



TÉCNICO
LISBOA



6th International Conference on Renewable Energies Offshore

RENEW 2024 PROGRAMME



19 - 21 November 2024

**IST Congress Centre
LISBON, PORTUGAL**

ORGANISATION

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SCHEDULE AT A GLANCE

Tuesday, 19 November 2024		
Registration (Hall 01 – from 8h00 onwards)		
Instituto Superior Técnico – Congress Centre		
Opening Session – Auditorium (09h00-09h30) Secretary of State for Energy, President of IST and C. Guedes Soares		
Plenary Lectures – Auditorium (09h30-11h00)		
Coffee-break (11h00 – 11h30)		
<i>Room 02.1</i>	<i>Room 02.2</i>	<i>Room 02.3</i>
Session 1.1 (11h30-13h00) Wave Energy 1	Session 2.1 (11h30-13h00) Wind Energy 1	Session 3.1 (11h30-13h00) Resource Assessment 1
Lunch (13h00-14h30)		
<i>Room 02.1</i>	<i>Room 02.2</i>	<i>Room 02.3</i>
Session 1.2 (14h30-16h00) Wave Energy 2	Session 2.2 (14h30-16h00) Wind Energy 2	Session 3.2 (14h30-16h00) Resource Assessment 2
Coffee-break (16h00-16h30)		
Session 1.3 (16h30-18h00) Wave Energy – Verification & Validation	Session 2.3 (16h30-18h00) Wind Energy 3	Session 3.3 (16h30-18h00) Probabilistic Models
18h00 - Welcome Reception		
Wednesday, 20 November 2024		
Registration (Hall 01 – from 8h00 onwards)		
<i>Room 02.1</i>	<i>Room 02.2</i>	<i>Room 02.3</i>
Session 1.4 (09h00-10h30) Wave Energy – OWC	Session 2.4 (09h00-10h30) “INFINITY” Project 1	Session 3.4 (09h00-10h30) Photovoltaic Energy
Coffee-break (10h30-11h00)		
Session 1.5 (11h00-12h30) Wave Energy – Farms	Session 2.5 (11h00-12h30) “INFINITY” Project 2	Session 3.5 (11h00-12h30) Tidal Energy
Lunch (12h30-14h00)		
Session 1.6 (14h00-15h30) Wave Energy – PTO Design	Session 2.6 (14h00-15h30) Multi-purpose platforms 1	Session 3.6 (14h00-15h30) Modelling and Control 1
Coffee-break (15h30-16h00)		
Session 1.7 (16h00-17h30) AI Models	Session 2.7 (16h00-17h30) Multi-purpose platforms 2	Session 3.7 (16h00-17h30) Modelling and Control 2
20h00 - Conference Dinner		
Thursday, 21 November 2024		
Registration (Hall 01 – from 8h00 onwards)		
<i>Room 02.1</i>	<i>Room 02.2</i>	<i>Room 02.3</i>
Session 1.8 (09h00-10h30) Moorings and Floaters 1	Session 2.8 (09h00-10h30) Power Cables	Session 3.8 (09h00-10h30) Economics and energy policy
Coffee-break (10h30-11h00)		
Session 1.9 (11h00-12h30) Moorings and Floaters 2	Session 2.9 (11h00-12h30) Hydrogen Offshore 1	Session 3.9 (11h00-12h30) Materials and structural design
Lunch (12h30-14h00)		
Session 1.10 (14h00-15h30) Moorings and Floaters 3	Session 2.10 (14h00-15h30) Hydrogen Offshore 2	Session 3.10 (14h00-15h30) Vessels
End of the RENEW 2024 Conference		

SESSIONS IN ALPHABETICAL ORDER

AI Models - Wednesday, 20/11/2024, Session 1.7, 16h00-17h30, Room: 02.1

Economics and Energy Policy - Thursday, 21/11/2024, Session 3.8, 09h00-10h30, Room: 02.3

Hydrogen Offshore 1 - Thursday, 21/11/2024, Session 2.9, 11h00-12h30, Room: 02.2

Hydrogen Offshore 1 - Thursday, 21/11/2024, Session 2.10, 14h00-15h30, Room: 02.2

"INFINITY" Project 1 - Wednesday, 20/11/2024, Session 2.4, 09h00-10h30, Room: 02.2

"INFINITY" Project 2 - Wednesday, 20/11/2024, Session 2.5, 11h00-12h30, Room: 02.2

Materials and Structural Design - Thursday, 21/11/2024, Session 3.9, 11h00-12h30, Room: 02.3

Modelling and Control 1 - Wednesday, 20/11/2024, Session 3.6, 14h00-15h30, Room: 02.3

