion Base Mode for Various Loading Conditions of Container Ship	K.S. Kim, M.I. Roh, S.H. Ham, S. Ha: Evacuation Analysis of Passenger Ships Considering Intermediate Flooding Y. Yanagi: Grounding Accident Analysis Using Classified Factors S. Ahmed, T. Li, S. Huang: An Integrated FMECA Study of Cruise Ship Propulsion Module Shafting System using Interval Type-2 Fuzzy Expert System Á. Marrero, F. Rodero: Application of a Risk Analysis based on Historical Data to Prevent Cargo Ignition on Ro-Ro, Ro-Pax and Car-Carrier Ships

08:30 - Onwards	REGISTRATION		
09:00 - 09:45	PLENARY LECTURE 3 - MARE I J.J. Jensen: Extreme Value Predictions and Critical Wave Episodes for Marine Structures		
09:45 - 10:30	PLENARY LECTURE 4 - MARE I Q. Derbanne: Brief History of Rule Loads and Longitudinal Strength of Ships		
10:30 - 11:00	Coffee break		
11:00 - 12:40	<p>13. TECHNICAL SESSIONS Mare II</p> <p>Chair: Pierre Ferrant Seakeeping I</p> <p>.....</p> <p>X.B. Chen, M.Q. Nguyen, I. Ten, C. Ouled Housseine, Y.M. Choi, L. Diebold, S. Malenica, G. De-Hauteclocque, Q. Derbanne: New Seakeeping Computations based on Potential Flows Linearised over the Ship-Shaped Stream</p> <p>A. Olmez, F. Cakici, P. Sahoo: Validation of Strip Theory Based Frequency-Domain Ship Motion Code</p> <p>D.J. Jung, S.H. Kim: Study of Submarine Seakeeping Performance at Free Surface Condition in Regular Waves</p> <p>A.K. Banik, M.R. Teja, S. Roy: Hydrodynamic Performance of Single and Double-Row Floating Breakwaters</p>	<p>14. TECHNICAL SESSIONS Mare III</p> <p>Chair: Ioannis Chatjigeorgiou Design IV</p> <p>.....</p> <p>B. Sulkowski, A. Magistro, J. Van Houten, M.D. Collette: Long-Term Voyage Decision Making for Crewless Platforms</p> <p>S. Jung, S. Ha, J. Cha, J. Lee, S. Kang, P.A. Rahmanto: Configuration of Small Unmanned Surface Vessel Prototype with Autonomous Navigation</p> <p>N.P. Ventikos, A. Koimtzoglou, V. Podimatas, A. Rammos, E. Trifonopoulos: Initial Design Elements for the Development of a Testbed for Safety Analysis of MASS</p> <p>T. Kuroda: Evaluation and Countermeasures for Excessive Acceleration at the Bridge Caused by the Ship Stability</p>	<p>15. TECHNICAL SESSIONS Mare IV</p> <p>Chair: Jani Romanoff Structures, Structural analysis IV</p> <p>.....</p> <p>A. Tatsumi, Y. Kageyama, M. Fujikubo: Development of Bayesian Statistical Model of Welding Initial Deflection and Ultimate Strength Assessment of Plates under In-Plane Compression</p> <p>T. Miyashita, K. Mikami, M. Kobayashi, Y. Komoriyama, C. Ma, K. Toh, H. Murayama: Deformation Estimation of Container Ship in Waves by Inverse Finite Element Method</p> <p>J. Choung, D.H. Yoon: Structural Damage Assessment of an Icebreaker due to Collision with a Small-Sized Iceberg Considering Hydrodynamic Forces</p> <p>J.P. Pineau, E. Lerondel, P. De Champs, T. Looten, F. Conti, H. Le Sourné: Ship Side Grounding Parametric Analysis based on a Super-Element Approach</p>
12:40 - 14:10	Lunch		

