

**7th International Conference on
Maritime Technology and Engineering**

MARTECH 2024 PROGRAMME



14 - 16 May 2024

**IST Congress Centre
LISBON, PORTUGAL**

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Técnico Lisboa

Dina Dimas

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X.B. Xiang, Huazhong University of Science & Technology, P.R. China

X. Yan, Wuhan University of Technology, P.R. China

X. Zhou, Harbin Engineering University, P.R. China

SCHEDULE AT A GLANCE

Tuesday, 14th May 2024 Registration (from 8h00 onwards)			
IST Congress Centre Opening Session (09h00-09h30) President of IST, President of "Ordem dos Engenheiros", C. Guedes Soares and Dina Dimas			
Keynote Lectures 1 (09h30-10h30) Thirty years of the Centre for Marine Technology and Ocean Engineering – C. Guedes Soares Harnessing energy from the oceans – Atilla Incecik			
Coffee-break (10h30-11h00)			
Keynote Lectures 2 (11h00-12h30) Challenges for future maritime technology and engineering – Bas Buchner Roadmap for the European research in waterborne transportation– Maria Boile Progress of autonomous ships in China - Xiping Yan			
Lunch (12h30-14h00)			
Room: 02.1 Session 1.1 (14h00-15h30) Hydrodynamics 1	Room: 02.2 Session 2.1 (14h00-15h30) Maritime Safety & Reliability	Room: 02.3 Session 3.1 (14h00-15h30) Environmental Modelling 1	Room: Auditorium Session 4.1 (14h00-15h30) Structures – Ultimate Strength
Coffee-break (15h30-16h00)			
Session 1.2 (16h00-17h30) Hydrodynamics 2	Session 2.2 (16h00-17h30) Maritime Safety & Reliability - Accidents	Session 3.2 (16h00-17h30) Environmental Modelling 2	Session 4.2 (16h00-17h30) Structures – Dynamics
17h30 - Conference Reception in Hall 02 Level			
Wednesday, 15th May 2024 Registration (from 8h30 onwards)			
Room: 02.1 Session 1.3 (9h00-10h30) Hydrodynamics 3	Room: 02.2 Session 2.3 (9h00-10h30) Maritime Safety & Reliability – Hazardous Materials	Room: 02.3 Session 3.3 (09h00-10h30) Environmental Modelling 3	Room: 01.1 Session 4.3 (9h00-10h30) Structures - Deterioration
Coffee-break (10h30-11h00)			
Session 1.4 (11h00-12h30) Hydrodynamics - CFD	Session 2.4 (11h00-12h30) Maritime Safety & Reliability – Structural Reliability	Session 3.4 (11h00-12h30) Renewable Energy	Session 4.4 (11h00-12h30) Structures
Lunch (12h30-14h00)			
Session 1.5 (14h00-15h30) Hydrodynamics - Seakeeping	Session 2.5 (14h00-15h30) Maritime Traffic Modelling 1	Session 3.5 (14h00-15h30) Renewable Energy - Waves	JETM 2024
Coffee-break (15h30-16h00)			
Session 1.6 (16h00-17h30) Wave Loads	Session 2.6 (16h00-17h30) Maritime Traffic Modelling 2	Session 3.6 (16h00-17h30) Renewable Energy - Wind	JETM 2024
20h00 - Conference Dinner			

SCHEDULE AT A GLANCE

Thursday, 16th May 2024 Registration (from 8h30 onwards)			
Room: 02.1	Room: 02.2	Room: 02.3	Room: 01.1
Session 1.7 (9h00-10h30) Hydrodynamics – Manoeuvring 1	Session 2.7 (9h00-10h30) Maritime Transportation 1	Session 3.7 (9h00-10h30) Aquaculture 1	Session 4.5 (9h00-10h30) Structures - Technology
<i>Coffee-break (10h30-11h00)</i>			
Session 1.8 (11h00-12h30) Hydrodynamics – Manoeuvring 2	Session 2.8 (11h00-12h30) Maritime Transportation 2	Session 3.8 (11h00-12h30) Aquaculture 2	Session 4.6 (11h00-12h30) Structures - Composites
<i>Lunch (12h30-14h00)</i>			
Session 1.9 (14h00-15h30) Autonomous Ships	Session 2.9 (14h00-15h30) Maritime Transportation 3	Session 3.9 (14h00-15h30) Ship Design	JETM 2024
<i>Coffee-break (15h30-16h00)</i>			
	Session 2.10 (16h00-17h30) Maintenance	Session 3.10 (16h00-17h30) Ship Machinery	JETM 2024
End of the MARTECH 2024 Conference			

Associated Event



WEGEMT Workshop

Strengthening the University Sector in Cooperation with Industry

17 May 2024 at IST Congress Centre, Lisbon, Portugal

Workshop for WEGEMT University members.