Modelling and Control 2 - Wednesday, 20/11/2024, Session 3.7, 16h00-17h30, Room: 02.3

Moorings and Floaters 1 - Thursday, 21/11/2024, Session 1.8, 09h00-10h30, Room: 02.1

Moorings and Floaters 2 - Thursday, 21/11/2024, Session 1.9, 11h00-12h30, Room: 02.1

Moorings and Floaters 3 - Thursday, 21/11/2024, Session 1.10, 14h00-15h30, Room: 02.1

Multi-purpose platforms 1 - Wednesday, 20/11/2024, Session 2.6, 14h00-15h30, Room: 02.2

Multi-purpose platforms 2 - Wednesday, 20/11/2024, Session 2.7, 16h00-17h30, Room: 02.2

Opening Session - Tuesday, 19/11/2024, 09h00-09h30, Auditorium

Plenary Lectures - Tuesday, 19/11/2024, 09h30-11h00, Auditorium

Photovoltaic Energy - Wednesday, 20/11/2024, Session 3.4, 09h00-10h30, Room: 02.3

Power Cables - Thursday, 21/11/2024, Session 2.8, 09h00-10h30, Room: 02.2

Probabilistic Models - Tuesday, 19/11/2024, Session 3.3, 16h30-18h00, Room: 02.3

Resource Assessment 1 - Tuesday, 19/11/2024, Session 3.1, 11h30-13h00, Room: 02.3

Resource Assessment 2 - Tuesday, 19/11/2024, Session 3.2, 14h30-16h00, Room: 02.3

Tidal Energy - Wednesday, 20/11/2024, Session 3.5, 11h00-12h30, Room: 02.3

Vessels - Thursday, 21/11/2024, Session 3.10, 14h00-15h30, Room: 02.3

Wave Energy 1 - Tuesday, 19/11/2024, Session 1.1, 11h30-13h00, Room: 02.1

Wave Energy 2 - Tuesday, 19/11/2024, Session 1.2, 14h30-16h00, Room: 02.1

Wave Energy - Farms - Wednesday, 20/11/2024, Session 1.5, 11h00-12h30, Room: 02.1

Wave Energy - OWC - Wednesday, 20/11/2024, Session 1.4, 09h00-10h30, Room: 02.1

Wave Energy – PTO Design - Wednesday, 20/11/2024, Session 1.6, 14h00-15h30, Room: 02.1

Wave Energy – Verification & Validation - Tuesday, 19/11/2024, Session 1.3, 16h30-18h00, Room: 02.1

Wind Energy 1 - Tuesday, 19/11/2024, Session 2.1, 11h30-13h00, Room: 02.2

Wind Energy 2 - Tuesday, 19/11/2024, Session 2.2, 14h30-16h00, Room: 02.2

Wind Energy 3 - Tuesday, 19/11/2024, Session 2.3, 16h30-18h00, Room: 02.2

DETAILED PROGRAMME

Tuesday, 19 November 2024

09h00 - 09h30
Opening Session Auditorium
Presided by: Secretary of State for Energy President of IST Conference Chairman

Opening Addresses

09h30 - 11h00
Plenary Lectures Auditorium
Chaired by: C. Guedes Soares

- WindFloat Atlantic – Construction and Operation
Marta Paulino Branco
- CorPower Ocean: Wave Power to Power the Planet
Eduardo Pacheco
- WaveRoller Technology Development, Testing and Qualification
Christopher Ridgewell
- Floating photovoltaic projects in the Alqueva Dam
José Pedro Salema

11h30 - 13h00
Session 1.1 Wave Energy 1 Room 02.1
Chairs: S. Mavrakos & T. Ikoma

- Hydrodynamic optimization of flap width of oscillating surge wave energy converter for near-shore wave energy extraction
J. Samuel & M. Karimirad
- Simulating flexible flap wave energy converters: A comprehensive approach
F. Carapellese, B. Paduano, E. Pasta, M. Glorioso & N. Faedo

- Experimental motion measurements of a floating dual-chamber OWC using the smartphone sensors as a low budget solution
J. Gadelho, C. Guedes Soares, M. Hashemzadeh, K. Rezanejad, G. Anastas, I. López & R. Carballo
- Preliminary results of the experimental assessment of the SWINGO wave energy system
E. Pasta, F. Carapellese, B. Paduano, M. Glorioso, G. Papini, N. Faedo, G. Mattiazzo & P. Lomonaco

11h30 - 13h00
Session 2.1 Wind Energy 1 Room 02.2
Chairs: C. Michailides & E. Loukogeorgaki

