

10th International Conference on Marine Structures

MARSTRUCT 2025

PROGRAMME



20 - 22 May 2025

**IST Congress Centre
LISBON, PORTUGAL**

ORGANISATION

Conference Chairman

Yordan Garbatov, Técnico Lisboa, Universidade de Lisboa, Portugal

Technical Programme Committee

- C. Guedes Soares, Técnico Lisboa, Portugal (Chair)
- E. Begovic, University of Naples- Federico II, Italy
- S. Benson, Newcastle University, UK
- H. den Besten, TU Delft, The Netherlands
- F. von Bock und Polach, Hamburg UT, Germany
- S. Boyd, University of Southampton, UK
- L. Brubak, DNV, Norway
- V. Crupi, University of Messina, Italy
- L. Domnisoru, Univ. "Dunarea de Jos", Galati, Romania
- S. Ehlers, Hamburg Univ. of Technology, Germany
- A. Ergin, Istanbul University of Technology, Turkey
- M. Gaiotti, University of Genova, Italy
- J. Garcia, Univ. Politécnica de Cataluña, Spain
- M. Hoogeland, TNO, The Netherlands
- S. Ince, Yildiz Technical University, Turkey
- ZQ. Hu, Newcastle University, UK
- P. Kaeding, University of Rostock, Germany
- J. Kozak, Gdansk University of Technology, Poland
- B. Leira, NTNU, Norway
- S. Malenica, Bureau Veritas, France
- H. Ocakli, Lloyd's Register, UK
- E. Oterkus, University of Strathclyde, UK
- J. Parunov, University of Zagreb, Croatia
- J. Prpic-Oršic, University of Rijeka, Croatia
- H. Remes, Aalto University, Finland
- J.W. Ringsberg, Chalmers Univ. of Techn., Sweden
- J. Romanoff, Aalto University, Finland
- H. Le Sourné, ICAM, School of Engineering, France
- K. Tabri, Tallinn University of Techn., Estonia
- N. Tsouvalis, National Techn. Univ. Athens, Greece

Advisory Board

- NZ. Chen, Tianjin University, P.R. China
- S.R. Cho, University of Ulsan, South Korea
- J. Choung, Inha University, South Korea
- M. Collette, University of Michigan, USA
- S. Estefen, Federal University of Rio de Janeiro, Brazil
- K. Iijima, Osaka University, Japan
- J. Jelovica, University of British Columbia, Canada
- D.K. Kim, Seoul National Univ., South Korea
- B. Liu, Wuhan University of Technology, P.R. China
- K. Liu, Jiangsu Univ. of Science and Techn., P.R. China
- L. Moro, Memorial University, Canada
- D. Wang, Shanghai Jiao Tong University, P.R. China
- X. Wang, American Bureau of Shipping, USA
- Y. Yamada, University of Tokyo, Japan
- N. Yamamoto, MIJAC from ClassNK, Japan
- L. Zhu, Wuhan University of Technology, P.R. China
- XQ. Zhou, Harbin Engineering University, P.R. China

Organising Committee

Ângelo Teixeira, Técnico Lisboa, Universidade de Lisboa, Portugal
José Manuel Gordo, Técnico Lisboa, Universidade de Lisboa, Portugal
Baiqiao Chen, Técnico Lisboa, Universidade de Lisboa, Portugal

Technical Programme & Conference Secretariat

Maria de Fátima Pina, Técnico Lisboa, Universidade de Lisboa, Portugal
Sandra Ponce, Técnico Lisboa, Universidade de Lisboa, Portugal
Sónia Vicente, Técnico Lisboa, Universidade de Lisboa, Portugal
Bárbara Azevedo, Técnico Lisboa, Universidade de Lisboa, Portugal
Mariana Mateus, Técnico Lisboa, Universidade de Lisboa, Portugal
José Nobre, Técnico Lisboa, Universidade de Lisboa, Portugal
Matilde Passanha, Técnico Lisboa, Universidade de Lisboa, Portugal