<https://www.wegemt.com/wegemt-associates/>

SESSIONS IN ALPHABETICAL ORDER

Aquaculture 1 - Thursday, 16/05/2024, Session 3.7, 09h00-10h30, Room: 02.3

Aquaculture 2 - Thursday, 16/05/2024, Session 3.8, 11h00-12h30, Room: 02.3

Autonomous Ships - Thursday, 16/05/2024, Session 1.9, 14h00-15h30, Room: 02.1

Environmental Modelling 1 – Tuesday, 14/05/2024, Session 3.1, 14h00-15h30, Room: 02.3

Environmental Modelling 2 - Tuesday, 14/05/2024, Session 3.2, 16h00-17h30, Room: 02.3

Environmental Modelling 3 - Wednesday, 15/05/2024, Session 3.3, 09h00-10h30, Room: 02.3

Hydrodynamics 1 - Tuesday, 14/05/2024, Session 1.1, 14h00-15h30, Room: 02.1

Hydrodynamics 2 - Tuesday, 14/05/2024, Session 1.2, 16h00-17h30, Room: 02.1

Hydrodynamics 3 - Wednesday, 15/05/2024, Session 1.3, 09h00-10h30, Room: 02.1

Hydrodynamics - CFD - Wednesday, 15/05/2024, Session 1.4, 11h00-12h30, Room: 02.1

Hydrodynamics – Manoeuvring 1 - Thursday, 16/05/2024, Session 1.7, 09h00-10h30, Room: 02.1

Hydrodynamics – Manoeuvring 2 - Thursday, 16/05/2024, Session 1.8, 11h00-12h30, Room: 02.1

Hydrodynamics - Seakeeping - Wednesday, 15/05/2024, Session 1.5, 14h00-15h30, Room: 02.1

Keynote Lectures 1 - Tuesday, 14/05/2024, 09h40-10h15, Room: Auditorium

Keynote Lectures 2 - Tuesday, 14/05/2024, 10h45-12h30, Room: Auditorium

Maintenance - Thursday, 16/05/2024, Session 2.10, 16h00-17h30, Room: 02.2

Maritime Safety and Reliability - Tuesday, 14/05/2024, Session 2.1, 14h00-15h30, Room: 02.2

Maritime Safety and Reliability - Accidents - Tuesday, 14/05/2024, Session 2.2, 16h00-17h30, Room: 02.2

Maritime Safety and Reliability – Hazardous Materials - Wednesday, 15/05/2024, Session 2.3, 09h00-10h30, Room: 02.2

Maritime Safety and Reliability – Structural Reliability - Wednesday, 15/05/2024, Session 2.4, 11h00-12h30, Room: 02.2

Maritime Traffic Modelling 1 - Wednesday, 15/05/2024, Session 2.5, 14h00-15h30, Room: 02.2

Maritime Traffic Modelling 2 - Wednesday, 15/05/2024, Session 2.6, 16h00-17h30, Room: 02.2

Maritime Transportation 1 - Thursday, 16/05/2024, Session 2.7, 09h00-10h30, Room: 02.2

Maritime Transportation 2 - Thursday, 16/05/2024, Session 2.8, 11h00-12h30, Room: 02.2

Maritime Transportation 3 - Thursday, 16/05/2024, Session 2.9, 14h00-15h30, Room: 02.2

Renewable Energy - Wednesday, 15/05/2024, Session 3.4, 11h00-12h30, Room: 02.3

Renewable Energy - Waves - Wednesday, 15/05/2024, Session 3.5, 14h00-15h30, Room: 02.3

Renewable Energy - Wind - Wednesday, 15/05/2024, Session 3.6, 16h00-17h30, Room: 02.3

Ship Design - Thursday, 16/05/2024, Session 3.9, 14h00-15h30, Room: 02.3

Ship Machinery - Thursday, 16/05/2024, Session 3.10, 16h00-17h30, Room: 02.3

Structures - Wednesday, 15/05/2024, Session 4.4, 11h00-12h30, Room: 01.1

Structures - Composites - Thursday, 16/05/2024, Session 4.6, 11h00-12h30, Room: 01.1

Structures – Deterioration - Wednesday, 15/05/2024, Session 4.3, 09h00-10h30, Room: 01.1

Structures - Dynamics - Tuesday, 14/05/2024, Session 4.2, 16h00-17h30, Room: Auditorium

Structures - Technology - Thursday, 16/05/2024, Session 4.5, 09h00-10h30, Room: 01.1

Structures – Ultimate Strength - Tuesday, 14/05/2024, Session 4.1, 14h00-15h30, Room: Auditorium

Wave Loads - Wednesday, 15/05/2024, Session 1.6, 16h00-17h30, Room: 02.1

KEYNOTE SPEAKERS



Prof. Atilla Incecik

Harnessing Energy from the Oceans

Atilla Incecik is Professor of Offshore Engineering at the University of Strathclyde, Glasgow. During the last sixteen years he served as the Head of Department of Naval Architecture, Ocean and Marine Engineering, and Associate Principal and the Executive Dean of the Faculty of Engineering. Professor Incecik's research activities include the development of hydrodynamic design and analysis tools and model testing of marine and offshore engineering systems, including marine renewable energy devices.