- Long-term analysis of the scour evolution around a jacket OSS
J. Sarmiento, S. Fernández, R. Guanche & I.J. Losada
- OWT on fixed foundations in shallow waters: seabed activity and metocean influence early design choices
R. Bruschi, D.M.L. Silva & A. Bollini
- Size optimization of a tripod-shaped support structure for weight-efficient offshore wind turbines
J. Lee, H. Johansson, P.T. Piironen, W. Mao & J.W. Ringsberg
- Multi-scale study of a vertical axis wind turbine wake
S. Querat, M. Träsch, B. Augier, V. Perier, M. Minguez, A. Delon & S. Barre

11h30 - 13h00
Session 3.1 Resource Assessment 1 Room 02.3
Chairs: G. Giorgi & V. Venugopal

- Wave energy assessment in two small Aegean islands in Greece
T.H. Soukissian & N.E. Koutri
- Persistence of wave and wind storm conditions in Fuerteventura
G. Clarindo & C. Guedes Soares

The evaluation of offshore wind climate in Greece using the CERRA reanalysis dataset

T.H. Soukissian & N.E. Koutri

Optimal geometry of a heaving point absorber considering an evolving Irish wave climate

N. Martinez-Iturricastillo, A. Ermakov, J.V. Ringwood & A. Ulazia

14h30 - 16h00

Session 1.2

Wave Energy 2

Room: 02.1

Chairs: *M. Karimirad & L. Cappietti*

Extension of HAMS with the generalized modes approach

V. Raghavan, A.V. Metrikine, G. Lavidas, T. Islam & V. Venugopal

Capturing wave energy converter's extreme response: experimental validation of DualSPHysics and STAR CCM+
O. Dell'Edera, F. Niosi, S. Capasso, I. Martínez-Estévez & B. Tagliafierro

Verification of constrained multi-body motion in MoodyMarine

J. Palm, G. Verao Fernandez & C. Eskilsson

Open data for extreme load investigation on cylinder buoys under regular and focused waves
(ORAL PRESENTATION)

B. Tagliafierro, A. Marzeddu, C. Altomare, X. Gironella, J. Sospedra, A. Crespo, M. De Castro & M. Gómez-Gesteira

14h30 - 16h00

Session 2.2

Wind Energy 2

Room 02.2

Chairs: *A. Souto-Iglesias & E. Uzunoglu*

Dynamics of a novel shallow-draft concept of Floating Offshore Wind Turbine

A. Terrero-Gonzalez, R.D. Neilson, M. Kapitaniak, S. Dai & J. Papadopoulos

Numerical model for 6 DoF dynamics of offshore floating wind turbines: a code-to-code comparison between OpenFAST and MOST

E. Petracca, D. Issoglio, M. Sirigu, G. Giorgi & G. Bracco

Validation and hydrodynamic performance assessment of the CENTEC-TLP supporting a 10 MW turbine under wave loads

H.S. Abdelwahab & C. Guedes Soares

China's Offshore Wind: Technological Innovations in Industry Evolution (ORAL PRESENTATION)

R. Zhu

14h30 - 16h00

Session 3.2

Resource Assessment 2

Room 02.3

Chairs: *T.H. Soukissian & G. Giorgi*

Location selection for metocean analysis supporting floating offshore wind farms development in the Aegean Sea

C. Michailides, E. Loukogeorgaki & D. Vagiona

Interpolation techniques: A possible way to bypass offshore resource assessment limitations?

L. Gambarelli, E. Pasta & G. Giorgi

On the temporal sensitivity of the reference data in bias correction techniques for improving metocean datasets

F. Callea, A. Martinez-Perurena, A. Zarketa-Astigarraga, M. Penalba, G. Cervelli, G. Giorgi, B. Robertson & G. Iglesias

Improved wave forecast using artificial intelligence model

L. Zhang, W.Y. Duan, L.M. Huang & C. Guedes Soares

16h30 - 18h00

Session 1.3

Wave Energy - Verification & Validation

Room: 02.1

Chairs: *K. Nielsen & C. Eskilsson*

Experimental test round of the DTU Oscillating Water Column for the OES working group on wave energy modelling

B. Joensen, H.B. Bingham, R.W. Read & K. Nielsen

High-fidelity numerical wave tank verification & validation study: Wave generation through paddle motion

T.T. Tran, B.J. Meuris, C. Chartrand, J. Davidson, J. Andersen, C. Eskilsson, M.B. Kramer, G. Papadakis & K. Nielsen

Verification & validation of CFD simulations of a fixed oscillating water column with one- and two-way absorption

C. Eskilsson

Numerical modelling of the DTU-OWC wave energy device - COER solution

H.A. Said, J.V. Ringwood & T. Kelly

16h30 – 18h00

Session 2.3
Wind Energy 3
Room: 02.2

Chairs: F. Adam & M. Penalba

Calibration of floating offshore wind turbine experimental models using a novel workbench apparatus