SCHEDULE AT A GLANCE

Tuesday, 20 May 2025		
Registration (Hall 01 – from 8h30 onwards)		
Instituto Superior Técnico – Congress Centre		
Opening Session – Auditorium (09h15-09h45) <i>President of IST, C. Guedes Soares and Yordan Garbatov</i>		
Plenary Lecture – Auditorium (09h45-10h30)		
<i>Coffee-break (10h30 – 11h00)</i>		
Plenary Lectures – Auditorium (11h00-12h30)		
<i>Lunch (12h30-14h00)</i>		
<i>Room 02.1</i>	<i>Room 02.2</i>	<i>Room 02.3</i>
<i>Session 1.1 (14h00-15h30)</i> Strength Assessment	<i>Session 2.1 (14h00-15h30)</i> Composite Structures	<i>Session 3.1 (14h00-15h30)</i> Wave Loads & Seakeeping
<i>Coffee-break (15h30-16h00)</i>		
<i>Session 1.2 (16h00-17h30)</i> Experimental Analysis of Structures	<i>Session 2.2 (16h00-17h30)</i> AI Models	<i>Session 3.2 (16h00-17h30)</i> Vibrations & Hydroelasticity
17h40 – MARSTRUCT Virtual Institute Meeting		
Wednesday, 21 May 2025		
Registration (Hall 01 – from 8h00 onwards)		
<i>Room 02.1</i>	<i>Room 02.2</i>	<i>Room 02.3</i>
<i>Session 1.3 (09h00-10h30)</i> Collision & Impact 1	<i>Session 2.3 (09h00-10h30)</i> Fatigue & Fracture 1	<i>Session 3.3 (09h00-10h30)</i> Structural Health Monitoring
<i>Coffee-break (10h30-11h00)</i>		
<i>Session 1.4 (11h00-12h30)</i> Collision & Impact 2	<i>Session 2.4 (11h00-12h30)</i> Fatigue & Fracture 2	<i>Session 3.4 (11h00-12h30)</i> Damage Assessment
<i>Lunch (12h30-14h00)</i>		
<i>Session 1.5 (14h00-15h30)</i> Collision & Impact 3	<i>Session 2.5 (14h00-15h30)</i> Fatigue & Fracture 3	<i>Session 3.5 (14h00-15h30)</i> Propellers
<i>Coffee-break (15h30-16h00)</i>		
<i>Session 1.6 (16h00-17h30)</i> Collision & Impact 4	<i>Session 2.6 (16h00-17h30)</i> Fatigue & Fracture 4	<i>Session 3.6 (16h00-17h30)</i> Sloshing of Liquefied Hydrogen
20h00 - Conference Dinner		
Thursday, 22 May 2025		
Registration (Hall 01 – from 8h00 onwards)		
<i>Room 02.1</i>	<i>Room 02.2</i>	<i>Room 02.3</i>
<i>Session 1.7 (09h00-10h30)</i> Ultimate Strength 1	<i>Session 2.7 (09h00-10h30)</i> Structural Design & Optimisation 1	<i>Session 3.7 (09h00-10h30)</i> Safety & Reliability 1
<i>Coffee-break (10h30-11h00)</i>		
<i>Session 1.8 (11h00-12h30)</i> Ultimate Strength 2	<i>Session 2.8 (11h00-12h30)</i> Structural Design & Optimisation 2	<i>Session 3.8 (11h00-12h30)</i> Safety & Reliability 2
<i>Lunch (12h30-14h00)</i>		
<i>Session 1.9 (14h00-15h30)</i> Ultimate Strength 3	<i>Session 2.9 (14h00-15h30)</i> Structural Design & Optimisation 3	<i>Session 3.9 (14h00-15h30)</i> MARSTRUCT Benchmark Studies
End of the MARSTRUCT 2025 Conference		