Professor Incecik was the Research Manager of Industrial Doctoral Centre for Offshore Renewable Energy (IDCORE) and is a Chair Professor at Zhejiang University. Professor Incecik was Editor-in-Chief of Ocean Engineering Journal between 2006 and 2023. In 2019 Professor Incecik was awarded an Honorary Doctorate by Chalmers University of Technology, Sweden in recognition of his research on green shipping and environmental sustainability.



Dr. Bas Buchner

Challenges for Future Maritime Technology and Engineering

Dr. Bas Buchner studied at Delft University of Technology and graduated in 1991. He joined MARIN and was responsible for many offshore model test and simulation projects related to mooring, platform response, offloading analysis and wave impact loading. He specialised in the topics of extreme waves, green water loading and wave impacts. He completed his PhD on the subject of 'Green Water Loading on Ship Type Offshore Structures' (2002). He was Manager of the MARIN Offshore Department from 2000 to 2010 and was the leader of many Joint Industry Projects (JIP's) in the Offshore sector. In 2007 he started the MARIN Renewable Energy Team (RENT) to contribute to the development of offshore renewable energy with MARIN's expertise. He has authored more than 50 papers in the field of offshore and ship hydrodynamics. Since 2011, he is President of MARIN. Under his leadership MARIN developed its new 'Better Ships, Blue Oceans' strategy, focusing MARIN's mission on cleaner, smarter and safer shipping and sustainable use of the seas.



Prof. Maria Boile

Roadmap for the European Research in Waterborne Transportation

Prof. Maria Boile is Director of the MSc in Shipping and Director of the Quantitative Analysis in Shipping Laboratory at the University of Piraeus, Department of Maritime Studies. She is Head of the Transport Economics and Environment, Maritime and Air Transport Sector, at the Hellenic Institute of Transport (HIT), Centre for Research and Technology Hellas (CERTH). She is Affiliated Faculty with the Center for Advanced Infrastructure and Transportation, at Rutgers, the State University of New Jersey, and Coordinator of the European Waterborne Technology Platform.

Professor Boile has served in senior academic and research positions in Europe and the U.S. She holds a diploma in Civil (Transportation) Engineering from the National Technical University of Athens, Greece, M.Sc. in Civil and Environmental Engineering from Rutgers University, US, and Ph.D. in Transportation Engineering from the New Jersey Institute of Technology, US. She has participated in over 80 sponsored research projects, as a principal investigator in over half of them. She has authored and co-authored over 170 technical articles, 12 book chapters and two books.



Prof. Xinping Yan

Progress of Autonomous Ships in China

Prof. Xinping Yan is Chair Professor and Director of State Key Laboratory of Maritime Technology and Safety, Base for International Science & Technology Cooperation on Smart Shipping and Maritime Safety (MoST), Wuhan University of Technology, China. He is the Chair of Intelligent Water Transport Safety of IEEE ITS and a Fellow and Chartered Marine Scientist of IMarEST.

In 2019, he was elected Academician of the Chinese Academy of Engineering (CAE). His research interests include intelligent transport system key technologies, intelligent fault diagnosis of marine engines, renewable energy, energy efficiency management of the vessel, navigation systems for vessels, amongst others.

Tuesday, 14th May 2024

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

Opening Addresses by

C. Guedes Soares
Dina Dimas
President of OE
President of IST

09h30 - 10h30
Keynote Lectures 1
Auditorium
Chaired by: Yordan Garbatov

Thirty years of the Centre for Marine Technology
and Ocean Engineering
C. Guedes Soares

Harnessing energy from the oceans
Atilla Incecik

11h00 - 12h30
Keynote Lectures 2
Auditorium
Chaired by: C. Guedes Soares

Challenges for future maritime technology
and engineering
Bas Buchner

Roadmap for European research in
waterborne transportation
Maria Boile

Progress of autonomous ships in China
Xinping Yan

14h00 to 15h30
Session 1.1
Hydrodynamics 1
Room: 02.1
Chaired by: Bas Buchner

Hydrodynamics of ship propulsion in waves:
A review
I. Sulovsky & J. Prpić-Oršić

Comparative analysis between numerical and
analytical methods to calculate added mass
A. Jahanbakhsh, L. Moro & M. Islam

Seakeeping analysis in regular waves using a
Smoothed Particle Hydrodynamics solver
*S. Wang, C. Guedes Soares, J. Gonzalez-Cao,
J.M. Dominguez-Alonso, I. Martinez-Estévez,
A.J.C. Crespo & M. Gomez-Gesteira*

Computational fluid dynamics of vortex induced
vibration on cylinders
V. Galvão, S. Wang, C. Guedes Soares & G. Assi