J.F. Gaspar, F.P. Santos, C. Guedes Soares, M.J.G.C. Mendes, J.P. Gonçalves & D.V. Agostinho

Horizontal and vertical axis wind turbines: impacts on the dynamics of a floating wind system

A. Ghigo, B. Paduano, G. Giorgi & G. Bracco

Pitch motion suppression in floating platforms with flywheel mechanism: concept and model

M. Costa, A. Bertolin, J. Gadelha, E. Nepomuceno & J. Santos

Numerical validation of a DeepCwind floating platform with inclined taut-legs under regular waves using the SPH method

B. Tagliafierro, S. Capasso, G. Viccione, O. Dell'Edera, F. Niosí, I. Martínez-Estévez, J. Domínguez, M. Göteman & M. Karimirad

16h30 – 18h00

Session 3.3
Probabilistic Models
Room 02.3

Chairs: C. Michailides & P.R. Thies

Wave period uncertainties and their propagation into wave energy absorption assessment

M. Göteman & M. Lindberg

Modeling sea waves accounting for serial correlations and seasonal effects for the Aguçadoura offshore site test

G. Clarindo, C. Guedes Soares & E. Vanem

Failure mechanisms and reliability factors for submarine cable failures

M. Ahmad, P.R. Thies, M. Recker & T. Dawood

Failure data characterization of offshore wind turbines

U. Bhardwaj, H. Li & C. Guedes Soares

Wednesday, 20 November 2024

09h00 – 10h30

Session 1.4
Wave Energy - OWC
Room: 02.1

Chairs: T. Ikoma & T.P. Mazarakos

Numerical simulation of an OWC-type wave energy converter with projecting walls in regular waves
L. Tan, R.Y. Chang & T. Ikoma

Hydrodynamic efficiency and loads analysis on a parabolic breakwater-coupled oscillating water column wave energy converter
Y. Zhou & D. Ning

Hydrodynamic modeling of OWC and U-OWC wave energy converters using the SPH method
B. Mina, I. Martínez-Estévez, M. Gómez-Gesteira, B. Tagliafierro, C. Altomare, G. Malara & F. Arena

Numerical simulations evaluating the influence of different geometric features in the pneumatic efficiency of OWC devices
D. Arias, J. Gadelho & C. Guedes Soares

09h00 – 10h30

Session 2.4
“INFINITY” Project 1
Room: 02.2

Chairs: G. Vero Fernandez & C. Windt

Integrated designs for future floating offshore wind farm technology - Towards nature inclusive innovations

C. Windt, N. Goseberg, S. Schimmels, H. Rusche, F. Adam, W. Swidzinski, K. Kazimierowicz-Frankowska, V.S.O. Kirca, B.M. Sumer, T.U. Petersen, N. Rojas, M. Penalba, G. Bracco, G. Giorgi, P. Troch, M. Streicher, E. Halvorsen-Weare, H. Braaten, E.D. Christensen & J.N. Sorensen

GICON's 5th generation TLP: A sustainable powerhouse for Europe's seas
V.K. Vanjakula, J. Wahrendorf, E. Hlawatch, R. Kaden & F. Adam

Towards the design of artificial surrogates for modelling marine growth
H. Busch, N. Goseberg, C. Windt, B. Andersson & M. Isaeus

Sensitivity analysis of major replacement rates and costs for floating wind farms
M. Centeno-Telleria, B. Jenkins, J. Carrol, J.I. Aizpurua & M. Penalba

09h00 – 10h30

Session 3.4
Photovoltaic Energy
Room: 02.3

Chairs: M. Karimirad & S. Wang

Environmental conditions for deploying offshore floating solar photovoltaic energy installations
G.A. Abdelghany & C. Guedes Soares

Experimental assessment of a semi-submersible floating solar platform subjected to wave and wind loading
M. Campbell, G. Baruah, M. Karimirad, M. Van & V. Pakrashi

Wave force characteristics of fixed photovoltaic pile structures under multi-directional irregular waves
H.C. Zhang, G. Li, J. Geng, X.L. Zhao, S.X. Liu & J.X. Li

Harnessing synergy: Integrating floating solar systems in Arklow Wind Farm's next phase
E. McVeigh, G. Baruah & M. Karimirad

11h00 – 12h30

Session 1.5
Wave Energy - Farms
Room: 02.1

Chairs: M. Göteman & E. Loukogeorgaki

Mean second-order wave drift forces of an array of truncated cylinders in front of different-shape vertical wall
T.P. Mazarakos

Enhancing synergy for power generation and coastal protection through wave energy converters
B. Battisti, G. Giorgi & G. Vero Fernandez

Comprehensive multi-objective optimisation of wave power parks
K. Bergström & M. Göteman