SESSIONS IN ALPHABETICAL ORDER

AI Models

Tuesday, 20/05/2025, Session 2.2,
16h00-17h30, Room: 02.2

Collision & Impact 1

Wednesday, 21/05/2025, Session 1.3,
09h00-10h30, Room: 02.1

Collision & Impact 2

Wednesday, 21/05/2025, Session 1.4,
11h00-12h30, Room: 02.1

Collision & Impact 3

Wednesday, 21/05/2025, Session 1.5,
14h00-15h30, Room: 02.1

Collision & Impact 4

Wednesday, 21/05/2025, Session 1.6,
16h00-17h30, Room: 02.1

Composite Structures

Tuesday, 20/05/2025, Session 2.1,
14h00-15h30, Room: 02.2

Experimental Analysis of Structures

Tuesday, 20/05/2025, Session 1.2,
16h00-17h30, Room: 02.1

Damage Assessment

Wednesday, 21/05/2025, Session 3.4,
11h00-12h30, Room: 02.3

Fatigue & Fracture 1

Wednesday, 21/05/2025, Session 2.3,
09h00-10h30, Room: 02.2

Fatigue & Fracture 2

Wednesday, 21/05/2025, Session 2.4,
11h00-12h30, Room: 02.2

Fatigue & Fracture 3

Wednesday, 21/05/2025, Session 2.5,
14h00-15h30, Room: 02.2

Fatigue & Fracture 4

Wednesday, 21/05/2025, Session 2.6,
16h00-17h30, Room: 02.2

MARSTRUCT Benchmark Studies

Thursday, 22/05/2025, Session 3.9,
14h00-15h30, Room: 02.3

Propellers

Wednesday, 21/05/2025, Session 3.5,
14h00-15h30, Room: 02.3

Safety and Reliability 1

Thursday, 22/05/2025, Session 3.7,
09h00-10h30, Room: 02.3

Safety and Reliability 2

Thursday, 22/05/2025, Session 3.8,
11h00-12h30, Room: 02.3

Sloshing of Liquefied Hydrogen

Wednesday, 21/05/2025, Session 3.6,
16h00-17h30, Room: 02.3

Strength Assessment

Tuesday, 20/05/2025, Session 1.1,
14h00-15h30, Room: 02.3

Structural Design & Optimisation 1

Thursday, 22/05/2025, Session 2.7,
09h00-10h30, Room: 02.2

Structural Design & Optimisation 2

Thursday, 22/05/2025, Session 2.8,
11h00-12h30, Room: 02.2

Structural Design & Optimisation 3

Thursday, 22/05/2025, Session 2.9,
14h00-15h30, Room: 02.2

Structural Health Monitoring

Wednesday, 21/05/2025, Session 3.3,
09h00-10h30, Room: 02.3

Ultimate Strength 1

Thursday, 22/05/2025, Session 1.7,
09h00-10h30, Room: 02.1

Ultimate Strength 2

Thursday, 22/05/2025, Session 1.8,
11h00-12h30, Room: 02.1

Ultimate Strength 3

Thursday, 22/05/2025, Session 1.9,
14h00-15h30, Room: 02.1

Vibrations & Hydroelasticity

Tuesday, 20/05/2025, Session 3.2,
16h00-17h30, Room: 02.3

Wave Loads & Seakeeping

Tuesday, 20/05/2025, Session 3.1,
14h00-15h30, Room: 02.3

Keynote Speakers



António Rodrigues Mateus

The transformation of the Navy's fleet for the XXI century

Rear-admiral António Mateus joined the Portuguese Navy in 1985 and was promoted to the present rank in 2023. He is a Naval Officer, a Naval Architect and a Marine Engineer, currently the Director of Ships, the strategic decision maker responsible for the through lifecycle management of all naval operational assets and means, ranging from submarines, surface warships, helicopters, weapons, ammo, unmanned vehicles, encompassing all phases, from its genetics (design, building, procurement and acquisition, etc.), to sustainment (maintenance, ILS, upkeep and upgrades), and disposal. Amongst other academic and professional qualifications and accreditations, he is a Chartered Engineer (CENG) by the Portuguese Order of Engineers, and holds a Master of Science in Naval Architecture from University College London, United Kingdom and a BSc in Marine Engineering from the Portuguese Naval Academy.



Joško Parunov

Benchmark studies on model uncertainties in wave load calculations

Joško Parunov is full professor and head of Chair of Ship Structures at University of Zagreb, Faculty of mechanical Engineering and Naval Architecture. From 2018 to 2022, he was Vice Dean for Research and Industry Cooperation of the Faculty of Mechanical Engineering and Naval Architecture. Since 2006, he was member of different committees of International Ship and Offshore Structure Congress (ISSC). Since 2024, he is member of the ISSC Standing Committee, and he is the chairman of the Standing Committee of the bi-annual Symposium Theory and Practice of Naval Architecture - SORTA. He is member of the editorial board of several journals in the field of marine engineering.



Ricardo Centeno

Maritime decarbonization status and its impacts in the industry

Ricardo Centeno, currently serves as a Project Officer for the Decarbonisation of Shipping within the Sustainability Unit at the European Maritime Safety Agency (EMSA) supporting the European Commission and Member States in implementing the 'Fit for 55' package, with a focus on MRV, ETS, and FuelEU regulations. He has over 20 years of experience in the maritime industry, covering roles from superintendent to technical director in ship management. He also worked in shipbuilding as a naval architect and had a short but interesting experience at a ship design company. Ricardo holds a degree in Naval Architecture and Marine Engineering from the Technical University of Lisbon and an M.Sc. in ship hydrodynamics from the University of Glasgow. Through his continuous professional and academic growth, he successfully earned an MBA from Universidade Católica Portuguesa. In addition to his industry experiences, he has lectured on Maritime Transport and Ports, as well as Composite Materials, at the Technical University of Lisbon.