14h00 to 15h30
Session 2.1
Maritime Safety & Reliability
Room 02.2
Chaired by: Jinfen Zhang

Safety and economic optimization of offshore
production systems
L.M.R. Silva & C. Guedes Soares

A numerical study of the behaviour of Hydrogen
in ventilated spaces
*A. Twerda, B. van de Krol, A.W. Vredeveltd
& C. Lombardi*

Learning operational envelopes
N. Clemett & M. Collette

Safety barriers for preventing leaks due to
failure of maintenance operations on-board
LNG floaters
M. Abdelmalek & C. Guedes Soares

14h00 to 15h30
Session 3.1
Environmental Modelling 1
Room 02.3
Chaired by: Liliana Rusu

Assessing wind and wave climate in the North Atlantic using ERA20 reanalysis data
M. Bernardino & C. Guedes Soares

Assessing climate change in the Azores area in the near future
M. Gonçalves, M. Bernardino & C. Guedes Soares

On the performance of wave models in coastal areas
T. Gavazzoni, D. Silva & C. Guedes Soares

Estimation of environmental wave contours along the Portuguese continental coast using the Burr distribution
G. Clarindo & C. Guedes Soares

14h00 to 15h30
Session 4.1
Structures – Ultimate Strength
Room: Auditorium
Chaired by: Baiqiao Chen

Ultimate strength assessment of panels with thin-plates and small-sized stiffeners under combined biaxial loads
M. Ozdemir, S. Zhang, L. Yu & H. Ocakli

Ultimate strength of corrugated-core sandwich plates under in-plane compression
M. Elsaka & C. Guedes Soares

Uncertainty analysis of ultimate strength models of stiffened plates
A. Kakaie, Y. Garbatov & C. Guedes Soares

Ultimate strength tests on the stiffened plate panels
S.S. Guo, L. Zhu & S.M. Zhang

16h00 – 17h30
Session 1.2
Hydrodynamics 2
Room: 02.1
Chaired by: Juana Fortes

Analysis of dual submerged horizontal membrane breakwater using an analytical method
Y.C. Guo & C. Guedes Soares

Multivariable operability and downtime assessment of a tanker moored at an upgraded oil terminal in Leixões port
H.S. Abdelwahab & C. Guedes Soares

Quantifying ship impact loads on fenders: Experimental approach
L.V. Pinheiro, A.H. Gomes, C.E.J. Fortes, J. Manso & J. Marcelino

16h00 – 17h30
Session 2.2
Maritime Safety & Reliability - Accidents
Room: 02.2
Chaired by: Ângelo P. Teixeira

A study on the human evacuation on heeling ships considering the utilization rate of facilities
S.M. Fang, Z.J. Liu, X.J. Wang & J. Ning

A data-driven Bayesian Network for risk modeling and causal analysis of global maritime accidents
H.Y. Jiang, J.F. Zhang, C.P. Wan, M.Y. Zhang & C. Guedes Soares

Heterogeneity analysis of risk factors of maritime accidents in different ship types
W.J. Cao, X.J. Wang, Y.W. Feng, H.X. Wang, Z.J. Liu & Q. Yu

Research on the characteristics of collision accidents between merchant ships and fishing vessels within the waters of China
C. Dong, X. Wang & Y. Gong

16h00 – 17h30
Session 3.2
Environmental Modelling 2
Room: 02.3
Chaired by: Sonia Ponce

A high-resolution wave energy assessment for the Sines region

M. Sancho, M. Bernardino & C. Guedes Soares

Forecast uncertainty considerations in ship weather routing

M. Balas, J. Prpić-Oršić & M. Valčić

Uncertainty in the estimation of extreme winds offshore Portugal

X.N. Hu, G.S. Fang, Y.J. Ge & C. Guedes Soares

Uncertainty assessment of direct Monte Carlo contours due to the sample variability

G. Clarindo & C. Guedes Soares

16h00 – 17h30
Session 4.2
Structures - Dynamics
Room: Auditorium
Chaired by: Gaute Storhaug

Comparative numerical analysis of vibratory pile extraction with experiment

S. Salahshour, M.C. Ong & N. Hinzmann

Recent developments in ship structural components subjected to repeated impact loadings

X. He & C. Guedes Soares

Vibration dose value assessment from full scale measurements

G. Storhaug & G. Jagite

Numerical study on energy dissipation of ship plates under repeated impacts

X.G. Wang, L. Zhu, X. He & C. Guedes Soares

Wednesday, 15th May 2024

09h00 – 10h30
Session 1.3
Hydrodynamics - CFD
Room: 02.1
Chaired by: Maria Acanfora

Conducting tests using large-scale, self-propelled models at sea

D. Liarokapis, G. Trachanas, G. Grigoropoulos & K. Belibassakis

Hydrodynamic analysis and experimental verification of cutting device for propeller entanglement

J. Liu, P. Qin, B. He & C. Guedes Soares

Seaworthiness and resistance performance of a catamaran at preliminary design stage