Continuing the WEC Farm project: Experimental comparison of wave excitation estimation techniques in non-linear conditions
L. Cromheeke, T. Vervae, L. Devloo, V. Stratigaki & P. Troch

11h00 – 12h30

Session 2.5

“INFINITY” Project 2

Room: 02.2

Chairs: C. Windt & G. Verao Fernandez

Time domain optimisation of self-stable and on-site installation concepts of TLP

M. Sirigu, E. Petracca, G. Giorgi & G. Bracco

Benchmarking a BEM numerical model for a floating wind platform dynamics in Chilean offshore conditions

A. Gallardo, M. Streicher, P. Troch, J. Ahumada, C. Cifuentes & G. Tampier

Modular, standardised, scalable and production-optimized floating platform design

S.H. Bahrololoum, R. Klemenzenz, H. Hartmann, F. Adam & J. Großmann

Perspectives on design of floating platforms for offshore airborne wind energy systems

A. Bertozzi, F. Niosi, B. Paduano & X. Jiang

11h00 – 12h30

Session 3.5

Tidal Energy

Room: 02.3

Chairs: L. Chatellier & G. Pinon

Optimization of tidal turbine blades

M. Biçakli, N. Razaaly & L. Chatellier

Anisotropic local effects and turbine interference on a utility-scale multi-rotor tidal energy system

X. Chen, B. Msutwana & R.H.J. Willden

Flexible operation of tidal barrages for demand-matching generation: a case study in the La Rance power plant

A. Skiarski, J.V. Ringwood & N. Faedo

Analysis on heave motion of floating tidal stream turbine using actuator line method

C. Li, Y. Zhang, W. Zang, C. Feng, Y. Zheng & E. Fernandez-Rodriguez

14h00 – 15h30

Session 1.6

Wave Energy – PTO Design

Room: 02.1

Chairs: J.W. Ringsberg & J.F. Gaspar

A comparison of approaches integrating power take-off systems into wave energy converters simulations

X. Shao, J.W. Ringsberg, H-D. Yao, E. Johnson, J. Forsberg, S. Zeinali, J. Lindström & M. Wiktorsson

Optimum design of gearbox ratio for the electrical drive train of hinged-type wave energy converters

Z. Liao, J. Apsley, P.K. Stansby & G.Q. Li

Exploring dwell time stability in active mechanical motion rectifier based power take-off systems

P. Fornaro, P.F. Puleston & J.V. Ringwood

Hybrid testing of a telescopic pump for pressurized water power-take off

C. Eskilsson, F. Ferri, J.P. Waldbjørn, M.B. Rode, G. Lang, K. Hrkać, F. Holzinger, T.V. Lukassen, K. Glejbøl & S.G. Thomsen

14h00 – 15h30

Session 2.6

Multi-purpose platforms 1

Room: 02.2

Chairs: L. Cappietti & X.L. Zhao

Review of wave energy converter design for offshore hybrid platforms

J.F. Gaspar, T.S. Hallak, C. Guedes Soares, M.M.G. Costa & E. Nepomuceno

Hydrodynamic analysis of a wind energy platform with attached point absorbers

R. L'Hermite, T.S. Hallak & C. Guedes Soares

Concurrent wind, wave and solar power at a recirculating aquaculture system

G. Ayuso-Virgili, D.R. Lande-Sudall & N. Lümmen

Hydrodynamic analysis of a power take-off damped floating break water in front of the coast

Z.G. Wang, Y. Zhou, X.L. Zhao, J. Geng & C. Guedes Soares

14h00 – 15h30

Session 3.6

Modelling and Control 1

Room: 02.3

Chairs: M. Penalba & M. Mendes

The effects of sea-state on optimal generator parameters for a wave energy converter

S. Zeinali, M. Wiktorsson, J. Lindström, G. Lindgren, J. Forsberg, X. Shao & J.W. Ringsberg

Hybrid offshore wind turbines: control-oriented modeling approaches

I. Ahmad, F. M'zoughi, P. Aboutaleb, I. Garrido & A.J. Garrido

Takagi-Sugeno fuzzy modelling for wave energy converters

J.V. Ringwood, M. Farajvand & D. García-Violini

Efficient wave energy converter optimisation via control co-design: a comparison of AI-based algorithms
Y. Peña-Sanchez, M. Centeno-Telleria, A. Zarketa-Astigarraga, M. Penalba, D. García-Violini, N. Faedo & J.V. Ringwood

16h00 – 17h30
Session 1.7 AI Models Room: 02.1
Chairs: <i>M. Göteman & L. Moreira</i>

Experimental study and surrogate modeling of a scaled eddy current power-take-off
A. Dupuis, Z. Shahroozi & J. Engström