DETAILED PROGRAMME

Tuesday, 20 May 2025

09h15 - 09h45

Opening Session Auditorium

Presided by:

President of IST
MARSTRUCT Virtual Institute Chairman
Conference Chairman

Opening Addresses

09h45 - 10h30

Keynote Lectures 1 Auditorium

Chaired by: C. Guedes Soares & Y. Garbatov

The transformation of the Navy's fleet for the XXI century

Antonio Rodrigues Mateus

11h00 - 12h30

Keynote Lectures 2 Auditorium

Chaired by: C. Guedes Soares & Y. Garbatov

Maritime decarbonization status and its impacts in the industry

Ricardo Centeno

Benchmark studies on model uncertainties in wave load calculations

Joško Parunov

14h00 - 15h30

Session 1.1 Strength Assessment Room 02.1

Chairs: Joonmo Choung & Baiqiao Chen

FE-analysis of steel-lightweight concrete-steel sandwich composite beams for marine structures

I.A. Fraga, M.R. Rita, A.B.C.G. Silva, E.M.R. Fairbairn, J.C.F. Telles, A. Landesmann & N.A. dos Santos Rizzo

Passenger ship global static response analysis implementing a modified higher-order shear element description

M.M. Imala, H. Naar & K. Tabri

Strength assessments of an IMO type C LCO2 cargo tank

J. Kim, J. Choung, K-S. Park & I.W. Cha

Numerical investigation of stub cold-formed steel-lipped channels with local web defects

L. Zhong, C. Jia, L.H. Guo, Y. Garbatov & B.Q. Chen

14h00 - 15h30

Session 2.1 Composite Structures Room 02.2

Chairs: Paul Miller & Leigh Sutherland

Telemetry torque measurement on composite material driveshafts

E.P. Bilalis, T.I. Mavrozoumis & N.G. Tsouvalis

Effects of seawater ageing on the impact and compression after impact response of glass/epoxy laminates

M. Calvário & C. Guedes Soares

Numerical determination of delamination driving properties of thermoplastic composites for naval structures

N.-E. Sanhen, M. Gaiotti & G. Vergassola

Torsional buckling analysis of composite material driveshafts

E.P. Bilalis & N.G. Tsouvalis

14h00 - 15h30

Session 3.1 Wave Loads & Seakeeping Room 02.3

Chairs: Joško Parunov & Shan Wang

Comparison of second-order wave loads on a floating cylinder WEC between NEMOH and ANSYS AQWA

T.P. Mazarakos

Impact of the compressive force on wave diffraction by a circular elastic floater for offshore aquaculture system

S.C. Mohapatra & C. Guedes Soares

Amended comparison of full-scale measurements and seakeeping calculation for research vessel motion in the Adriatic Sea

J. Parunov, T. Petranović, I. Catipović, M. Katalinić, H. Mihanović & J. Prpić-Oršić

Analysis of forward speed influence on vertical bending moment uncertainty in S175 containerships

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

16h00 – 17h30
Session 1.2
Experimental Analysis of Structures
Room: 02.1
Chairs: Vincenzo Crupi & José Gordo

Transfer path characterisation in the engine room of a Coast Guard vessel

R.R. Andrés & M.T. Larsson

Ultimate strength of plates with/without cut-outs under transverse compression

X. Chen, L. Zhu & S. Zhang

A modified scaling design method of a container ship under the bending moment considering the ultimate load-carrying capacity

LG. Zhang, HY. Ma, H.L. Ren & SL. Sun

Experimental investigation of container safety

C. Woitzik & F. von Bock und Polach

16h00 – 17h30
Session 2.2
AI Models
Room 02.2
Chairs: Xueqian Zhou & Lúcia Moreira

Comparison of a few deep learning models for stress predictions in stiffened panels

YC. Cai, N. Mokhtari & J. Jelovica

Virtual sensor for hull stress monitoring using artificial neural network

A. Tatsumi & K. Iijima

An explainable deep learning method for the prediction of the vertical wave bending moment
A. La Ferlita, O. El Moctar, T. Lindemann, P. Kaeding, E. Di Nardo & A. Ciaramella

Dynamic planning of cabin assembly sequence based on genetic-greedy algorithm

W.J. Qiu, K. Liu, X. Wan & B.Q. Chen

16h00 – 17h30
Session 3.2
Vibrations & Hydroelasticity
Room 02.3
Chairs: Lorenzo Moro & Shan Wang

Numerical simulations on the dynamic analysis of a large articulated floating circular platform

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

ABH-based metamaterial to reduce vibro-acoustic effects of underwater explosion: a preliminary study
G. Kyaw Oo D'Amore, G. Rognoni, M. Biot, J. Bardiani, A. Manes & J. Kašpar

Comparison between measured and predicted airborne noise sources on the external surface of a cruise ship

L. Mocerino, M. Viscardi, T. Gaggero, E. Rizzuto, D. Borelli, C. Schenone, F. Gaggero & E. Lembo

Numerical investigation on the hydrodynamic loads and hydroelastic response of bionic boat using CFD-FEA coupling method

M. Tan, SH. Yu, G. Xiang, XB. Xiang & C. Guedes Soares

Wednesday, 21 May 2025

09h00 – 10h30
Session 1.3
Collision & Impact 1
Room: 02.1
Chairs: Patrick Kaeding & Manolis Samuelides

A comparison of MCOL and CEL approach for ship-FOWT collision assessment
P.C. Abhemanyu, Y. Pyae Sone Oo, H. Le Sourne, P. Kaeding & T. Lindemann