F. Soardi & G. Vernengo

On the computational costs of potential models for floating bodies in waves

A. Abbasnia & C. Guedes Soares

09h00 – 10h30
Session 2.3
Maritime Safety & Reliability – Hazardous Materials
Room: 02.2
Chaired by: Hendrik W. Brinks

The underwater venting of methanol vapour

C. de Boom, A. Twerda, A.W. Vredevelde & M. Hoogeland

Numerical investigation of fire risk in ammonia tank leak incidents: implications for ammonia-fuelled vessels

M.A.M. Palliparambil, B. Jeong, H. Jang, H. Wang & P. Zhou

Establishing safety zones for ammonia bunkering operations: A quantitative risk assessment

I. Hwang, P. Zhou, B. Jeong, H. Wang, H. Jang & M.P. Palliparambil

Foresight report on future availability of green/blue ammonia in 2030, 2040 and 2050 (ORAL PRESENTATION)
H.W. Brinks

09h00 – 10h30
Session 3.3
Environmental Modelling 3
Room: 02.3
Chaired by: Mariana Bernardino

Nearshore wind-wave spectrum estimation by a low-cost video system
M. Vieira & C. Guedes Soares

Accuracy improvement of wave forecasts with long short-term memory models
M. Ré Henriques & C. Guedes Soares

Improving the accuracy of significant wave height hindcast data with long short-term memory models
M. Latas, A. Ali, D. Silva & C. Guedes Soares

09h00 – 10h30
Session 4.3
Structures – Deterioration
Room: 01.1
Chaired by: Yordan Garbatov

Effects of mesh density on stress intensity factor of a pitting-induced crack
M. Pang & N.Z. Chen

Impact of uniform and grooving corrosion on hot-spot stresses of a T-shaped tubular joint
Y. Dong, L.G. Liu, H.K. Yang, X. Liu & Y. Garbatov

Probability model of flexural capacity of corroded steel beam
T. Shi & Y. Wang

Reconstructing non-uniform strain distributions for Bragg grating sensor using memetic algorithm
H. Qiu & N.Z. Chen

11h00 – 12h30
Session 1.4
Hydrodynamics 3
Room: 02.1
Chaired by: Atilla Incecik

CFD study on the hydrodynamic performance of a container ship under berthing speed
S. Zhang, Q. Wu, S.J. Li, YX. Duan & J.L. Liu

Development of an innovative bow shape to enhance hydrodynamic performance in a seaway
H. Orihara, I. Amaya, H. Yoshida, K. Yamagishi & T. Inoue

Uncertainty assessment of the scale effects on a submerged cylinder
HS. Li, S. Wang & C. Guedes Soares

Accuracy of the SPH-based solver DualSPHysics to reproduce hydrodynamic forces on bodies in a steady flow
J. Gonzalez-Cao, J.M. Dominguez, I. Martinez-Estévez, A.J.C. Crespo, M. Gomez-Gesteira, S. Wang & C. Guedes Soares

11h00 – 12h30
Session 2.4
Maritime Safety & Reliability – Structural Reliability
Room: 02.2
Chaired by: Ângelo P. Teixeira

A fire risk assessment method for offshore platforms: Applications of 24Model with BN
M.Y. Guo & M. Chen

Structural reliability assessment of secondary hull component subjected to crack growth due to local vibration
S.K Kleivane & B.J. Leira

Fatigue reliability assessment of an additive manufacturing material
U. Bhardwaj, A.P. Teixeira, C. Guedes Soares, Md.S. Kamil & A.K. Ariffin

11h00 – 12h30
Session 3.4
Renewable Energy
Room: 02.3
Chaired by: José Gaspar

Effect of mooring lines to hydroelastic response of floating flexible circular structure based on analytical approach

*P. Amouzadrad, S.C. Mohapatra
& C. Guedes Soares*

Dynamic performance of Torus wave energy converter combined with offshore wind turbine semi-submersible platform

B. Sebastian, D. Karmakar & C. Guedes Soares

Test bench for the study of CO2 storage using physical adsorption for AIP systems

*A. Villalba-Herreros, R. d'Amore-Domenech,
V.L. Meca, T.J. Leo & D. Díaz-Cuenca*

Sensitivity analysis of loads on subsea power cables during installation

M. Peres, S. Wang & C. Guedes Soares

11h00 – 12h30
Session 4.4
Structures
Room: 01.1
Chaired by: Nianzhong Chen

Deep active learning with KD-Tree based greedy sampling in structural simulation

C. Jiang & N.Z. Chen

Advancing hull monitoring through physics-informed machine learning: Towards a real-time approach

*S. Haberl, S.A. Eid, F. von Bock und Polach
& S. Ehlers*

An approach to damage identification of ship hull structures in irregular waves

H.Y. Tang, Z.C. He, D.Y. Ren & C. Guedes Soares

Numerical analysis of the effect of current and wind on the dynamics of large floating flexible platform