Mapping complex time series using LSTM neural networks: A case study on wave energy conversion farms
C. Stavropoulou, E. Katsidoniotaki, N. Faedo & M. Göteman

Machine learning algorithms to use in the development of maintenance strategies for wind turbines
J. Sobral, N. Datia, M. Pato & C. Guedes Soares

Advancements in predicting maritime structure dynamics using neural networks
N. Martzikos, C. Ruzzo, G. Malara & F. Arena

16h00 – 17h30
Session 2.7 Multi-purpose platforms 2 Room: 02.2
Chairs: <i>X.L. Zhao & J.F. Gaspar</i>

Compact hybrid omni-directional wind-wave-solar platforms for range of capacities
P.K. Stansby & G.Q. Li

Experimental investigation of a novel modular multi-purpose floating structure concept
F. Giorcelli, F. Niosi, M. Glorioso, B. Paduano & S.A. Sirigu

Oblique wave interaction with an integrated wave energy extraction system
S.C. Mohapatra & C. Guedes Soares

Numerical modelling of floating wind-wave platforms
T.S. Hallak, J.F. Gaspar & C. Guedes Soares

16h00 – 17h30
Session 3.7 Modelling and Control 2 Room: 02.3
Chairs: <i>M. Penalba & H.T. Xu</i>

Voltage and power control for distributed generation units in islanded microgrids
T. Bagheri Rouch, F. M'zoughi, P. Aboutalebi, I. Ahmad, A.J. Garrido & I. Garrido

Dual neural controller for maximum rotor efficiency of offshore wind turbines
E. Muñoz-Palomeque, J.E. Sierra-García & M. Santos

Health aware control of wave energy converters: Possibilities and challenges
A. Ziaei, H.A. Said & J.V. Ringwood

Thursday, 21 November 2024

09h00 – 10h30

Session 1.8
Moorings and Floaters 1
Room: 02.1

Chairs: P. Stansby & L. Johannning

OrcaFlex model verification: Assessing mooring effects on the M4 wave energy converter

C. Zhao, L. Johannning & P. Stansby

Design optimisation of floating offshore wind turbine mooring systems

C. MacNamara, M. Kapitaniak, P. Dunning, A. Karadimos, D. Milano & C. Crawford

Trenching of mooring lines using a discrete element method approach

G. Vero Fernandez, F. Ferri, C. Eskilsson, B. Tagliaferro & J. Palm

Influence of mussel growth on mooring line drag coefficients in uniform currents

N. Emamdoost, F. Schoefs, M. Maduka, J.C. Thomas & K. Thiagarajan

09h00 – 10h30

Session 2.8
Power Cables
Room: 02.2

Chairs: P.R. Thies & J.W. Ringsberg

Submarine power cables: A literature study on finite element analysis

A. Arham, P.R. Thies, A.C. Pillai & S. Koumlis

Sensitivity of small-scale global models of dynamic power cables to model material properties

A. Holcombe, M. Hann, S. Brown, S. Cheng, R. Rawlinson-Smith & R. Nicholls-Lee

Sensitivity analysis of the response of a scaled power cable for application in offshore renewable energy

F. Khalid, P.R. Thies, R. Moideen, V. Venugopal, R. Badhurshah & N. Srinil

Hydrodynamic forces on a lazy wave dynamic power cable

R. Moideen, V. Venugopal & A.G.L. Borthwick

09h00 – 10h30

Session 3.8
Economics and Energy Policy
Room: 02.3

Chairs: G. Lavidas & B.S. Yeter

Evaluating feasibility of use of floating cranes for onsite major component exchange for a floating wind turbine

A. Ramsay, M. Kapitaniak, V. Vaziri & S. Snee

Navigating funding challenges in the pursuit of wave energy technology development

C.A. Barry & J.V. Ringwood

Installed capacity forecast of offshore renewables in Ireland up to 2050

J. Huang & G. Iglesias

Review on the social and economic impacts of the offshore wind farms

S. Serpa, J.G. Costa, J. Simão, H.T. Xu & C. Guedes Soares

11h00 – 12h30

Session 1.9
Moorings and Floaters 2
Room: 02.1

Chairs: L. Johannning & K.T. Sharman

Mooring design and analysis for a floating solar system

J. Desiderati, F.J. Vidal, M.V. Biroli, S. Wang, C. Guedes Soares, N. Baderiya & W. Otto

Dynamic modelling of synthetic moorings for a wave energy converter

F.J. Vidal, S. Wang & C. Guedes Soares

Data-driven condition monitoring for mooring systems of a multi-float wave energy converter with two configurations

L. Zhang, P. Stansby & S. Draycott

A methodology for expert knowledge imbrication in mooring system design using Bayesian based optimization