14:10 – 15:50	16. TECHNICAL SESSIONS Mare II Chair: Xiaobo Chen Seakeeping II <hr/> E.H. Min, H.J. Jeong, W.J. Seong, J.B. Kim, W.C. Koo: Comparison of Wave Loads and Free Surface Displacements According to Free Surface Update Numerical Schemes T.T.D. Nguyen, H.T. Vu, H.K. Yoon: Study of the Effect of Ship's Principal Dimension on Seakeeping Performance of Fishing Trawler in Bering Sea T. Petranović, I. Gledić, A. Mikulić, J. Parunov: Frequency Independent Model Error of Closed-Form Expressions for Calculating Wave-Induced Ship Motions in Vertical Plane M. Zu, K. Garma, A. Rosén, N. Costa: Specifying Seakeeping Criteria for Efficient Task Performance	17. TECHNICAL SESSIONS Mare III Chair: Jerolim Andrić Design V <hr/> J. Heiskari, J. Romanoff, A. Laakso, J.W. Ringsberg: Thickness Optimization of Insulating Glass unit in Cruise Ships T.L. Mai, M. Jeon, A.K. Vo, H.K. Yoon: Establishment of Empirical Formulae for the Hydrodynamic Derivatives of Submarine considering Design Parameters W. Cai, X. Zhang, M. Hu, Z. Chen, X. Tan, T. Zhang: Intelligent Layout of the Accessible Cabin of Cruise Ships D.J. Kim, H. Ahn, D.J. Yeo: Estimation of Calm Water Powering and Manoeuvring Performance of ONR Tumblehome based on Towing Tank Tests	18. TECHNICAL SESSIONS Mare IV Chair: Daniele Dessi Systems, Process & Operations <hr/> L. Huang, W. Hetharia, A. Grech La Rosa, S. Riyadi, D. Setyawan, I.K.A.P. Utama, G. Thomas: Computational Study on the Potential Transmission of COVID-19 Virus on an Indonesian Fishing Vessel Y. Kim, K. Lee, L. (Y.O.) Kim, Y. Han, H.B. Yeo: A Study on the Application of Augmented Reality-Based Remote Maintenance System using MWP Database V. Ložar, N. Hadžić, T. Opetuk, R. Keser: Efficient Algorithms for Evaluation of the Steel Hull Process L. Braidotti, J. Prpić-Oršić, M. Valčić: Free-Outflow Modelling in the Linearised Progressive Flooding Simulation Methodology
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15:50 – 16:20 **Coffee break**

16:20 – 18:00	19. TECHNICAL SESSIONS Mare II Chair: Keun Woo Shin Hull form optimization <hr/> B. Kossmann, O.B. el Moctar: Design and Optimization of a Pusher Boat Barge Unit under Shallow Water Conditions Y. Xing-Kaeding, A. Papanikolaou, A. Kanellopoulou, G. Dafermos, G. Zaraphonitis: Hydrodynamic Studies on a Zero Emission Battery-Driven Fast-Ferry Y. Wei, W. Zhao, D.C. Wan: Parallel Efficient Global Optimization Algorithm for Ship Hull Form Optimization Z. Liu, W. Zhao, D.C. Wan: Fitting Body Deformation Method for Global and Local Deformation of Ship	20. TECHNICAL SESSIONS Mare III Chair: Ulrik Dam Nielsen Performance analysis <hr/> Y. Cho, K.H. Jeon, S.B. Lee, I. Lee: Prediction of the Ship Performance using Dynamic Model (Multi-Input / Single-Output, MISO) based on Ship Operation Data T. Katayama, M. Kinugasa, M. Namba: Development of Acceleration Simulation from Rest of Planing Craft with Outboard Engine by using Time History Input Data of Engine Torque J.H. Lee, B. Kim, Y.H. Kim: On Estimating Speed Performance of Ships in Irregular Head Seas: Comparison between Two different Schemes H.A. Tveite, B. Guo, C. Agrell, C. Ferreira, S. Eldevik, M. Schmidt, G. Storhaug: Uncertainty Analysis on Vessel Technical Index for Technical Ship Performance	21. TECHNICAL SESSIONS Mare IV Chair: Maciej Radon Construction & Design <hr/> D.H. Chun, M.I. Roh, H.W. Lee: A Method for Automatic Control of Cranes for Block Lifting in Shipyard S.Y. Kang, S. Ha, J.H. Cha, P.T. Laras, J.H. Lee, H.J. Kim, D.H. Jang, K.P. Park: Shape Recognition for Automation of Grinding Operation in the Shipyard E. Holzerbauer, T. Modaleck, D. Pejković, I. Čutić: Innovative Waste Management System for Ships H.J. Kang, K.K. Lee, D. Lee, Y.S. Kim: Real Ship Implementation of Buoyancy Support System for Damaged Ships
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18:10 – 18:20 **GROUP PHOTO**