*P. Amouzadrad, S.C. Mohapatra
& C. Guedes Soares*

14h00 – 15h30
Session 1.5
Hydrodynamics - Seakeeping
Room: 02.1
Chaired by: Lorenzo Moro

Study on the behaviour of a container ship in the Mediterranean Sea area

A.-M. Chiroasca & L. Rusu

Numerical study on seakeeping behavior of unmanned sailing boats under extreme wave conditions

*J.J. Wang, H.T. Wang, G. Xiang, X.B. Xiang
& C. Guedes Soares*

Uncertainty assessment for linear transfer functions from different numerical methods

M.I. Rodrigues, S. Wang & C. Guedes Soares

Rapid evaluation of pure loss of stability based on atlas method

H.M. Zhang & K. Li

14h00 – 15h30
Session 2.5
Maritime Traffic Modelling 1
Room: 02.2
Chaired by: Jinfen Zhang

An integrated ship collision avoidance strategy based on deep reinforcement learning and model predictive control

C.X. Zhao, X. Wang, H.B. Li & C.W. Zhang

Detection and analysis of ship domain parameters in confined waters

*DP. Liu, C.-L. Siow, H.-S. Kang
& C. Guedes Soares*

Maritime traffic complexity evaluation in the Yangtze River using AIS data

*X. Xu, X. Yan, B. Wu, A.P. Teixeira
& C. Guedes Soares*

Analysis of collision risk indicators in ship collision avoidance behaviour using Logistic Regression

H. Rong, A.P. Teixeira & C. Guedes Soares

14h00 – 15h30
Session 3.5
Renewable Energy - Waves
Room: 02.3
Chaired by: Debabrata Karmakar

Performance analysis of freely heaving U-OWC integrated with I-shaped breakwater using Boundary Element Method

R. Muduli, D. Karmakar & C. Guedes Soares

Wave energy converter power take-off with active oil-hydraulic accumulator

J.F. Gaspar, C. Zeng, H.T. Xu, T.S. Hallak,

C. Guedes Soares & M.J.G.C. Mendes

Wave energy converter arrays performance in variable water depth regions

Th. Gerostathis, A. Magkouris & K. Belibassakis

Coupling analysis of a semi-submersible platform with an array of wave energy devices

X.L. Zhao, R. Yan, J. Geng, LD. Zhang, J. Wang

& C. Guedes Soares

16h00 – 17h30
Session 1.6
Wave Loads
Room: 02.1
Chaired by: Joško Parunov

Environmental contours and extreme vertical wave bending moments of ships in the North Atlantic

A. Mikulić & J. Parunov

On the estimation of rogue wave loads on passenger ship superstructures

M. Acanfora, F. De Luca & R. Pasqua

A novel segmented model of container ship for wave-induced loads test

H.L. Si & X.L. Wang

Ship structural load modelling considering the temporal correlation of wave-induced load cycles

A. Kakaie & C. Guedes Soares

16h00 – 17h30
Session 2.6
Maritime Traffic Modelling 2
Room: 02.2
Chaired by: Bing Wu

Collision risk assessment in ship encounter scenarios using AIS trajectory data

E. Lotovskyi, H. Rong & A.P. Teixeira

Identifying collision avoidance behaviour in AIS data from a heavy traffic area

L. Zhang, P.F. Chen, Y. Luo, J.M. Mou

& C. Guedes Soares

Assessing deep learning methods for sea-surface multi object tracking from visible light video

Z.Y. Shao, Y. Yin, H.G. Lyu, S. Sun

& C. Guedes Soares

A novel Kino-dynamic RRT path planning algorithm considering ship maneuverability restrictions

H. Zhang, J.F. Zhang, J.J. Liu

& C. Guedes Soares

16h00 – 17h30
Session 3.6
Renewable Energy – Wind
Room: 02.3
Chaired by: Xiaoli Jiang

Research on mooring line design for a 12MW floating offshore wind turbine

D. Jeong, K. Kim, C. Shim & M.S. Kim

A numerical and experimental investigation on a repurposed FPSO with onboard wind turbine(s) in offshore West Africa

E.T. Boamah & Z.Q. Hu

Comparative study of 10 MW wind turbines on different semi-submersibles

Y.J. Hong & J.X. Yue

Floating offshore wind turbine motion prediction with neural network-integrated simulations

A. Medina-Manuel, A. Souto-Iglesias

& R. Molina Sanchez

Thursday, 16th May 2024

09h00 – 10h30
Session 1.7
Hydrodynamics – Manoeuvring 1
Room: 02.1
Chaired by: Serge Sutulo

Dynamic evolution of ship state prediction using adaptive unscented Kalman filtering in zigzag manoeuvring tests
A. Ghassemzadeh, H.T. Xu & C. Guedes Soares

System identification method of ship manoeuvring motion driven by knowledge and data
G.S. An, G. Xiang, X.B. Xiang & C. Guedes Soares

Assessment of the twin-ASD vessel maneuverability using a semi-empirical method
Y.Y. He, LY. Chen, QS. Zeng & S. Zhang

Ship manoeuvrability with heel motions
V. Ferrari, R. Tonelli, A.S. Kisjes, R. Hallmann & T. Gornicz

09h00 – 10h30
Session 2.7
Maritime Transportation 1
Room: 02.2
Chaired by: Tiago Santos

Uncertainty analysis of EEDI and bulk carrier conceptual design
Y. Garbatov & P. Georgiev

Platform-based marketplaces for sustainable logistic solutions in port ecosystems
O. Dinu, E. Rosca, A. Rusca, A. Ilie & V. Radu

Characterizing offshore supply operations in the North Sea
J.F. Oliveira, T.A. Santos & R.C. Botter

Economic feasibility of a short sea shipping route in Southern Africa
P.M. Batista Santos & T.A. Santos

09h00 – 10h30
Session 3.7
Aquaculture 1
Room: 02.3
Chaired by: Sarat Mohapatra

Sustainable fish farms and optimal use of the fish food
O.T. Gudmestad, B. Heidari & E. Yitzhak

Numerical study on the application of gravity cages on the coast of Algarve
Z.C. Liu, S. Ramos-Marin & C. Guedes Soares

Drag analysis in auxiliary ships used in artisanal fishing ships in Perú
D.O. Sagástegui & P.A. Flores

The invisible pollutant in water: Nanoplastics in seafood
Y.Z. Ahmed, M. Li, Y. Song, H. Amjad & M. Ali

09h00 – 10h30
Session 4.5
Structures - Technology
Room: 01.1
Chaired by: Rui Li

Optimization design and stability analysis of vehicle deck
Z.Q. Li, J.X. Yue & S.Q. Feng

Research on technologies of block lifting sequence optimization based on improved genetic algorithm
R. Li, Z.J. Xiao, QY. Zhang & X. Chen

Preliminary validation of an isogeometric MatLab code for cruise ship glazed openings
C. Chianese, F. Marmo & M. Acanfora

Initial structural analysis of a Portuguese 'Muleta' lateen mainsail yard
S.D. Viegas, L.S. Sutherland & P.H. Miller

11h00 – 12h30
Session 1.8
Hydrodynamics – Manoeuvring 2
Room: 02.1
Chaired by: Lúcia Moreira

Spherical asymptotic approximation of hull manoeuvring model

V. Ferrari, S. Sutulo & C. Guedes Soares

Autonomous ship maneuvering in instantiated environments using deep reinforcement learning

R. Zhang, X. Qin, M. Pan & S. Loughney

Setup, collection, and processing of manoeuvring full-scale sea trials data of Navy ships

P. Pires da Silva, S. Sutulo & C. Guedes Soares

Analysis of shear flow field in ship motion using numerical simulation method

H. Wang, J. Zhang & B. Mei

11h00 – 12h30
Session 2.8
Maritime Transportation 2
Room: 02.2
Chaired by: Tiago Santos

The potential of offshore charging in the Greek coastal shipping network - A GIS approach

A. Ziakas & M. Boile

Evaluating the impact of using smart equipment for preselecting cargo vehicles in the maritime port access area

A. Rusca, O. Dinu, F. Rusca, E. Rosca, M. Rosca & A. Ilie

Coordinated scheduling of multiple resources in multi-functional seaports

X.Y. Zhang, W.Q. Guo, J.J. Li, J.T. Wang & J. Lin

A bibliometric analysis on ship scheduling from 2000 to 2023

H.T. Zhu, ZY. Li & B. Wu

11h00 – 12h30
Session 3.8
Aquaculture 2
Room: 02.3
Chaired by: Gong Xiang

Numerical modeling of a steel-framed offshore fish cage: code development and verification

Y. Ma, L. Li, M.C. Ong & Z. Jiang

Preliminary study on the hydrodynamics of a bottom-supported aquaculture platform and net cage

J. Ji, L. Zhou, B. Liu & C. Guedes Soares

Numerical study on the effect of cage reinforcement on the behaviour of the circular gravity cage

Z.C. Liu & C. Guedes Soares

CFD simulation of a plane net in current

M.D. Viegas, S. Wang & C. Guedes Soares

11h00 – 12h30
Session 4.6
Structures - Composites
Room: 01.1
Chaired by: Leigh Sutherland

A graph neural network (GNN) based method of acoustic emission source localization for a composite panel

Z. Zhao, N.Z. Chen & C. Jiang

Durability of flax and glass fibre reinforced epoxy laminates for marine applications

J. Domingues, L.S. Sutherland & M. Garrido

Failure damage analysis of UHWMPE/PET foam sandwich structures under low-velocity impact (ORAL PRESENTATION)