A. Aristondo, A. Abanda, M. Esteras, V. Nava & M. Penalba

<i>11h00 – 12h30</i>
Session 2.9 Hydrogen Offshore 1 Room: 02.2
Chairs: R. Bruschi & J.C. Kang

Offshore renewables and green hydrogen: thoughts for new pipeline networks

R. Bruschi, F. Alessandri, A. Ruoti & R. Moslemian

Green hydrogen production from wave energy:

A dispatchable renewable energy resource

H.A. Said, K. Moran & J.V. Ringwood

Comparison of offshore and onshore hydrogen production from offshore wind

J. Guichard, R. Rawlinson-Smith & D. Greaves

Leakage risk assessment for offshore hydrogen production and storage platform

KB. Lv, Y. Sun, L. Sun, Y. Zhou & J.C. Kang

<i>11h00 – 12h30</i>
Session 3.9 Materials and Structural Design Room: 02.3
Chairs: B.S. Yeter & B.Q. Chen

Local vs global response of OWT foundation structures - The role of damping

R. Bruschi, A. Bollini, D.M. Silva & N. Paruolo

Added-mass estimation in the structural response of tidal turbine blades

E. Mascrier, G. Pinon & F. Zilic de Arcos

Hydroelastic response of multi-separated offshore floating circular module

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

Effect of lay-up sequence on the hydroelastic response of three-dimensional axisymmetric buoys under slamming loads

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

<i>14h00 – 15h30</i>
Session 1.10 Moorings and Floaters 3 Room: 02.1
Chairs: P. Stansby & S. Wang

Effects of heave plates on the mooring system installation process for floating offshore wind turbines

Y. Chen, H. Liu, J. Huang, M. Chen, Y. Tang, X. Jiang & T.S. Hallak

Experimental investigation of taut leg moored FOWTs in damaged conditions

F. Niosi, O. Dell'Edera, B. Paduano, G. Giorgi, G. Bracco & S. Schreier

Dynamic analysis comparison of shared mooring system for offshore wind turbine platforms

M.V. Biroli, S. Wang & C. Guedes Soares

Parametric study of embedded mooring tensions with a coupled Eulerian-Lagrangian approach

W. Zhang, S. Xu & C. Guedes Soares

<i>14h00 – 15h30</i>
Session 2.10 Hydrogen Offshore 2 Room: 02.2
Chairs: J.C. Kang & R. Bruschi

Modelling and optimisation of renewable hydrogen production from a 1 GW offshore wind-farm in France

M. Berthelin & G. Pinon

A control strategy for hydrogen fuel cell ship hybrid powertrain based on closed-loop simulation

X. Zhu, Y. Sun, L. Shi, Y. Zhou & J.C. Kang

Green hydrogen production in offshore wind farms: centralised vs. decentralised

V. Santos, A. Elizetxea-Navarro, R. Blanco-Aguilera, Y. Peña-Sanchez, A. Goikoetxea & M. Penalba

System FMECA of floating offshore structures for green hydrogen production and storage

B. Yeter, F. Brennan & J. Harris

14h00 – 15h30

Session 3.10

Vessels

Room: 02.3

Chairs: M.F. Ventura & H.T. Xu

Installation vessels for floating wind offshore substations

A. Crowle

Preliminary estimation of the vessel time and costs for station-keeping system pre-installation at the Utsira Nord wind farm

T. Müller & E. Uzunoglu

An evaluation of solar energy, wind power, and battery system applications onboard ships

Ç. Karatuğ

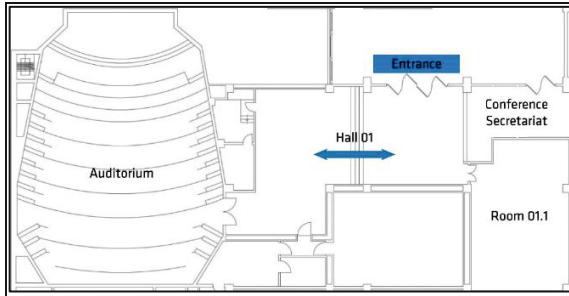
Fuzzy-based risk assessment and collision avoidance strategy for unmanned surface vessels near offshore wind farm

S.D. Hashali, S.L. Yang, H. Wu & X.B. Xiang

IMPORTANT INFORMATION:

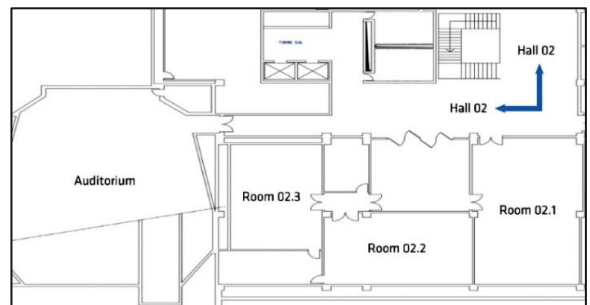
- The technical sessions of the RENEW 2024 Congress **will run in IST's Congress Centre** located at the Alameda Campus, on the Lower Ground Level 01 and Level 02 of the Civil Engineering Building.
- The timetable is settled taking into consideration the **Time Zone Lisbon/London time**

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.