18:30 – 20:00 **STANDING COMMITTEE MEETING**

08:30 -
Onwards REGISTRATION

09:00 - 22. TECHNICAL SESSIONS
10:40 Mare II

Chair: Hideaki Murayama
Model tests I

H.J. Tang, R.Y. Yang, H.C. Yao:
**Flume Experiment of Mooring
Line Failure on a Net Cage under
Irregular Waves and Currents**

K.H. Jung, S.B. Park, H. Park, A.H. Mohamed,
Hyun Soo Kim:
**Hydrodynamic Characteristics
of Rectangular Structure in
Various Water Depth**

Y. Kitagawa, Y. Tsukada, K. Ohashi:
**On Measurement of Hydrodynamic
Pressures on Hull and Rudder Surface
in Free-running Model Test**

J. Lee, S. Hwang, Y.Y. Lee, S.M. Yoo:
**Towing-tank Measurement of Added
Resistance of a Tanker in Regular Head
Waves under Off-design Conditions**

23. TECHNICAL SESSIONS
Mare III

Chair: Matthew Collette
**Artificial intelligence,
Machine learning I**

J. Lee, D.W. Park:
**Multi-Parametric Hull Form
Design Based on Optimization
Technique and AI**

C. Gui, Z. Zhou, Y. Huang, N. Kiji,
M. Sadano, K. Aoyama:
**Data-Driven Multi-Agent
Simulation of Subassembly
Production at Shipyard**

M.C. Kong, M.I. Roh, J. Ha, E.S. Jin,
D. Yu:
**Design of the Integrated System
for the Safe Operation Based
on Augmented Reality**

M.K. Lee, I. Lee:
**An Optimization Study for the
Design of Flow Control Fin
using Artificial Intelligence**

24. TECHNICAL SESSIONS
Mare IV

Chair: Kanghyun Song
Energy efficiency I

B. van Veldhuizen, L. van Biert, C. Visser,
H. Hopman:
**Comparative Analysis of Alternative
Fuels for Marine SOFC Systems**

F. Xing, K. Pazouki, A.J. Murphy,
R. Norman:
**A Comparison of NOx Mitigating
Technologies for Ships using Fleet-Wide
Continuous Emissions Monitoring**

E. Yfantis, C. Ioannou, A. Paradeisiotis, G.
Mallouppas, A. Ktoris:
**Comparative Investigation of
Different Methodologies for the
Assessment of Shipping Transportation
Environmental impact - The CMMI
ISEF Emission Assessment Model**

A. Dell'Acqua, R. Eggers, J. Benedictus:
**Alternative Ship Propulsion System
fuelled by Ammonia: Environmental,
Feasibility and Economic Assessment
for a NewcastleMax Bulk Carrier**

10:40 -
11:10 Coffee break

11:10 - 25. TECHNICAL SESSIONS
12:50 Mare II

Chair: Bastiaan Buchner
Model tests II

C. Pouw, B. Starke:
**Numerical Calculation and Evaluation
of Extrapolation Coefficients as
used in Speed-Power Predictions
based on Model Tests**

R. Kolodziej:
**Impact of Ship's Metacentric
Height on the Prediction of IMO
Standard Maneuvers with the
use of Free Running Models**

S. Kim, B. Bouscasse; G. Ducrozet,
S. Delacroix, G. de Hauteclocque,
P. Ferrant:
**Experimental Investigation on Wave-
Induced Bending Moments of a 6,750-TEU
Containership in Oblique Waves**

K. Mikami, H. Houtani, M. Kobayashi,
K. Toh, H. Murayama, H. Suzuki:
**Measurement of Deflection Distribution
of Elastic Container Ship Model Using
Stereo Imaging and Fiber-Optic Sensors**

26. TECHNICAL SESSIONS
Mare III

Chair: Hee Jin Kang
**Artificial intelligence,
Machine learning II**

H.Y. Son, G.Y. Kim, S.J. Oh, J. Choi,
D.K. Lee, Y.M. Choi, E.S. Kim,
S.C. Shin:
**BiLSTM-based Time to Capsize
Prediction using Damaged
Ship Motion Data**

D. Jeon, G.Y. Kim, C. Lim, S.C. Shin:
**Minimization of Shift for Container
Stowage Planning based on
Reinforcement Learning**

L. (Y.O.) Kim, K.H. Lee, Y. Kim, H.B.
Yeo:
**Necessity of Advanced
Integrated Digital Engineering
& Management (AIDEM) Tools**

G.Y. Kim, G.S. Jin, S.J. Oh, C. Lim,
S. Lee, M. Seong, S.C. Shin:
**Deep Neural Networks with
Ensemble Model for HVAC
Capacity Estimation of Ship**

27. TECHNICAL SESSIONS
Mare IV

Chair: Keunjae Kim
Energy efficiency II

J. Barreiro Montes, P. Ballester Falcon,
S. Zaragoza Fernández, V. Diaz Casas:
Energy Efficiency of Ships

Y. Zhou, K. Pazouki, A.J. Murphy,
Z. Uriondo, I. Granado, I. Quincoces,
J. A. Fernandes-Salvador:
**Modelling Tuna Purse Seiners Fuel
Efficiency in Real-World Operations
using Machine Learning Approaches**

N. Vladimír, M. Koričan, H. Kozmar,
V. Slapničar, A. Fan:
**A Simplified Formulation of the Energy
Efficiency Index for Purse Seiners**

N. Vladimír, M. Koričan, N. Alujević,
V. Slapničar, T. Haramina, A. Fan:
**Real Time Fuel Consumption
Measurements of a Fleet of Fishing
Vessels in the Adriatic Sea**

12:50 - 14:20	Lunch		
14:20 - 16:00	28. TECHNICAL SESSIONS Mare II Chair: Milovan Perić Propulsion I <hr/> K.W. Shin, W. Jin, R.M. Bering: CFD Prediction of Cavitation on a Full-scale Marine Propeller in Hull Wake S. Hamzeh, M.R. Hadavi, H. Rostami, S. Nickabadi, E. Rostami: Numerical Investigation of Effect of Replacement Stator with Secondary Rotor in a Water-Jet Propulsion System M. Reichel, H. Prusko, K. Czernski, M. Necel: Innovative Twin-CRP-POD Propulsion System for Ultra Large Container Ships - Challenges and Opportunities Y.J. Hyun, S. Sung, K.J. Paik, J. Park, S.H. Lee, J. Park: Proposal for a Method to Reduce Propeller Vibration through Harmonic Injection of Moitor	29. TECHNICAL SESSIONS Mare III Chair: Przemyslaw Krata Artificial intelligence, Machine learning III <hr/> J.H. Kim, M.J. Roh, I.C. Yeo, K.S. Kim, M.J. Oh, S. Oh: Estimation Model of Hydrodynamic Performance Using Hull Form Variation and Deep Learning S.H. Byun, K. Sim: On Dimension Reduction of Vibration data for Condition Monitoring of Marine Engines W. Yunlong, M. Jie, Z. Yu, Z. Xin: Research on Ship Parts Layout Problem Based on Hybrid Improved Genetic Simulated Annealing Algorithm L. van Rooij, R. de Winter, A.V. Kononova, B. van Stein: Explainable AI for Ship Design Analysis with AIS and Static Ship Data	30. TECHNICAL SESSIONS Mare IV Chair: Alan J Murphy Energy efficiency III <hr/> K. Kim, M. Leer-Andersen, S. Werner: Towards an Effective Ship Design and Operation taking into Account Surface Roughness R. Eggers, A. Dell'Acqua, J. van den Akker, J. Wisse: Exploration of Wind Propulsion: Performance and Economical Assessment for a NewcastleMax Bulk Carrier J.H. Lee, H. Kim, J.H. Jang, H.S. Ahn, D.W. Seo: Study on the Speed Trial of a Large Container Ship during a Commercial Voyage C. Emmersberger, B. Carstensen, A. Lübcke, S. Krüger: A Method for Dimensioning Hybrid Power Supply Systems of Ships within the Early Design Stage
19:30 - Onwards	CONFERENCE DINNER		

08:30 -
Onwards

REGISTRATION

09:00 - 10:40

31. TECHNICAL SESSIONS

Mare II

Chair: Inwon Lee
Propulsion II

J.H. Kim, B.K. Ahn, T.G. Lee,
K.S. Lee:
**Numerical Prediction of
Face Cavitation on the
Marine Propeller**

K.G. Varghese, A. Bhattacharyya,
O.P. Sha:
**Marine Tandem Propellers:
Some Design Aspects**

R. Kant, A. Bhattacharyya, M.A.
Siddiqui, O.P. Sha:
**Oscillating Foil Propulsors with
Leading-Edge Modifications**

H. Vollset Lien, M. Nataletti, K.
Henning Halse:
**Model tests at different scales for
NTNU research vessel Gunnerus**

L. Vishnevskii, A. Togunjac:
**The Using of Multi-Mode
Variable Pitch Propeller on
Various Purpose Vessels**

32. TECHNICAL SESSIONS

Mare III

Chair: Bram Starke
Offshore Wind

G. Wang, P. Xujie, Z. Zhou, Z. Fang,
R. Dou, G. Dong, L. Su, W. Chen:
**Some Challenges and
Opportunities to Floating Wind:
Perspectives of Naval Architects**

D.A. Dao, A. Struve, J. Grabe:
**Numerical Investigation on the
Effect of Anchor Modelling on
Anchor Chain-Soil Interaction for
Floating Offshore Wind Turbines**

S. Kashyap, N. Saha, Z. Jiang:
**Blade Load Assessment of
an Offshore Wind Turbine
under an Earthquake**

Y.A. Shankar, S. Kashyap,
N. Saha:
**Effect of Misaligned Rotor-shaft
on Monopile-Supported
Offshore Wind Turbine**

33. TECHNICAL SESSIONS

Mare IV

Chair: Kwang-Hyo Jung
**Underwater
radiated Noise**

M. Perić:
**Prediction of Flow and
Cavitation in the Tip Vortex
of a Ship Propeller**

J.Y. Lee, D.S. Cho, M.C. Kim, H.S.
Yoon, J.G. Kang, M.J. Kim, S.G.
Park, S.Y. Shin:
**A Study on the Underwater
Radiated Noise Evaluation
Method Induced by the
Fluctuating Hydrodynamic
Pressure of a Submarine Hull
and Non-cavitating Propeller**

T. Keizer, R. Gaudel, L. Maclean,
C. Bae, B. Paterson, D. Tolman:
**Experimental Assessment of
Uncertainties in Underwater
Sound Measurements of Ships**

Z. Zhao, N.Z. Chen:
**Propagation Characteristics
Investigation of Acoustic
Emission Signals for
Structural Health Monitoring
of Wind Turbine Blades**

10:40 - 11:10

Coffee break

11:10 - 12:50	34. TECHNICAL SESSIONS Mare II Chair: Karl Henning Halse Operation B. Buchner, B. Abeil, L. Kaydihan, J. Koning, R. van 't Veer: Research into Container Loss above the Dutch Wadden Islands after the MSC ZOE Incident H.W. Lee, M.I. Roh, S.H. Ham, B.W. Nam: Coupled Analysis of the LNG Offloading Operation Based on Multibody Dynamics M. Hoogeland, H. van der Werf, N. Werter, A. Grammatikopoulos: Connector Response of a Multibody VLFS Subject to Wave Loading H. Yu, Y. Li, L.X. Li, X. Yu: Motion Simulation and Risk Assessment of Dropped Objects in Offshore Operations	35. TECHNICAL SESSIONS Mare III Chair: Neven Hadžić Renewable energy I. Čatipović, N. Alujević, D. Smoljan, A. Mikulić: A Review on Marine Applications of Solar Photovoltaic Systems D.N. Konispoliatis, S.A. Mavrakos, I.K. Chatjigeorgiou: Hydrodynamic Loading and Mooring Fatigue Estimation of an Offshore Oscillating Water Column Wave Energy Converter J.H. Lee, K.J. Paik, J. Hwangbo, T.H. Ha, S.H. Shin: An Experiment and Numerical Study on the Characteristics of Motion and Load for Floating Solar Power Farm in Regular Waves L. Tang, X. Guo, W. Liu: Study on Motion Characteristics of Floating HAWT considering Coupling of Aerodynamics and Hydrodynamics	36. TECHNICAL SESSIONS Mare IV Chair: George Jagite Sloshing & Hydro-structure interactions S. Paboeuf, W. Rehman: Validation of a Fluid Structure Interaction Tool for Flexible Propellers in Composite Materials Y. Ahn, J. Lee, T. Park, Y.H. Kim: Grouping Method for Long-term Prediction of Sloshing Loads on LNG Cargo H.B. Ju, B.S. Jang: Prediction of Sloshing Pressure in Membrane Type LNG CCS H. Wang, J. Chen, W. Duan, S. Ma: Time-domain TEBEM for Hydroelastic Responses of a Container Ship with Forward Speed
12:50 - 14:20	Lunch		
16:00 - 18:00	GUIDED CITY TOUR		



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