B. Yang, D.M. Yang & K.K. Fu

Influence of the laminate stiffness on the slamming response of composite wedges

M. Calvário, S. Wang & C. Guedes Soares

Structural behaviour of a windsurfer fin

G. Bandeira, L.S. Sutherland & P.H. Miller

14h00 – 15h30
Session 1.9
Autonomous Ships
Room: 02.1
Chaired by: Haitong Xu

Thrust and structural analysis of an unmanned sailboat subject to omnidirectional winds
K.P. Rao, M. Tan, G. Xiang, X.B. Xiang & Y. Liu

Operational support framework for maritime autonomous surface ships under onshore operation centers
M. Adnan & L.P. Perera

Path following control of underactuated unmanned surface vessel using virtual circle guidance method
H.G. Zhang, J.M. Fan, X.K. Zhang, H.T. Xu & C. Guedes Soares

Navigational support framework for maritime autonomous surface ships under onshore operation centers
M. Adnan & L.P. Perera

14h00 – 15h30
Session 2.9
Maritime Transportation 3
Room: 02.2
Chaired by: Bing Wu

A novel ship berthing decision-making modelling based on random forest method
D. Han, Y. Wang, B. Wu & R. Xiong

Evaluation of technical and safety aspects of nitrogen use onboard tanker ships
G. Elidolu, Y. Arslanoglu & A.P. Teixeira

A complex network-based method for modelling and analyzing risk factors influencing maritime transport safety
C.P. Wan & B. Wu

Development of ICT networks in maritime transport applications
T. Neumann

14h00 – 15h30
Session 3.9
Ship Design
Room: 02.3
Chaired by: Manuel Ventura

Design of an ammonia bunker installation for sea-going vessels - A best worst method approach
P.C. Hofste, B.N. van Veldhuizen, M.B. Duinkerken & D.L. Schott

An analysis of the momentary sulfur emission peak of open-loop scrubbers applying the environmental index
E. Altarriba, T. Tanhuanpää & S. Rahiala

Conceptual design of a drone carrier
R. Pinto da Costa & M. Ventura

Modelling and simulation of a hydrogen-powered passenger catamaran ferry
L. Micoli, R. Russo, T. Coppola, V. Sorrentino, F. De Luca & C. Pensa

16h00 – 17h30
Session 2.10
Maintenance
Room: 02.2
Chaired by: Xiaoli Jiang

Predictive maintenance scheduling framework for offshore wind turbines based on condition monitoring: A review
J.B. Hes & X. Jiang

Gear fault data acquisition and diagnosis for ship rotating machinery
S.H. Kim, D.M. Kim, J.W. Jung, K.P. Park & S.J. Kim

Model predictive control framework for optimizing offshore wind O&M
M. Borsotti, R.R. Negenborn & X. Jiang

Determining the frequency of failure-finding tasks for ship critical systems based on the required availability
J. Sobral & C. Guedes Soares

A transformer-based fault detection framework for offshore wind turbines based on SCADA data
JY. Guo, Z.Y. Wang, H. Li & C. Guedes Soares

16h00 – 17h30

Session 3.10

Ship Machinery

Room: 02.3

Chaired by: Manuel Ventura

Evaluating alternative fuels and power systems for marine hybrid propulsion

L. Maloberti, G. Adami, M. Figari & R. Zaccone

Preliminary modeling of a ferry methanol fuel cell power plant by using AVL Cruise M software

V. Sorrentino, M. Altosole, F. De Luca, L. Micoli, L. Mocerino & R. Russo

Analysis of ships' performance in port: AIS, experimental campaign, and simulation

L. Mocerino & F. Quaranta

GreenH2CM-LiA7-PT1. Fuel-cell hybrid powertrains laboratory for maritime

A. Villalba-Herreros, R. d'Amore-Domenech, V.L. Meca, T.J. Leo & E. Posada

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Associated Event



WEGEMT Workshop

Strengthening the University Sector in Cooperation with Industry

17 May 2024, Congress Centre, 09h00-16h00

The objectives of the WEGEMT Workshop are:

- Develop actionable strategies for WEGEMT's future growth
- Identify key actions to empower universities and foster closer ties with industries.
- Cultivate dialogue among participants to exchange best practices.

Workshop for WEGEMT University members

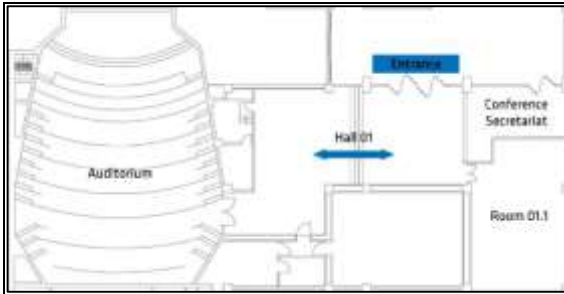
<https://www.wegemt.com/wegemt-associates/>

Register at <https://forms.gle/V2znZWwwru28bvBA6>

MARTECH 2024 Conference Venue

The technical sessions of the MARTECH2024 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.

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.



Holiday Inn Lisboa

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