

6th International Conference on Maritime Technology and Engineering

MARTECH 2022 PROGRAMME



24 - 26 May 2022

IST Congress Centre
LISBON, PORTUGAL

ORGANIZATION

Conference co-Chairs

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Técnico Lisboa

Dina Dimas

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P. van Gelder, TU Delft, The Netherlands
X. Yan, Wuhan University of Technology, China
Z. Yang, Liverpool John Moores University, UK
X. Zhou, Harbin Engineering University, China

SCHEDULE AT A GLANCE

Tuesday, 24th May 2022 Registration (from 8h00 onwards)			
IST Congress Centre and Online			
Opening Session (09h00-09h30) President of IST, C. Guedes Soares and Dina Dimas			
Keynote Lectures 1 (09h40-10h15) A holistic approach to ship design - Apostolos Papanikolaou			
<i>Coffee-break</i> (10h15-10h45)			
Keynote Lectures 2 (10h45-12h30) Development and application of autonomous inland ships in China - <i>Xinping Yan</i> Offshore wind structural integrity challenges and opportunities – <i>Feargal Brennan</i> The state-of-play in maritime economics & logistics research – <i>Hercules Haralambides</i>			
<i>Lunch</i> (12h30-14h00)			
Room: 02.1 <i>Session 1.1</i> (14h00-15h30) Hydrodynamics – Seakeeping	Room: 02.2 <i>Session 2.1</i> (14h00-15h30) Maritime Traffic 1	Room: 02.3 <i>Session 3.1</i> (14h00-15h30) Environmental Conditions	Remote Only <i>Session 4.1</i> (14h00-15h30) Monitoring & Control
<i>Coffee-break</i> (15h30-16h00)			
<i>Session 1.2</i> (16h00-17h30) Hydrodynamics – Manoeuvring	<i>Session 2.2</i> (16h00-17h30) Maritime Traffic 2	<i>Session 3.2</i> (16h00-17h30) Renewable Energy	<i>Session 4.2</i> (16h00-17h30) Structures – Collision & Blast
17h30 - Conference Reception			

Wednesday, 25th May 2022 Registration (from 8h30 onwards)			
Room: 02.1 <i>Session 1.3</i> (9h00-10h30) Hydrodynamics 1	Room: 02.2 <i>Session 2.3</i> (9h00-10h30) Safety - Navigation	Room: 02.3 <i>Session 3.3</i> (09h00-10h30) Renewable Energy - Waves	Remote Only <i>Session 4.3</i> (9h00-10h30) Structures - Welding
<i>Coffee-break</i> (10h30-11h00)			
<i>Session 1.4</i> (11h00-12h30) Hydrodynamics 2	<i>Session 2.4</i> (11h00-12h30) Safety 1	<i>Session 3.4</i> (11h00-12h30) Renewable Energy - Waves Point Absorbers	<i>Session 4.4</i> (11h00-12h30) Structures 1
<i>Lunch</i> (12h30-14h00)			
<i>Session 1.5</i> (14h00-15h30) Structures 2	<i>Session 2.5</i> (14h00-15h30) Ship Machinery 1	<i>Session 3.5</i> (14h00-15h30) Renewable Energy - Wind 1	<i>Session 4.5</i> (14h00-15h30) Safety 2
<i>Coffee-break</i> (15h30-16h00)			
<i>Session 1.6</i> (16h00-17h30) Structures - Plates	<i>Session 2.6</i> (16h00-17h30) Ship Design	<i>Session 3.6</i> (16h00-17h30) Renewable Energy - Wind 2	<i>Session 4.6</i> (16h00-17h30) Ship Machinery 2
20h00 - Conference Dinner			

SCHEDULE AT A GLANCE

Thursday, 26th May 2022 Registration (from 8h30 onwards)			
Room: 02.1	Room: 02.2	Room: 02.3	Remote Only
<i>Session 1.7 (9h30-10h30)</i> Structures - Lightweight	<i>Session 2.7 (9h00-10h30)</i> Maritime Transportation & Ports 1	<i>Session 3.7 (9h00-10h30)</i> Fisheries	<i>Session 4.7 (9h00-10h30)</i> Hydrodynamics - Slamming
<i>Coffee-break (10h30-11h00)</i>			
<i>Session 1.8 (11h00-12h30)</i> Structures - Composites	<i>Session 2.8 (11h00-12h30)</i> Maritime Transportation & Ports 2	<i>Session 3.8 (11h00-12h30)</i> Aquaculture	<i>Session 4.8 (11h00-12h30)</i> Hydrodynamics - Performance
<i>Lunch (12h30-14h00)</i>			
	<i>Session 2.9 (14h00-15h30)</i> Maritime Transportation & Ports 3	<i>Session 3.9 (14h00-15h30)</i> Oil & Gas	<i>Session 4.9 (14h00-15h30)</i> Hydrodynamics - Resistance
End of the MARTECH 2022 Conference			

<i>Physical Presence</i>	<i>Remote Participation Only</i>
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Wireless Access

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SESSIONS IN ALPHABETICAL ORDER