Dynamic response investigation of an offshore wind turbine subjected to ship collisions
K.M. Papadopoulos, S. Fanourgakis & M. Samuelides

Dynamic analysis of monopile-supported offshore wind turbine affected by vessel collisions
A. Hammad, Z.Yu, E. Bachynski-Polić & G. Katsikogiannis

09h00 – 10h30
Session 2.3
Fatigue & Fracture 1
Room: 02.2
Chairs: Bernt Leira & Nianzhong Chen

Wind induced fatigue assessment of WAPS pedestal
G. Storhaug, J.P. Turøy & B. Leira

Peridynamic modelling of crack propagation in sandwich plate used in wind turbine blade
Y. Gao, T. Wang, Y. Luo & L. Li

Effect of hygrothermal environment on the fracture toughness of 2D woven composites
R. He, JH. Liu, HK. Wang, YJ. Zhao & YD. Gao

09h00 – 10h30
Session 3.3
Structural Health Monitoring
Room: 02.3
Chairs: Konstantinos Anyfantis & Nicolas Silionis

A novel condition-dependent conversion matrix approach for Structural Health Monitoring
G. Jagite, F.X. Sireta, I. Zilakos, G. Sagvolden, O.J. Hareide & L. Brubak

Predict the unpredictable: integrating human observations into SHM frameworks for combat naval platforms
J. Bardiani, A. Giglio, A. Manes & C. Sbarufatti

Quantifying the value of information for structural health monitoring of deteriorating ship hull structures
N.E. Silionis & K.N. Anyfantis

Sensor systems for ship’s hull structural health monitoring
R.R. Andrés, R. Habiyaemye, G. Stamatelatos, N. Angelopoulos, V. Kappatos, P. Becchi, I. Zilakos & C. Papadas

11h00 – 12h30
Session 1.4
Collision & Impact 2
Room: 02.1
Chairs: Sang-Rai Cho & Baiqiao Chen

Scale effects in the dynamic response of plates subjected to repeated impacts
X. He & C. Guedes Soares

Dynamic mechanical properties of hull plate-frame structures under impact load
S. Zong, ZL. Wang, K. Liu, Y. Lu, G. Wang & B.Q. Chen

A method for optimisation of parameters for load identification of impact load on stiffened plates
Y.S. Xu, X.Q. Zhou, H.Y. Ma, H.L. Ren & C. Guedes Soares

11h00 – 12h30
Session 2.4
Fatigue & Fracture 2
Room: 02.2
Chairs: Gaute Storhaug & Shen Li

Fatigue failure behaviour of corrugated plates under alternating tension loads
GJ. Shi, ZQ. Wang, D. Wang, HD. Zhang & WT. He

Fatigue strength assessment of stiffened welded tubular joints based on effective notch concept
D. Jiao, Y. Dong, H. Chen & Y. Garbatov

Digital twin-enhanced risk-based inspection for offshore structures considering fatigue cracks,
S. Li & F. Brennan

11h00 – 12h30

Session 3.4
Damage Assessment
Room: 02.3

Chairs: Jonas Ringsberg & Xueqian Zhou

Damage identification on a flat panel based on combined modal curvature indices

D. Dessi, F. Passacantilli & A. Venturi

Dynamic properties prediction in offshore structural health monitoring using nonlinear regression

N.F.M. Dzulkifli, N.I. Mohd Zaki, N.A. Mukhlas, M.K. Abu Husain, E. Mat Soom & G. Najafian

Development and performance study of fibre Bragg grating triaxial strain sensor

HQ. Xu, HY. Cui, TG. Yang, XY. Li & XR. Liu

Optimum period of structural health monitoring for ageing fixed offshore platforms

M.A.R. Zulkifli, M.K. Abu Husain, N.I. Mohd Zaki, N.F.M. Dzulkifli, N. Abu Husain, N.A. Mukhlas, E. Mat Soom & G. Najafian

14h00 – 15h30

Session 1.5
Collision & Impact 3
Room: 02.1

Chairs: Jonas Ringsberg & Kristian Tabri

Approach to account for external dynamics in fluid-structure interaction analysis in Abaqus

T. Sahk, M. K rgesaar & Z. Yu

Efficient crashworthy design of SMR-powered ship structures according to the strength-design philosophy

O.A.A. Al-Karawi, J.W. Ringsberg & P. Mottram Hogstr m

Structural integrity assessment for a containership with an ammonia fuel tank due to ship-to-ship collision

B. Wang & Y. Chen

14h00 – 15h30

Session 2.5
Fatigue & Fracture 3
Room: 02.2

Chairs: Norio Yamamoto & Yan Dong

Phase-field method-based fatigue crack propagation prediction for circumferential cracks in subsea pipelines