Holiday Inn Lisboa

IST Congress Centre

Guidelines for presentations, questions and answers

- Each paper will have a timeslot of 20 minutes (15 minutes for the presentation and 5 minutes for Questions & Answers).
- Make sure you follow the timetable set out in the programme and the order of presentations.

Additional information:

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Network: **TECNICO-GUEST**

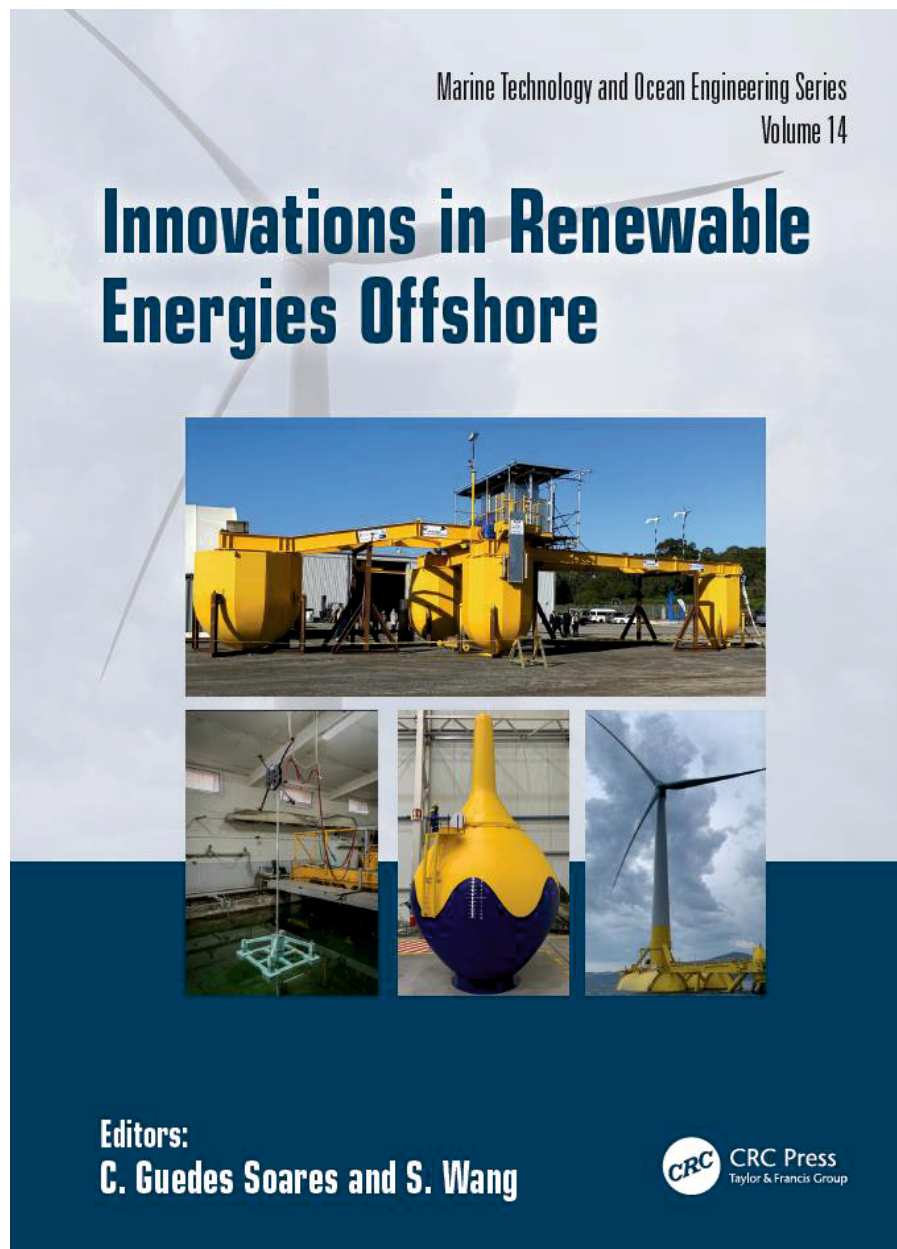
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Innovations in Renewable Energies Offshore
Lisbon, Portugal - 19-21 November 2024



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