15th EWTEC 2023 — European Wave and Tidal Energy Conference Series | BILBAO 3rd -7th SEPTEMBER 2023

Tuesday September 5

08:00-09:00 — **Registration** *(Main Hall)* — **08:00-09:00**

09:00-10:30 — Oral presentations

Room /Track	Chairman	Paper ID	Title	Presenter	
Baroja/ Wave device development and testing	Claes Eskilsson	138	Analysis of Mutriku's OWC performance	Isabel Casas	09:00-09:15
		144	Successful innovation strategies to overcome the technical challenges in the development of wave energy technologies	Pablo Ruiz-Minguela	09:15-09:30
		266	Spatial focussing of wave energy for improved power capture by an oscillating water column	Robert Mayon	09:30-09:45
		352	Relevance of Robustness and Uncertainties Analysis in the Optimal Design of Wave Energy Converters	Filippo Giorcelli	09:45-10:00
		176	Tuning Wave Energy Converters to local wave conditions	Wilson Guachamin-Acero	10:00-10:15
		466	Enabling the Ocean Internet of Things with Renewable Marine Energy	Mathew Topper	10:15-10:30
Laboa/ Tidal device development and testing	Stephanie Ordoñez-Sanchez	166	Intracycle Active Blade Pitch Control for Cross-Flow Tidal Turbines Using Embedded Electric Drive Systems	Zhao Zhao	09:00-09:15
		209	Numerical optimisation of the active lift turbines using OpenFoam's overset method	Ilan Robin	09:15-09:30
		231	Non-dimensional scaling of passive adaptive blades for a marine current turbine	Katherine Van Ness	09:30-09:45
		264	Optimal Design of a Submerged Tidal Device for Low Current Environment	Chul-hee Jo	09:45-10:00
		343	Designing Vortex Generators for Tidal Turbine Blades	Marinos Manolesos	10:00-10:15
		617	Leveraging Explainable Artificial Intelligence for Real-time Detection of Tidal Blade Damage	Muslim Jameel Syed	10:15-10:30
Arriaga/ Wave hydrodynamic modelling	Gareth Tomas	317	Verification and validation of MoodyMarine - A free simulation tool for modelling moored MRE devices	Johannes Palm	09:00-09:15
		321	A hybrid linear potential flow - machine learning model for enhanced prediction of WEC performance	Claes Eskilsson	09:15-09:30
		476	Design Wave analysis of the M4 wave energy converter device	Cristine Lynggard Hansen	09:30-09:45
		497	Hydrodynamic studies of a 15 MW semi-submersible FOWT to assess the suitability of the inclusion of a damper system	Yu Gao	09:45-10:00
		145	On the state-of-the-art of CFD simulations for wave energy converters within the open-source numerical framework of DualSPHysics	Alejandro Crespo	10:00-10:15
		158	A Study on Wave Energy Conversion Problem of Turbine-Integrated OWC Chamber	Jeong-Seok Kim	10:15-10:30
Oteiza/THM	Tim O'Doherty	503	Large-eddy simulations of interaction between surface waves and a tidal turbine wake in a turbulent channel	Tim Stallard	09:00-09:15
		195	Actuator-Line CFD Simulation of Tidal-Stream Turbines in a Compact Array	David Apsley	09:15-09:30
		218	High-fidelity modelling of a vertical axis tidal turbine model under realistic flow conditions	Mikaël Grondeau	09:30-09:45
		307	Synthetic eddy generation and modelling of turbine operation in a turbulent tidal flow	Matteo Gregori	09:45-10:00
		334	Impact of lateral turbine spacing on the performance of a multi-rotor tidal energy device	Rachael Smith	10:00-10:15
		367	A study on tidal rotors under the combined effects of currents and waves using actuator-line CFD simulations	Federico Zilio de Arcos	10:15-10:30

10:30-11:00 — **Refreshments, networking & posters exhibition** *(Terrace and Chillida room)* — **10:30-11:00**