Y. Qu & N.Z. Chen

Structural stress fatigue assessments of butt-welded joints with thickness step

Y. Ono, M.S. Tariq, H. Remes & P. Lehto

Fatigue assessment by feeding back the results of stress measurements

N. Yamamoto, T. Sugimoto, K. Ishibashi, Y. Kawajiri & H. Takahashi

14h00 – 15h30

Session 3.5
Propellers
Room: 02.3

Chairs: Gaute Storhaug & Lorenzo Moro

Propeller-induced noise and vibration (PINOV):

A 5-year collaborative project

M. Islam, K. Brett, J. Williams, E. Kennedy, L. Moro, A. Jahanbakhsh, S. Islam, K. Al-Taiby, E. Cilkaya & H. Peng

Propeller-induced pressure distributions: an experimental model-scale study

A. Jahanbakhsh, L. Moro & M. Islam

Neural-reparameterized topology optimization of a tugboat thruster foundation for stress reduction and computational efficiency

SY. Yan & J. Jelovica

Mixed lubrication analysis of marine WLB considering misalignment and cavitation

Z. Chen, J. Wang, R. Li & Y. Liu

16h00 – 17h30

Session 1.6
Collision & Impact 4
Room: 02.1

Chairs: Ling Zhu & Kristian Tabri

Research on the design and crashworthiness optimisation of a ship fender based on a double-chamber airbag

Z.Y. Wang, K. Liu, Z.G. Gao & W.J. Qiu

Study on Collision Damage of Composite Sandwich Ship-Bridge Collision Protection Device

Y. Jin, J. Wang & K. Liu

Numerical investigation on dynamic behaviour of submersible shell structures under collision

X.G. Wang, J. Dong, T.T. Guo, J. Wang, Q.Y. Liang & L. Zhu

16h00 – 17h30
Session 2.6 Fatigue & Fracture 4 Room: 02.2
Chairs: Bernt Leira & Nianzhong Chen

Prediction of fatigue crack initiation location and orientation for subsea pipelines using cohesive zone model
Z.H. Song & N.Z. Chen

Local failure of a cracked subsea pipeline rehabilitated with a thin-walled HDPE liner with oval flaw under high temperature and pressure
Y. He, Z. Lei, Y. Pan, Q. Zhang, B. Wang, H. Wang, Z. Wang & Z. Guo

Assessment of creep-fatigue strength in welded titanium alloy pressure shells for deep-sea vehicles
Y. Guo, Y. Tang & G. Liu

16h00 – 17h30
Session 3.6 Sloshing of Liquefied Hydrogen (Oral Presentations only) Room: 02.3
Chairs: Yongwon Lee & Woorim Lee

Benchmark Study on Sloshing of Liquefied Hydrogen (Part I)
Y. Lee, N. Bakkers, Y.K. Kim, W.R. Lee, J.C. Park, S.M. Jeong, P. Mellacheruvu & K.K.J. Ranga Dinesh

Benchmark Study on Sloshing of Liquefied Hydrogen (Part II)
Y. Lee, N. Bakkers, Y.K. Kim, W.R. Lee, J.C. Park, S.M. Jeong, P. Mellacheruvu & K.K.J. Ranga Dinesh

Numerical Analysis of Sloshing in a Cryogenic Tank with Phase Change
W.R. Lee, S.K. Han & Y. Lee

Preliminary Simulation Study of Boil-Off Rate in Partially-Filled Cryogenic Tanks under Dynamic Sloshing Conditions
J.W. Kim, H.S. Kim & J.C. Park

Thursday, 22 May 2025

09h00 – 10h30

Session 1.7

Ultimate Strength 1

Room: 02.1

Chairs: Vincenzo Crupi & Patrick Kaeding

Numerical simulations and the effect of residual stresses in ultimate strength analysis of beams and plates

L. Brubak & Å. Bøe

Strength assessment of additive-manufactured honeycomb sandwich for marine structural applications

Y. Garbatov, S. Scattareggia Marchese, G. Briguglio, V. Crupi & G. Epasto

Experimental and numerical investigations of progressive collapse of ageing structures exposed to corrosion and locked cracks

K. Woloszyk & Y. Garbatov

09h00 – 10h30

Session 2.7

Structural Design and Optimisation 1

Room: 02.2

Chairs: Joonmo Choung & Tiago Santos

Practical ship structure optimisation for sustainable structures

M.L. Deul & K. Runge

Development of a unity check module in the time domain for the substructure of bottom-fixed offshore wind turbine

HS. Lee, J. Choung, D.J. Kim & S.K. Cho

Structural analysis and design of a composite Portuguese 'Muleta' lateen mainsail yard

L.S. Sutherland, S.D. Viegas & P.H. Miller

09h00 – 10h30

Session 3.7

Safety & Reliability 1

Room: 02.3

Chairs: Norio Yamamoto & Joško Parunov

Uncertainty on the buckling strength of laser-welded web-core sandwich panels subjected to uniaxial compression