Aquaculture - Thursday, 26/05/2022, Session 3.8, 11h00-12h30, Room: 02.3

Environmental Conditions - Tuesday, 24/05/2022, Session 3.1, 14h00-15h30, Room: 02.3

Fisheries - Thursday, 26/05/2022, Session 3.7, 09h00-10h30, Room: 02.3

Hydrodynamics 1 - Wednesday, 25/05/2022, Session 1.3, 09h00-10h30, Room: 02.1

Hydrodynamics 2 - Wednesday, 25/05/2022, Session 1.4, 11h00-12h30, Room: 02.1

Hydrodynamics - Manoeuvring - Tuesday, 24/05/2022, Session 1.2, 16h00-17h30, Room: 02.1

Hydrodynamics - Performance - Thursday, 26/05/2022, Session 4.8, 11h00-12h30, Remote Transmission only

Hydrodynamics - Resistance - Thursday, 26/05/2022, Session 4.9, 14h00-15h30, Remote Transmission only

Hydrodynamics - Seakeeping - Tuesday, 24/05/2022, Session 1.1, 14h00-15h30, Room: 02.1

Hydrodynamics - Slamming - Thursday, 26/05/2022, Session 4.7, 09h00-10h30, Remote Transmission only

Keynote Lectures 1 - Tuesday, 24/05/2022, 09h40—10h15, Auditorium

Keynote Lectures 2 - Tuesday, 24/05/2022, 10h45—12h30, Auditorium

Maritime Traffic 1 - Tuesday, 24/05/2022, Session 2.1, 14h00-15h30, Room: 02.2

Maritime Traffic 2 - Tuesday, 24/05/2022, Session 2.2, 16h00-17h30, Room: 02.2

Maritime Transportation & Ports 1 - Thursday, 26/05/2022, Session 2.7, 09h00-10h30, Room: 02.2

Maritime Transportation & Ports 2 - Thursday, 26/05/2022, Session 2.8, 11h00-12h30, Room: 02.2

Maritime Transportation & Ports 3 - Thursday, 26/05/2022, Session 2.9, 14h00-15h30, Remote Transmission only

Monitoring & Control - Tuesday, 24/05/2022, Session 4.1, 14h00-15h30, Remote Transmission only

Oil & Gas - Thursday, 26/05/2022, Session 3.9, 14h00-15h30, Room: 02.3

Opening Session - Tuesday, 24/05/2022, 09h00-09h30, Auditorium

Renewable Energy - Tuesday, 24/05/2022, Session 3.2, 16h00-17h30, Room: 02.3

Renewable Energy - Waves - Wednesday, 25/05/2022, Session 3.3, 09h00-10h30, Room: 02.3

Renewable Energy - Waves Point Absorbers - Wednesday, 25/05/2022, Session 3.4, 11h00-12h30, Room: 02.3

Renewable Energy - Wind 1 - Wednesday, 25/05/2022, Session 3.5, 14h00-15h30, Room: 02.3

Renewable Energy - Wind 2 - Wednesday, 25/05/2022, Session 3.6, 16h00-17h30, Remote Transmission only

Safety 1 - Wednesday, 25/05/2022, Session 2.4, 11h00-12h30, Room: 02.2

Safety 2 - Wednesday, 25/05/2022, Session 4.5, 14h00-15h30, Remote Transmission only

Safety - Navigation - Wednesday, 25/05/2022, Session 2.3, 09h00-10h30, Room: 02.2

Ship Design - Wednesday, 25/05/2022, Session 2.6, 16h00-17h30, Room: 02.2

Ship Machinery 1 - Wednesday, 25/05/2022, Session 2.5, 14h00-15h30, Room: 02.2

Ship Machinery 2 - Wednesday, 25/05/2022, Session 4.6, 16h00-17h30, Remote Transmission only

Structures 1 - Wednesday, 25/05/2022, Session 4.4, 11h00-12h30, Remote Transmission only

Structures 2 - Wednesday, 25/05/2022, Session 1.5, 14h00-15h30, Room: 02.1

Structures - Collision & Blast - Tuesday, 24/05/2022, Session 4.2, 16h00-17h30, Remote Transmission only

Structures - Composites - Thursday, 26/05/2022, Session 1.8, 11h00-12h30, Room: 02.1

Structures - Lightweight - Thursday, 26/05/2022, Session 1.7, 09h00-10h30, Room: 02.1

Structures - Plates - Wednesday, 25/05/2022, Session 1.6, 16h00-17h30, Room: 02.1

Structures - Welding - Wednesday, 25/05/2022, Session 4.3, 09h00-10h30, Remote Transmission only

KEYNOTE SPEAKERS

	Prof. Apostolos Papanikolaou <i>A holistic approach to ship design</i> Apostolos D. Papanikolaou is Emeritus Professor of the National Technical University of Athens (NTUA) and founder of the Ship Design Laboratory of NTUA. He studied Naval Architecture & Marine Engineering at the Technical University of Berlin. He was Senior Scientific Advisor of the Hamburger Ship Model Basin (HSVA) until 2020 and Visiting Professor in Japan, USA, Germany, Singapore and presently of the Univ. of Strathclyde.
	Prof. Xinping Yan <i>Development and application of autonomous inland ships in China</i> Prof. Xinping Yan is Chair Professor for Transport Safety, Intelligent and Green Engineering, and Director of National Engineering Research Center for Water Transport Safety (MoST) at Wuhan University of Technology. He is a Fellow and Chartered Marine Scientist of IMarEST. In 2019, he was elected Academician of the Chinese Academy of Engineering (CAE).
	Prof. Feargal Brennan <i>Offshore wind structural integrity challenges and opportunities</i> Feargal Brennan is the James Blyth Distinguished Professor of Offshore Engineering at the University of Strathclyde and Head of Naval Architecture, Ocean and Marine Engineering. He is the Director and Principal Investigator of the Strathclyde-Oxford-Cranfield Renewable Energy Marine Structures (REMS) Doctoral Training Centre and Research Director of the Wind & Marine Systems and Structures (WAMSS) Centre for Doctoral Training.
	Prof. Hercules Haralambides <i>The state-of-play in maritime economics & logistics research</i> Since 1992, Hercules Haralambides is Professor of Maritime Economics and Logistics at the Erasmus University Rotterdam (presently Emeritus), having taught at 9 universities (and in 7 different countries). He is the founder of the Erasmus Center for Maritime Economics and Logistics (MEL) and also the founding (and current) Editor-in-Chief of the quarterly journal Maritime Economics & Logistics (MEL). He has written and published over 300 scientific papers, books, reports and articles in the wider area of ports, maritime transport and logistics.

Tuesday, 24th May 2022

09h00 to 09h30
Opening Session Auditorium
Presided by: Prof. Rogério Colaço, President of IST, C. Guedes Soares & Dina Dimas

Opening Addresses

09h40 - 10h15
Keynote Lectures 1 Auditorium
Chaired by: C. Guedes Soares

A holistic approach to ship design
Apostolos Papanikolaou

10h45 - 12h30
Keynote Lectures 2 Auditorium
Chaired by: C. Guedes Soares

Development and application of autonomous inland ships in China
Xinping Yan

Offshore Wind Structural Integrity Challenges and Opportunities
Feargal Brennan

The state-of-play in maritime economics & logistics research
Hercules Haralambides

14h00 to 15h30
Session 1.1 Hydrodynamics - Seakeeping Room: 02.1
Chairs: S. Rajendran, S.Wang

Three-dimensional potential sea-keeping code in frequency domain for advancing ships
A. Abbasnia, S. Sutulo & C. Guedes Soares

Full-scale measurements of ship motion in rough seas in the Adriatic Sea
M. Katalinic, P. Matic, T. Petranovic & J. Parunov

Uncertainty assessment of wave-induced motions and loads on a container ship with a forward speed
H.S. Abdelwahab, S. Wang & C. Guedes Soares

Seakeeping optimization of cruise ship based on Artificial Neural Networks
P. Romero-Tello, J.E. Gutierrez-Romero & B. Servan-Camas

14h00 to 15h30
Session 2.1 Maritime Traffic 1 Room 02.2
Chairs: A.P. Teixeira, A. Mujal-Colilles

A dynamic Rapid-exploring Random Tree algorithm for collision avoidance for multi-ship encounter situations under COLREGs
H. Zhang, J.F. Zhang, T. Shi & C. Guedes Soares

A framework for characterizing the marine traffic off the continental coast of Portugal using historical AIS data
B. Lee, P. Silveira, H. Loureiro & A.P. Teixeira

Characterisation of ship routes off the continental coast of Portugal using the Dijkstra algorithm
P. Silveira, A.P. Teixeira & C. Guedes Soares

Ship abnormal behaviour detection off the continental coast of Portugal
H. Rong, A.P. Teixeira & C. Guedes Soares

14h00 to 15h30
Session 3.1
Environmental Conditions
Room 02.3
Chairs: M. Bernardino, L. Pinheiro

The effect of high-altitude wind forecasting models on power generation, structural loads, and wind farm optimization
E. Uzunoglu, C. Bernardo & C. Guedes Soares

Representing spectral changes in seasonal ocean wave patterns using interquartile ranges
G. Clarindo, C. Guedes Soares & G. Rodriguez

Extreme response analysis for TLP-type floating wind turbine using Environmental Contour Method
M.N. Sreebhadra, J.S. Rony, D. Karmakar & C. Guedes Soares

Long-term probabilistic identification of extreme sea-states as causes of coastal risk due to wave severity
G. Clarindo & C. Guedes Soares

14h00 to 15h30
Session 4.1
Monitoring & Control
Remote Transmission Only
Chairs: L.P. Perera, H.T. Xu

Automatic Failure Diagnosis for Flow Control Valves
E. Ruijs, X. Jiang, T. Park & R.R. Negenborn

Preliminary results of a real-time onboard monitoring system and data recording for a container ship
M.A. Hinostroza, F.P. Santos, R. Vettor, M.C. Rodrigues, M. Vieira & C. Guedes Soares

Research on the simulation of USV autonomous navigation based on MPC
GQ. Chen, Y. Li & SH. Yang

A new monitoring system of the wind actions on moored ships
S. Torre, C. Battini, M. Burlando & M.P. Repetto

16h00 – 17h30
Session 1.2
Hydrodynamics - Manoeuvring
Room: 02.1
Chairs: S. Sutulo, L. Moreira

Investigation of responses of a modular manoeuvring mathematical model to parameters variations
S. Sutulo & C. Guedes Soares

Spherical harmonic expansion of hydrodynamic hull forces
V. Ferrari, Sutulo, S. & C. Guedes Soares

An investigation on the heel influence on manoeuvrability: a twin-screw RORO vessel case study
B. Piaggio, B. Rimini, D. Villa, M. Viviani, V. Ferrari & R. Tonelli

Manoeuvring experiments, mathematical model and sensitivity analysis for test-case ferry
V. Ferrari, R. Tonelli, A.S. Kisjes & R. Hallmann

16h00 – 17h30
Session 2.2
Maritime Traffic 2
Room: 02.2
Chairs: A.P. Teixeira, A. Muijal-Colilles

Low-cost tracking system to infer fishing activity from Small Scale Fisheries in Scotland
A. Muijal-Colilles, T. Mendo, R. Swift, M. James, S. Crowe & P. McCann

Preliminary analysis of the fishing activity in Portugal
E. Lotovskyi, A.P. Teixeira, P. Silveira & E. Torrão

Identification of ship trajectories when approaching and berthing in Sines port based on AIS data
H. Rong, A.P. Teixeira & C. Guedes Soares

Simulation of search and rescue operations off the continental coast of Portugal
B. Lee & A.P. Teixeira

16h00 – 17h30
Session 3.2
Renewable Energy
Room: 02.3
Chairs: J. Gaspar, S. Mohapatra

Potential opportunities of multi-use blue economy concepts in Europe

S. Ramos, H. Díaz & C. Guedes Soares

Uncertainty analysis in the frequency domain simulation of a hinged wave energy converter

M. Kamarlouei & C. Guedes Soares

Dynamic response analysis of a combined wave and wind energy platform under different mooring configuration

J.S. Rony, D. Karmakar & C. Guedes Soares

Ferry ships: a cost/environmental comparison of innovative solutions for the electric power generation in port

T. Coppola, M. Fantauzzi, L. Micoli, L. Mocerino & F. Quaranta

16h00 – 17h30
Session 4.2
Structures – Collision & Blast
Remote Transmission Only
Chairs: J. Amdahl, B.Q. Chen

Influence of ice shape parameters on structural responses under ice-ship collision

CF. Li, XC. Song, YF. Zhang, DH. Liu & GQ. Feng

Parametric study of honeycomb sandwich panel under blast loading

D.T.A. Ansori, A.R. Prabowo, T. Muttaqie & F.B. Laksono

Evaluation of the structural integrity of the sidewall of a sidewall of a curved panel after a lateral collision accident

D.D. Bonifacio & N.M. Ramos

Numerical analysis of bulletproof performance between magnesium and aluminum alloy wall for naval ship materials

F.H.A. Alwan, A.R. Prabowo, T. Muttaqie & F.B. Lakson

Wednesday, 25th May 2022

09h00 – 10h30
Session 1.3
Hydrodynamics 1
Room: 02.1
Chairs: S. Sutulo, R. Datta

Combined performance of biomimetic ship propulsion system in waves with ship engine and application to short-sea shipping

K.A. Belibassakis

Optimization of sailboat routes under non-uniform wind velocity fields

F. Mauricio & M. Moreira

Critical overview of the operability limiting criteria of passenger ships in the Adriatic Sea

M. Corak, S. Vujicic, T. Petranovic & J. Parunov

An adjoint optimization method for partially cavitating hydrofoils with free-surface effects

D. Anevlavi & K.A. Belibassakis

09h00 – 10h30
Session 2.3
Safety - Navigation
Room: 02.2
Chairs: C.J. Fortes, H.T. Xu

Risky Maritime Encounter Prediction via Ensemble Machine Learning

M.F. Oruc & Y.C. Altan

BlueSafePort Project Safety System for Maneuvering and Moored Ships at the Port of Sines

L.V. Pinheiro, C.J.E.M. Fortes, A.H. Gomes, J.A. Santos & C. Guedes Soares

Preliminary Hazard Analysis of vessel manoeuvres in access channels to port terminals
M.C. Maturana, D.T.M.P de Abreu & M.R. Martins

Uncertainty analysis of weather simulation modeling during navigation
 (PRESENTATION ONLY)
I. Sulovsky, J. Prpić Oršić, K. Sasa & C. Chen

09h00 – 10h30
Session 3.3
Renewable Energy – Waves
Room: 02.3
Chairs: S. Mohapatra, K. Rezanejad

Numerical model of a WEC-type attachment of a moored submerged horizontal set of articulated plates
I.B.S. Bispo, S.C. Mohapatra & C. Guedes Soares

Preliminary numerical optimization of the E-Motions wave energy converter
D. Clemente, P. Rosa-Santos, F. Taveira-Pinto & P.T. Martins

CFD analysis of the PTO damping on the performance of an onshore dual chamber OWC
J. Gadelho, C. Guedes Soares, G. Barajas & J.L. Lara

Review on Hardware-in-the-Loop Simulation of Wave Energy Converters
J.F. Gaspar, R.F. Pinheiro, M. Kamarlouei, M.J.G.C. Mendes & C. Guedes Soares

09h00 – 10h30
Session 4.3
Structures - Welding
Remote Transmission Online
Chairs: J. Parunov, M. Hashemzadeh

Block assembly planning method considering installation and welding process
B. Liu, R.Li, J. Wang, Y. Liu & S. Li

Research on the influence of process parameters of traveling induction heating method for welding deformation straightening
Y.L. Feng, Y.J. Liu, R. Li & J. Wang

Numerical investigation on temperature and residual stresses distributions of stiffened aluminum plates fabricated by MIG welding
CF. Li, TL. Jin, DH. Liu, YF. Zhang & T. Liu

Experimental Investigation on Vibro-Acoustic Characteristics of Stiffened Plate Structures with Different Welding Parameters
Z. Chen, Y. Du, YS. Lin & WG. Wu

11h00 – 12h30
Session 1.4
Hydrodynamics 2
Room: 02.1
Chairs: K. Belibassakis, A. Abbasnia

Numerical study of the wave pattern around surface-piercing columns with different cross-sections in steep, monochromatic waves
M. Mohseni & C. Guedes Soares

A 3D BEM for the propagation of water waves scattered by arrays of vertical cylinders in the presence of currents
A. Magkouris, E. Filippas & K. Belibassakis

Study of slamming load using one and two way coupled method
A. Acharya & R. Datta

Adaptive nonlinear vessel steering modelling using time-sequence incremental and decremental LS-SVM
H.T. Xu & C. Guedes Soares

11h00 – 12h30
Session 2.4
Safety 1
Room: 02.2
Chairs: J.A. Santos, P. Silveira

Applying the SAFEPORT System in a storm situation
A.H. Gomes, L.V. Pinheiro, C.J.E.M. Fortes & J.A. Santos

A review of failure causes and critical factors of maritime LNG leaks
M. Abdelmalek & C. Guedes Soares

Identification of cyber-attack scenarios in a marine Dual-Fuel engine
V. Bolbot, O. Methlouthi, O. Valdez Banda, L. Xiang, Y. Ding & P. Brunou

Evaluating risk during evacuation of large passenger ships: A smart risk assessment platform for decision support
N.P. Ventikos, N. Themelis, K. Louzis, A. Koimtoglou, A. Michelis, M. Koimtoglou & A. Ragab

11h00 – 12h30
Session 3.4
Renewable Energy
– Waves Point Absorbers
Room: 02.3
Chairs: S. Wang, A. Abbasnia

Time domain analysis of a conical point-absorber moving around a hinge
T.S. Hallak, M. Kamarlouei, J.F. Gaspar & C. Guedes Soares

A preliminary evaluation of the performance parameters of point absorbers for the extraction of wave energy
J.B. Valencia & C. Guedes Soares

Hydrodynamic analysis of a dual-body Wave Energy Converter device with two different Power Take-off configurations
J.C. Souza Filho, K. Rezanejad & C. Guedes Soares

AEP assessment of a new resonant point absorber deployed along the Portuguese coastline
V. Piscopo & A. Scamardella

11h00 – 12h30
Session 4.4
Structures 1
Remote Transmission Online
Chairs: I. Lazakis, H. Gaspar

Parametric study of cross-sectional hollow tubes under compressive load using nonlinear FE analysis
A.A. Pratama, A.R. Prabowo, T. Muttaqie & F.B. Laksono

Assessing Performance Measurement Indicators for Ship Manufacturing Industry through Value Engineering and Risk Assessment (VENRA) Model
I. Baihaqi, I. Lazakis & R.E. Kurt

The role of virtual prototyping in the early-stage design of a research vessel for the Mediterranean Sea
L. Braidotti, S. Bertagna, M. Prudente, A. Marino & V. Bucci

Finite element-based structural optimization of assemblies found in ship hulls
G. Giannopoulos & K.N. Anyfantis

14h00 – 15h30
Session 1.5
Structures 2
Room: 02.1
Chairs: D. Dimas, B.Q. Chen

Effects of fibre reinforced polymer on stress concentration factors in uniplanar DKT-joints subjected to the compression loading
E. Zavvar & C. Guedes Soares

Structural design and optimization of a vertical subsea separator for deep water applications
U. Bhardwaj, A.P. Teixeira & C. Guedes Soares

Quasi-static wave induced bending moment prediction of an off-shore support vessel in head sea using the 2-D strip and 3-D panel methods
M. Tekgoz & Y. Garbatov

Geometrical characterization of ship structural design
R. Machado, J.M. Gordo & M. Ventura

14h00 – 15h30
Session 2.5
Ship Machinery 1
Room: 02.2
Chairs: V. Gonçalves Brito, F. Salvado

Assessment of marine Genset performance with biodiesel fuel using the double-Wiebe function
M. Tadros, M. Ventura & C. Guedes Soares

Maintenance strategies for machinery systems of autonomous ship

C. Karatug, Y. Arslanoglu & C. Guedes Soares

Analysis of operational data of a ship fuel optimization system

R. Madureira, J.R. Centeno da Costa &

A.P. Teixeira

Effect of different speed reduction strategies on ship fuel consumption in realistic weather conditions

M. Tadros, R. Vettor, M. Ventura &

C. Guedes Soares

14h00 – 15h30

Session 3.5

Renewable Energy – Wind 1 Room:

02.3

Chairs: E. Uzunoglu, J. Gaspar

Standardisation of Wind Turbine SCADA Data Suited for Machine Learning Condition Monitoring

I. Murdo Black & A. Kolios

Modelling the Hydrostatic Stability Characteristics of a Self-Aligning Floating Offshore Wind Turbine

D. Scicluna, T. Sant, C. De Marco Muscat-Fenech,

G. Vernengo & Y.K. Demirel

Influence of platform configuration on the hydrodynamic performance of semi-submersibles for offshore wind energy

M. Hmedi, E. Uzunoglu &

C. Guedes Soares

Stress distribution on the CENTEC/TLP in still water and rated wind speed

E. Zavvar, B.Q. Chen, E. Uzunoglu

& C. Guedes Soares

14h00 – 15h30

Session 4.5

Safety 2

Remote Transmission Only

Chairs: J. Montewka, J. Sobral

The Fire Risk Assessment of Ship Power System under Engine Room Fire

CF. Li, HY. Zhang, YF. Zhang & JC. Kang

Influence of fire-fighting intervention on fire spread characteristics in ship engine room

CF. Li, JY. Mao, ZX. Kang, SZ. Zhao & HL. Ren

Investigating ship systems performance degradation and failure criticality using FMECA and artificial neural networks

A.A Daya & I. Lazakis

A neurophysiological data driven framework for assessing mental workload of seafarers

S. Fan & Z. Yang

16h00 – 17h30

Session 1.6

Structures - Plates

Room: 02.1

Chairs: Y. Garbatov, B.Q. Chen

Probabilistic modelling of the buckling strength of steel plates in ship hulls

S.I. Karras & K.N. Anyfantis

Numerical modelling and analysis of steel specimens subjected to marine immersed corrosion and tensile load

K. Woloszyk & Y. Garbatov

Ultimate strength enhancement of butt-welded structural components by preheating treatment and induced constraints

M. Hashemzadeh, Y. Garbatov &

C. Guedes Soares

Structural capacity on the floor with opening and cut-outs of a 3800TEU container ship

A. Silva-Campillo, J.C. Suarez-Bermejo

& M.A. Herreros-Sierra

16h00 – 17h50
Session 2.6
Ship Design
Room: 02.2
Chairs: M. Ventura, X. Martinez-Garcia

Exploration of Solution Path Dependencies with a Polynomial Model

J.B. Van Houten & M.D. Collette

Hull Compartment Layout of Containerships

G. Marreiros & M. Ventura

Hydrodynamic yacht bulb optimization by embedding the hull in a B-Spline space

N. Markov

Fibre4Yards: Development of a Shipyard 4.0 for an optimized construction of composite ships (PRESENTATION ONLY)

X. Martinez Garcia, D. Sá, J. Silva &

S. Alvarez-Buylla

New technologies for automated production in the FIBRE4YARDS project (PRESENTATION ONLY)

R. Pereira, D. Cardoso, J. Silva,

I. Saenz-Dominguez, J. Grapperhaus, F. Geuskens & X. Martinez Garcia

16h00 – 17h30
Session 3.6
Renewable Energy – Wind 2
Remote Transmission Online
Chairs: A. Souto Iglesias, D. Karmakar

Dynamic Performance Prediction of Hywind Floating Wind Turbine based on SADA Method and Full-Scale Measurement Data

P. Chen, ZQ. Hu & CH. Hu

A machine visual based ship monitoring system for offshore wind farms

HT. Ji, Q. Yu, C. Wei, YT. Hu & TT. Lin

Review of hybrid model testing approaches for floating wind turbines

M. Hmedi, E. Uzunoglu & C. Guedes Soares

Floating offshore wind turbine stability study under self-induced vibrations

S. Piernikowska, M. Tomas-Rodriguez &

M. Santos Peñas

16h00 – 17h30
Session 4.6
Ship Machinery 2
Remote Transmission Online
Chairs: F. Quaranta, S. Sutulo

Operational and economic assessment of the flapping-foil thruster propulsion innovation performance

N.P. Ventikos, P. Sotiralis, V. Stamatopoulou,

E. Annetis, E. Filippas & K. Belibassakis

Analysis of the efficiency of wind-assisted ship propulsion systems

S. Kyulevcheliiev & D. Krastev

Study of the impact of Electromagnetic Fields on the reduction of biofouling in heat exchangers

D. Boullosa-Falces, M.A. Gomez-Solaetxe,

Z. Sanchez Varela, S. García, A. Trueba &

D.S. Sanz

Thursday, 26th May 2022

09h00 – 10h30

Session 1.7

Structures - Lightweight

Room: 02.1

Chairs: Y. Garbatov, J.R. Centeno

Additively manufactured lightweight autonomous underwater vehicle for marine applications

G. Palomba, G. Epasto & V. Crupi

Structural analysis of a 'Foiling Moth' sailing dinghy hydrofoil

R. Ponte, L.S. Sutherland &

Y. Garbatov

Alternative hybrid lightweight ship hull structural design

Y. Garbatov, S. Scattareggia Marchese, G.

Palomba & V. Crupi

Innovative solutions enabling modular product architecture in boatbuilding

S. Bertagna, L. Braidotti, A. Pasquin, A. Marino & V. Bucci

09h00 – 10h30

Session 2.7

Maritime Transportation & Ports 1

Room: 02.2

Chairs: M. Ventura, T.A. Santos

Improving the environmental performance of shipping and maritime transport - Highlights of the maritime emissions workshop

E. Altarriba, S. Rahiala, T. Tanhuanpää & M. Piispa

Short sea shipping gas emissions and dispersion

Y. Garbatov & P. Georgiev

The effects of operational and environmental conditions in cruise ship emissions in port areas

H. Abreu, V. Cardoso & T.A. Santos

Evaluation of decarbonization strategies for existing ships

C. Karatug, Y. Arslanoglu & C. Guedes Soares

09h00 – 10h30

Session 3.7

Fisheries

Room: 02.3

Chairs: T. Raid, A. Campos

Use of autonomous research vehicles in Baltic fisheries acoustic surveys: potential benefits and pitfalls

E. Sepp, M. Vetemaa & T. Raid

Variability in the structure of pelagic fish communities: a pitfall for management of herring in the Baltic Sea

T. Raid & E. Sepp

Spatial characterization of pelagic fisheries in the Northeast Atlantic: the e-shape pilot "Monitoring Fishing Activity"

A.P. Gaspar, M. Chapela, R. Silva, G. Mendes, D. Cordeiro, N. Grosso, P. Ribeiro, V. Henriques & A. Campos

Defining multi-gear fisheries through species association

P. Leitão & A. Campos

09h00 – 10h30

Session 4.7

Hydrodynamics - Slamming

Remote Transmission Online

Chairs: S. Hirdaris, E. Begović

A CFD-FEA coupled method for ship hydroelasticity analyses

JL. Jiao, S. Wang & C. Guedes Soares

Research on the influence of slamming load on ship fatigue damage and its calculation method

R.G. Wang, W.J. Xu, Z. Hua & X.Q. Zhou

Quantification of uncertainty in slamming load predictions (PRESENTATION ONLY)

S. Wang

Excitation calculation of whirling vibration of high-speed craft propeller in incomplete submerged state

F.S. Wei, Y. Liu, J. Wang & R. Li

11h00 – 12h30

Session 1.8

Structures - Composites

Room: 02.1

Chairs: J.R. Centeno, B.Q. Chen

Uncertainty propagation and sensitivity analysis of a composite material wave energy converter structure

M. Calvário & C. Guedes Soares

Fluid-structure interaction analyses of a composite windsurf fin

L.S. Sutherland, M. Cardoso de Brito, J. Chaves Pereira, M.R. Arruda & S. Benson

Experimental investigation of Carbon and Glass hybrid composite under ballistic impact for marine applications

V.V. Kumar, S. Rajendran, S. Ramakrishna & S. Surendra

Structural integrity analysis through numerical simulations of a vessel made with natural sandwich type material

D.O. Sagástegui & A.A. Terán

11h00 – 12h30

Session 2.8

Maritime Transportation & Ports 2

Room: 02.2

Chairs: T.A. Santos, M. Ventura

Geographical scope of competitive-ness of short sea shipping and freight railways in the Atlantic Corridor

T.A. Santos, M.Â. Fonseca, P. Martins & C. Guedes Soares

The East-European maritime ports hinterland and the influence of road transport network

F. Rusca, A. Rusca, E. Rosca, C. Oprea, O. Dinu & A. Ilie

Design Exploration of Autonomous Container Transshipment for Interterminal Transport based on Current Technology

S. Pargalgauskas, K. Kruimer, J. Jovanova & D. Schott

Optimization model for integrated port terminal management

F.G.G. Pereira, J.P.G. Cruz, R.C. Botter & L.T. Robles

11h00 – 12h30

Session 3.8

Aquaculture

Room: 02.3

Chairs: S. Wang, S. Mohapatra

Numerical study on the mooring force of a gravity-type fish cage under currents and waves

ZC. Liu & C. Guedes Soares

Experimental investigation of an array of vertical flexible net-type structures under regular waves

Y.C. Guo, Z.C. Liu, S.C. Mohapatra & C. Guedes Soares

Preliminary experiments of the behaviour of circular gravity cage in linear waves

ZC. Liu & C. Guedes Soares

Assessment of macroinvertebrates culture in an integrated multitrophic aquaculture system

J.P. Garces, N. Diogo & S. Gamito

11h00 – 12h30

Session 4.8

Hydrodynamics - Performance

Remote Transmission Online

Chairs: J. Prpić-Orsić, S. Sutulo

Evaluation of Ship Performance for Small-Sized Container Ship with Actual Sea Database in the Pacific Ocean along Japanese Coast

M. Maeda, K. Sasa, D. Terada, H. Oda, Y. Tanaka, M. Kosao & K. Asaki

Multiple Analysis for Optimal Ship Routing
Simulation of 28,000-DWT Bulk Carrier in the
Southern Hemisphere

J. Tanaka, K. Sasa, A. Maki & C. Chen

Numerical and experimental investigation of a
model scaled propeller

*D. Ntouras, G. Papadakis, D. Liarokapis, G.
Trachanas & G. Tzabiras*

Numerical simulation of wave interaction with a
suspended cylinder using OpenFOAM

*M. Wang, A. Mujal-Colilles &
C. Molins*

14h00 – 15h30

Session 2.9

Maritime Transportation & Ports 3

Remote Transmission Only

Chairs: A. Martinez-Lopez, Manuel Ventura

Emerging ICT in port operations: case studies
F. Russo & G. Musolino

Environmental assessment of the scrubbers' use
in regular traffic between the Canary Islands and
the Iberian Peninsula

*A. Martinez-Lopez, Á. Marrero, Y. Martin-Cruz &
M. Miguez Gonzalez*

Risk assessment and dynamic simulation of
concentralized distribution logistics of the cruise
construction build-in material

Z.M. Cui, H.Y. Wang & J. Xu

Numerical simulations of potential oil spills near
Fernando de Noronha archipelago

*P.G.S.C. Siqueira, J.A.M. Silva, M.L.B. Gois,
H.O. Duarte, M.C. Moura, M.A. Silva & M.C.
Araujo*

14h00 – 15h30

Session 3.9

Oil & Gas

Room: 02.3

Chairs: A.P. Teixeira

Analysis of the basic causes of FPSO fluid
releases

U. Bhardwaj, A.P. Teixeira & C. Guedes Soares

A stochastic programming model for designing
an offshore production system

L.M.R. Silva & C. Guedes Soares

Intuitionistic Fuzzy-MULTIMOORA-FMEA for
FPSO oil and gas processing system

P.J. Yang, C. Yi, Z. Kang & J.C. Kang

Stochastic characterization of a petroleum
reservoir

J.V. Saide & A.P. Teixeira

14h00 – 15h30

Session 4.9

Hydrodynamics – Resistance

Remote Transmission Only

Chairs: S. Sutulo, R. Dejhalla

Comparison between empirical and CFD based
methods for ship resistance and power
prediction

*H. Islam, M. Ventura, C. Guedes Soares,
M. Tadros & H.S. Abdelwahab*

Numeric analysis of the biofouling impact on the
ship resistance with ceramic coating on the hull

*D.S. Sanz, S. Garcia, A. Trueba, L. Trueba-
Castañeda, H. Islam, C. Guedes Soares &
D. Boullosa-Falces*

Environmental effects for ship optimization
assuming standard resistance prediction

*H.R. Díaz-Ojeda, A. Martínez-López,
M.M. González & Á. Marrero*

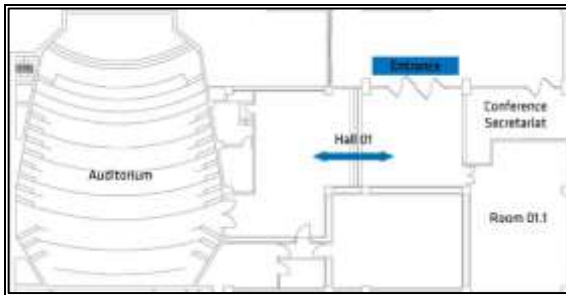
A comparative study for resistance prediction
using different RANS solvers

*M.M. Rahaman, N.M.G. Zakaria, M. Mostafiz
& H. Islam*

MARTECH 2022 Conference Venue

The technical sessions of the MARTECH2022 Conference will be held at the IST's Congress Centre located at the Alameda Campus, on the Lower Ground Level 01 and Level 02 of the Civil Engineering Building. And, also some technical sessions will be transmitted online via the Zoom system.

IST's Congress Centre



Lower Ground

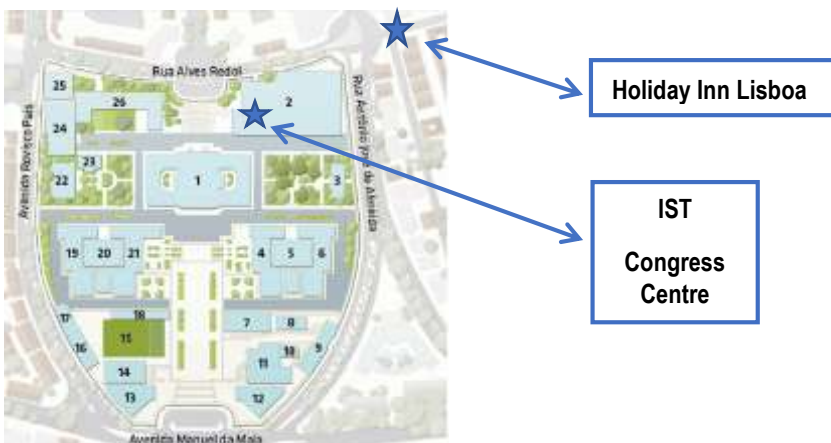
Level 01

Lower Ground

Level 02



The MAP below shows the location of the IST's Congress Centre in the Campus, and the location of the Hotel Holiday Inn Lisboa where lunches will be served for the registered participants with lunch tickets.



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