11:00-12:30 — Oral presentations

Room /Track	Chairman	Paper ID	Title	Presenter	
Baroja/ Wave device development and testing	Diego Vicinanza	167	Experimental evaluation of phase and velocity control for a cycloroter wave energy converter	Andrei Ermakov	11:00-11:15
		169	Wave Energy Power Take-off Validation with a Hydraulicly Actuated Rotary Dynamometer and a Bi-directional High-power DC Supply: Methods for validating wave energy converters' mechanical and electrical power conversion systems	Casey Nichols	11:15-11:30
		212	A Removable elevated-hinge wave generator for testing marine energy devices	Pedro Lomonaco	11:30-11:45
		293	Wave energy converter power take-off characterization: comparing dynamometer and field data	Curtis Rusch	11:45-12:00
		448	Limiting the available pneumatic power in a U-OWC	Joao Henriques	12:00-12:15
		499	HAPIGYM: Two Rapid Prototyping Environments for Wave Energy Control	Alexandra Price	12:15-12:30
Laboa/ Tidal device development and testing	Alberto Peña	285	A methodology for developing a prediction model for the remaining fatigue life and residual strength of tidal turbine blades	Tenis Ranjan Munaweera Thanthirige	11:00-11:15
		177	Multi-Actuator Full-Scale Fatigue Test of a Tidal Blade	Sergio Lopez Dubon	11:15-11:30
		203	Experimental techniques for evaluating the performance of high-blockage cross-flow turbine arrays	Aidan Hunt	11:30-11:45
		277	Observations from structural testing of full-scale tidal turbine blades	William Finnegan	11:45-12:00
		322	Experimental flow conditions effects on a bottom-mounted ducted twin vertical axis tidal turbine compared to real sea conditions	Martin Moreau	12:00-12:15
		498	Experimental comparison of the flow-induced loading between a ducted bottom-mounted twin vertical axis tidal turbine at still and an unducted prototype	Saouli	12:15-12:30
Arriaga/ Wave hydrodynamic modelling	Markel Peñalba	496	Dynamic Simulation of Wave Point Absorbers Connected to a Central Floating Platform	Thiago Saksanian Hallak	11:00-11:15
		628	Hydrodynamic and Static Stability Analysis of a Hybrid Offshore Wind-Wave Energy Generation: An Expansion of Semisubmersible Floating Wind Turbine Concept	Payam Aboutalebi	11:15-11:30
		626	Study with Large Eddy Simulations of energy dissipation due to backwash flows in wave overtopping	Claudia Sandoval	11:30-11:45
		383	Nonlinear WEC modeling using Sparse Identification of Nonlinear Dynamics (SINDy)	Brittany Lydon	11:45-12:00
		392	Numerical and Experimental Characterization of Rotational Floating Body Drag	Bryson Robertson	12:00-12:15
		460	A development and validation of the in-house hydrodynamics code and the DNV software for TALOS wave energy converter	Wanan Sheng	12:15-12:30
Oteiza/THM	Gustavo Esteban	416	A turbines-module adapted to the marine site for tidal farms layout optimization	Mikel Pucci	11:00-11:15
		442	High-fidelity modelling of a six-turbine tidal array in the Shetlands	Pablo Ouro	11:15-11:30
		454	Instabilities in tidal turbine wakes	Amanda Smyth	11:30-11:45
		505	On the accuracy of BEMT and CFD on the power and trust prediction of tidal turbines	Yabin Liu	11:45-12:00
		506	The performance of counter-rotating tidal turbine in different sea states	Song Fu	12:00-12:15
		544	Comparison of Actuator Line Modelling of Tidal Power Kites with ADCP Measurements	Nomal Prabahar	12:15-12:30

12:30-14:00 — **Lunch & posters exhibition** *(Terrace and Chillida room)* — **12:30-14:00**

14:00-15:30 — Oral presentations

Room /Track	Chairman	Paper ID	Title	Presenter	
Baroja/ Wave device development and testing	Yago Torre-Enciso	242	Experimental Investigation into the Air Compressibility Scaling Effect on OWC Performance and Wave Height	André F.L. Governo	14:00-14:15
		185	Enhancing the efficiency of an axial impulse turbine with a diffuser	Geetam Saha	14:15-14:30
		260	Numerical performance assessment of a new wave energy conversion system	Giacomo Alessandri	14:30-14:45
		522	Basin testing of the 1-2-1 M4 WEC	Damon Howe	14:45-15:00
		451	Experimental Investigation on Performance of Counter-rotating Impulse Turbine with Middle Vanes for Wave Energy Conversion	Kichiro Sulo	15:00-15:15
		268	Design of an integrated generator and heaving buoy	Nick Baker	15:15-15:30
Laboa/ Tidal device development and testing	Daniel Coles	343	Designing Vortex Generators for Tidal Turbine Blades	Marinos Manolesos	14:00-14:15
		366	A two-scale blockage correction for an array of tidal turbines	Daniel Dehtyriov	14:15-14:30
		365	Performance Assessment of a Multi-Rotor Floating Tidal Energy System	Nicholas Kaufmann	14:30-14:45
		391	The Influence of the Downstream Blade Sweep on Cross-flow Turbine Performance	Abigale Snortland	14:45-15:00
		420	Additive Manufacturing for Powering the Blue Economy Applications: A Tidal Turbine Blade Case Study	Miguel Gonzalez-Montijo	15:00-15:15
		504	Design and Demonstration of a Passive Pitch System for Tidal Turbines	Stefano Gambuzza	15:15-15:30
Arriaga/ Wave hydrodynamic modelling	Sara Russo	164	Wave Amplification inside an Open-Circular Caisson for Wave Energy Conversion in Waters with Medium Energy Density	Jiann-Horng Chen	14:00-14:15
		513	System Identification for Modelling M4 Wave Energy Converter	Xuelei Wang	14:15-14:30
		198	Semi-analytical and CFD formulations of a spherical floater	Spyridon Mavrakos	14:30-14:45
		278	Spectral-Domain Modelling of Wave Energy Converters as an Efficient Tool for Adjustment of PTO Model Parameters	Adam Keester	14:45-15:00
		333	A multiquery analysis of a PeWEC farm	Jian Tan	15:00-15:15
		538	Effects of control strategies on the performance of floating WEC point absorbers operating attached to a breakwater by time-domain	Markos Bonovas	15:15-15:30
Oteiza/THM	AbuBakr Bahaj	579	Experimental characterisation of the wake of a bottom-mounted two tandem of cylinders placed in a high velocity area	Alina Santa Cruz	14:00-14:15
		676	Development of a modified BEMT model for the analysis of helical bladed vertical axis tidal turbines	Mohammad Fereidoonnezhad	14:15-14:30
		199	A comparative study of power production using a generic empirical model in a tidal farm	Kabir Bashir Shariff	14:30-14:45
		252	Objective Functions for the Blade Shape Optimisation of a Cross-Flow Tidal Turbine under Constraints	Karla Ruiz-Hussmann	14:45-15:00
		283	Investigating the impact of multi-rotor structure shadowing on tidal stream turbine performance	Bryn Townley	15:00-15:15
					15:15-15:30

15:30-16:00 — **Refreshments, networking & posters exhibition** *(Terrace and Chillida room)* — **15:30-16:00**

16:00-17:30 — Side events

Mitxelena/Side event 4	SafeWAVE project (by AZTI / WavEC)	16:00-17:30
Baroja/Side event 5	Technology Performance Level Assessment (TPL) (by SANDIA LAB. -TPL TEAM-)	16:00-17:30
Arriaga/Side event 6	NEMMO Project, On the Cutting Edge of Tidal Blade Design and Materials (by Ocean Energy Europe)	16:00-17:30

17:30-19:00 — Oral presentations

Room /Track	Chairman	Paper ID	Title	Presenter	
Baroja/ Wave device development and testing	Luis Gato	318	A Novel Hybrid Floating Breakwater-Wave Energy Converter Device: Preliminary Experimental Investigations	Sara Russo	17:30-17:45
		329	Origami-adapted clam design for wave energy conversion	Jingyi Yang	17:45-18:00
		555	The Geometrical Design of the L-shaped Oscillating Water Column Using Artificial Neural Network	Chen-Chou Lin	18:00-18:15
		274	Maximizing the surge amplitude of a floater through an adaptable mooring tightening technique	Andreas Asiikkis	18:15-18:30
		516	Reliability and Cost Assessment of Critical Components: Electrical generator failure of IDOM wave energy converter	Julia Fernandez Chozas	18:30-18:45
		286	Heterogeneous WEC array optimization using the Hidden Genes Genetic Algorithm	Habeebullah Abdulkadir	18:45-19:00
Arriaga/ Wave hydrodynamic modelling	Jesús M. Blanco	355	Numerical investigation of a new hybrid floating wind turbine concept	Beatrice Fenu	17:30-17:45
		376	Quantification of uncertainty in linear wave energy hydrodynamic models from experimental data	Mahdiyeh Farajvand	17:45-18:00
		379	An overview of an experimental campaign for arrays of wave energy conversion systems	Nicolas Faedo	18:00-18:15
		426	Solution verification of WECs: comparison of methods to estimate numerical uncertainties in the OES wave energy modelling task	Claes Eskilsson	18:15-18:30
		473	HydroChrono: An Open-Source Hydrodynamics Package for Project Chrono	David Ogden	18:30-18:45
		474	Nonlinear hydrodynamics of a heaving sphere in diffraction, radiation, and combined tests	Jana Orszaghova	18:45-19:00
Oteiza/ Tidal hydrodynamic modelling	Pablo Ruiz-Minguela	407	Modelling the effects of boundary proximity on a tidal rotor using the actuator line method	Huw Eduards	17:30-17:45
		464	Characterisation of turbulent flow and the wake of a tidal stream turbine in proximity to a ridge	Sulaiman Hurubi	17:45-18:00
		566	Tidal turbulence in medium depth water, primarily a model study	Göran Broström	18:00-18:15
		316	Verification and validation of blade-resolved viscous-flow tidal turbine simulations	Manuel Rentschler	18:15-18:30
		544	Comparison of Actuator Line Modelling of Tidal Power Kites with ADCP Measurements	Nomal Prabahar	18:30-18:45
					18:45-19:00

19:00-20:00 — Technical programme — Elhuyar — **Technical Committee meeting** — **19:00-20:00**

20:00-22:00 — Social programme — **Track Directors Dinner** — **20:00-22:00**