M. Elsaka & C. Guedes Soares

Reliability Analysis of Deep-Sea Unmanned Equipment Launch and Recovery System

J. Li, Y. Liu & J. C. Kang

Recovery models for quantifying resilience of offshore wind farms

JG. Wu & C. Guedes Soares

Hydrodynamic performance and mooring reliability analysis of oscillating water column wave energy converter array system

S. Xu, K. Ju & C. Guedes Soares

11h00 – 12h30

Session 1.8

Ultimate Strength 2

Room: 02.1

Chairs: Lars Brubak & Chris Riley

Research on absorption and control of Lamb wave boundary echoes

H.M. Hu, H.Y. Cui, X.K. Yin, R. Ou & M.Y. Zhang

Overall collapse in structural analysis of damaged hull girders: Investigating causes and efficient prediction

C. Barry, C. Riley, J. Underwood & T. Harris

Evaluation of IACS design formulations for predicting hull girder ultimate strength

S.-H. Park, S.-M. Lee & S.-R. Cho

11h00 – 12h30

Session 2.8

Structural Design and Optimisation 2

Room: 02.2

Chairs: Ling Zhu & Tiago Santos

Innovative double bottom configuration for inland cruise vessels at Douro River

P.C. Santos, A. Miranda & T.A. Santos

Evaluation of lashing pot structures in RO-RO Ships using SLS and ULS criteria

J.C. Lee, J. Choung & IW. Cha

Design of dynamic power cable for floating offshore wind turbines in extreme environmental conditions

CS. Shim, M.S. Kim, KH. Kim & D. Jeong

11h00 – 12h30
Session 3.8 Safety & Reliability Room: 02.3
Chairs: Yordan Garbatov & Yan Dong

Risk assessment for liquid hydrogen marine transportation based on FMECA method
YM. Chen, SH. Hu, J. Li & J.C. Kang

Fatigue reliability of epoxy-based coatings on offshore pipeline welded joints under thermal cycles
YS. Cheng, Y. Dong, HL. Chen, X. Liu & Y. Garbatov

Uncertainties in fatigue assessments of ship structures: definitions and priorities
J.D. Rodenburg, C.H.H. van Battum & M.L. Deul

Time-dependent ship hull reliability accounting for non-stationary stochastic degradation process (ORAL PRESENTATION ONLY)
A. Kakaie

14h00 – 15h30
Session 1.9 Ultimate Strength 3 Room: 02.1
Chairs: Sang-Rai Cho & José Gordo

Numerical analysis of welding residual stress in subsea pipelines: Guidelines for experimental validation
P.M. Costa & B.Q. Chen

Effect of initial deflect on the ultimate buckling strength of the sandwich pipe
R. Li, ZX. Xiong & C. Guedes Soares

Prediction method of titanium alloy pressure hull collapse considering ductile damage
Y. Song, J. Han & G. Liu

14h00 – 15h30
Session 2.9 Structural Design and Optimisation 3 Room: 02.2
Chairs: Sarat Mohapatra & Sheng Xu

A review of developments, material and mechanics of floating inflatable membrane structures for marine applications
YL. Ye, J. Gan, HB. Liu, WG. Wu, S. Wang & C. Guedes Soares

Current load to the hydroelastic response of large interconnected floating platform using analytical approach
P. Amouzadrad, S.C. Mohapatra & C. Guedes Soares

Suction anchor design for a floating offshore wind turbine using CEL technique
H. Yoon, J. Choung, K-T. Bae & Y-H. Jeong

14h00 – 15h30
Session 3.9 MARSTRUCT Benchmark Studies Room: 02.3
Chairs: C. Guedes Soares

Benchmark on slamming loads in head seas for various ship hulls
Shan Wang & C. Guedes Soares

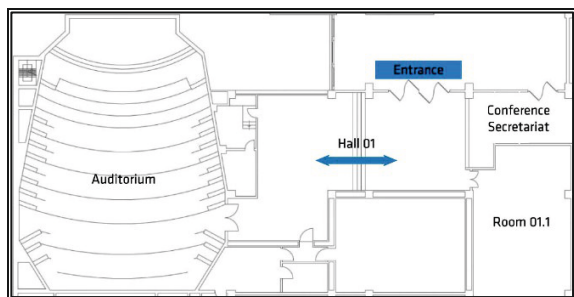
Evaluation of methods for ultimate strength analysis of stiffened plates
Lars Brubak

Presentation of ideas for new Benchmark studies
Open Floor

IMPORTANT INFORMATION:

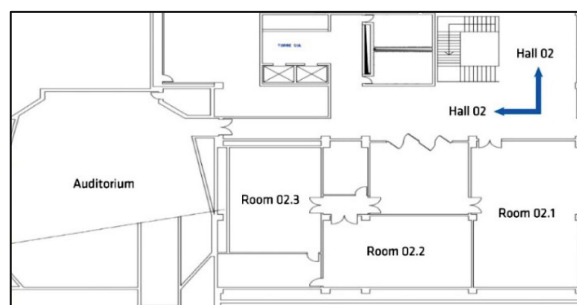
- The technical sessions of the MARSTRUCT 2025 Congress **will take place at IST's Congress Centre** located at the Alameda Campus, on the Lower Ground Level 01 and Level 02 of the Civil Engineering Building.
- The timetable is settled taking into consideration the **Time Zone Lisbon/London time**

IST's Congress Centre

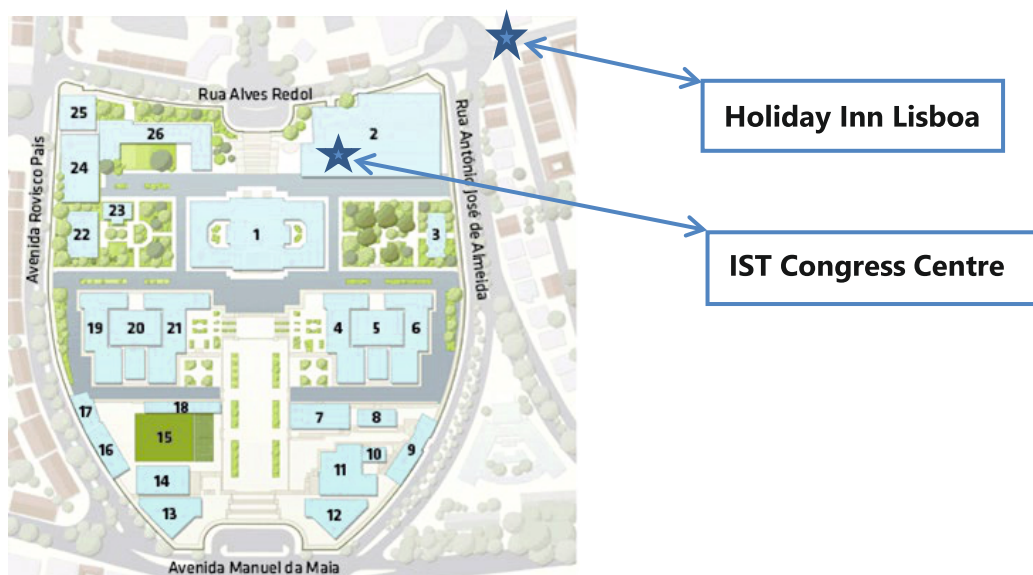


**Lower Ground
Level 01**

**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.



Guidelines for presentations, questions and answers

- The timeslot available for each paper presentation varies between 20 and 30 minutes depending on the session. Presenters will either have 15 minutes for the presentation and 5 minutes for Questions & Answers, or 20/25 minutes for the presentation and 5/10 minutes for Questions & Answers.
- Please ensure that you check the timetable and identify the session your paper is scheduled for, making sure that you know the timeslot available for your presentation.
- Make sure you follow the timetable set out in the programme and the order of presentations.

Additional information:

Wireless Access:

Network: **TECNICO-GUEST**

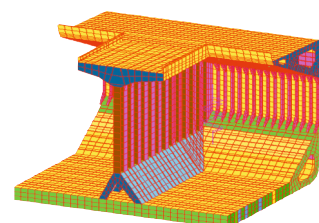
Account name: **MARSTRUCT2025**

Password: **t8nkS7**

Organised by:



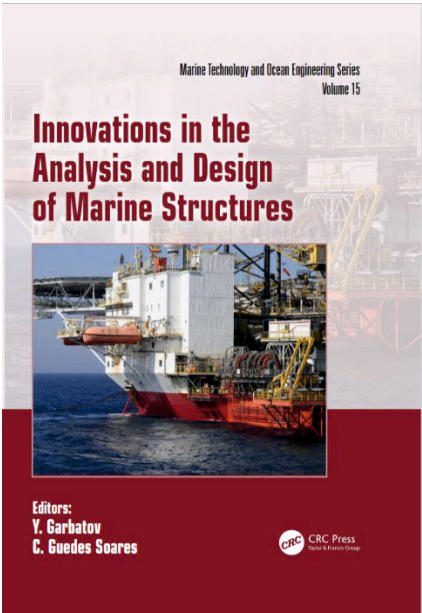
Promoted by:



MARSTRUCT
VIRTUAL INSTITUTE

Notes

Proceedings of MARSTRUCT 2025
10th International Conference on Marine Structures
20-22 May 2025, Lisbon, Portugal



Previous Editions:

