

## MONDAY 2 SEPTEMBER / 8:00-13:30

08:00	<i>Registration</i>		
09:00	<i>Opening of EWTEC2013 by Peter Frigaard</i> <i>Keynote speakers: Ole B. Sørensen, North Denmark Region; Matthew Finn, EMEC; Cameron Johnstone, EWTEC; Prof. Chul H. Jo, AWTEC</i>		
10:00-10:30	<i>Break</i>		
	<b>Session 1</b>	<b>Session 2</b>	<b>Session 3</b>
	<i>Wave and tidal energy resource characterization - wave 1</i>	<i>Wave and tidal energy resource characterization - tidal 1</i>	<i>Device hydrodynamics and structural mechanics - tidal 1</i>
10:30	<b>Design of a Novel Breakwater Wave Energy Converter for the South African Coast</b> / James R Joubert, Johannes L van Niekerk		<b>The Influence of Surface Gravity Waves on Marine Current Turbine Performance</b> / Ethan E. Lust, Luksa Luznik, Karen A. Flack, Jessica M. Walker, and Max C. Van Benthem
10:50	<b>Real time wave prediction for WEC control system optimization using a dynamic neural network</b> / H. Fernandez, M. I. Vousdoukas, S. Schimmels, I. Allajbej	<b>On Validating Numerical Hydrodynamic Models of Complex Tidal Flow</b> / Kester Gunn, Clym Stock-Williams	<b>Turbulence generation and its effect in LES approximations of tidal turbines</b> / Tom Blackmore, William M.J. Batten, AbuBakr S Bahaj
11:10	<b>Wave Energy Assessment in Scottish Seas</b> / Philippe Gleizon, David Woolf		<b>Computation of Inflow Turbulence Noise of a Tidal Turbine</b> / Thomas P. Lloyd, Stephen R. Turnock, Victor F. Humphrey
11:30	<b>The Influence of Coastal Morphology on the Wave Climate and Wave Energy Resource of the West Irish Coast</b> / Roxana Tiron, Sarah Gallagher, Frédéric Dias	<b>Assessing long term Tidal site characterisation using Acoustic Doppler Current Profilers (ADCP)</b> / Abhinaya Sankaran Iyer, Scott Couch, Gareth Harrison, Robin Wallace	<b>Tidal turbine blades in runaway situation: experimental and numerical approaches</b> / Celine Faudot, Ole G. Dahlhaug, Martin A. Holst
11:50	<b>Wave power variability over the northwest European shelf seas</b> / Simon P. Neill, M. Reza Hashemi	<b>Priorities for Reducing Tidal Energy Resource Uncertainty</b> / Tracey Kutney, Richard Karsten, Brian Polagye	<b>Simulation of Rotor-Foundation-Interaction on Tidal Current Turbines with Computational Fluid Dynamics</b> / Matthias Arnold, Frank Biskup, Denis Matha, Po Wen Cheng
12:10-13:30	<i>Lunch</i>		

<b>Location of sessions:</b>	
Session 1	<i>Europahallen</i> (ground floor)
Session 2	<i>Lille Teater</i> (first floor)
Session 3	<i>Rudiosalen</i> (first floor)
Session 4	<i>Musiksalen</i> (first floor)
Opening and closing of the conference will be in <i>Europahallen</i>	


  
 European Wave and Tidal Energy Conference Series

# PROGRAMME

**MONDAY 2 SEPTEMBER / 13:30-15:30**

	Session 1	Session 2	Session 3
13:30	<i>Wave and tidal energy resource characterization - wave 2</i>	<i>Wave and tidal energy resource characterization - tidal 2</i>	<i>Device hydrodynamics and structural mechanics - tidal 2</i>
13:30	<b>The Influence of Wind Variability on Estimating the Wave Power Resource</b> / Alice J. Goward Brown, Simon P. Neill, Matt J. Lewis	<b>Tidal Stream Energy Resource Assessment of the Anglesey Skerries</b> / Sena Serhadlioglu, Thomas A.A. Adcock, Guy T. Houlsby, Scott Draper Alistair G.L. Borthwick	<b>Characterisation of the Interactions between Horizontal Axis Turbines Aligned with the Flow</b> / Paul Mycek, Benoît Gaurier, Grégory Germain, Jean-Valéry Facq, Thomas Bacchetti, Grégory Pinon and Élie Rivoalen
13:50	<b>The Influence of Wind Variability on Estimating the Wave Power Resource</b> / Alice J. Goward Brown, Simon P. Neill, Matt J. Lewis	<b>Laboratory scale experiments and preliminary modelling to investigate basin scale tidal stream energy extraction</b> / Scott Draper, Tim Stallard, Peter Stansby, Stephen Way and Thomas Adcock	<b>Optimum geometry for axial flow free stream tidal turbine blades</b> / Richard Evans, Ross McAdam, Marcus Royle, Luke McEwen
14:10	<b>A suitable metocean hindcast database for the design of Marine energy converters</b> / Edwige Boudière, Christophe Maisondieu, Fabrice Ardhuin, Mickaël Accensi, Lucia Pineau-Guillou, Jérémy Lepesqueur	<b>A Systematic Approach to Undertake Tidal Energy Resource Assessment with Telemac-2D</b> / Alberto Pérez-Ortiz, John Pescatore, Ian Bryden	<b>Evaluation of the Swirl Characteristics of a Tidal Stream Turbine wake</b> / C. E. Morris, A.Mason-Jones, D.M. O'Doherty, S. C. Tatum , T. O'Doherty D. S. Thompson
14:30	<b>Detailed resource assessment, including intra-site variability, for marine renewable energy</b> / Ian G.C. Ashton, Joana Van Nieuwkoop, Helen C.M. Smith, Lars Johanning, George H. Smith	<b>Initial Flow Characterisation Utilising Turbine and Seabed Installed Acoustic Sensor Arrays</b> / Duncan RJ Sutherland, Brian G Sellar, Samuel Harding and Ian Bryden	<b>Near-wake characterisation of Horizontal Axis Tidal Stream Turbines in non-uniform steady flow</b> / S. C. Tedds , T. A. de Jesus Henriques I. Oweny, R. J. Poole
14:50	<b>Adjusting An Empirical Algorithm for Extracting Wave Height from HF Radar Measurements at the Wave Hub</b> / Guiomar Lopez, Daniel Conley, Deborah Greaves, Davide Magagna	<b>Sensitivity Analysis of the Turbulence Closure Models in the Assessment of Tidal Energy Resource in Orkney</b> / Susana Baston, Robert E. Harris, David K. Woolf, Robert A. Hiley, Jonathan C. Side	<b>Optimal Shape Design of Offshore Foundations Subjected to Wave and Current Loading</b> / D. Markus, K.-U. Bletzinger
15:10-15:30	<i>Break</i>		

## MONDAY 2 SEPTEMBER / 15:30-16:50

	Session 1	Session 2	Session 3
	<i>Social and political aspects 1</i>	<i>Wave and tidal energy resource characterization - tidal 3</i>	<i>Device hydrodynamics and structural mechanics - tidal 3</i>
15:30	<b>Perspective Study of Marine Structure in Oil Field Integrating Ocean Energy Devices</b> / Peng Yuan, Shujie Wang, Jinkun Liu, Zhen Liu, Zhigang Xu, Bingchen Liang, Wenfeng Ji, Jutian Wang	<b>Comprehensive Tidal Energy Resource Assessment in the lower Bay of Fundy, Canada</b> / Justine M. McMillan, Alex E. Hay, Richard H. Karste, Greg Trowse, Doug Schillinger, and Mitchell O'Flaherty-Sproul	<b>Loss Mechanisms in Tidal Stream Turbines</b> / Carl L. Sequeira, Robert J. Miller
15:50	<b>Marine substation design for grid-connection of a research wave power plant on the Swedish West coast</b> / Rickard Leonard Ekström, Antoine Baudoin, Magnus Rahm, Mats Leijon	<b>High Resolution Modelling of Tidal Resources, Extraction and Interactions Around the UK</b> / Sébastien Bourban, Noémie Durand, Mark Liddiard, Simon Cheeseman, Andrew Baldock	<b>Efficient method for analysing fluid-structure interaction of horizontal axis tidal turbine blades</b> / Kutalmis Bercin, Thomas Lloyd, Zheng-Tong Xie, Stephen R. Turnock
16:10	<b>Life Cycle Assessment of the Wavestar in comparison to other energy sources</b> / Dalton GJ, Daly MC, Madden D	<b>An Investigation of Uncertainty in Yield Prediction for Tidal Current Farms</b> / Clym Stock-Williams, Steven Parkinson, Kester Gunn	<b>Performance of Horizontal Axis Tidal Current Turbine with Blade Deformation</b> / Chul-Hee Jo, Jun-Ho Lee, Do-Youb Kim, and Kang-Hee Lee
16:30-16:50	<b>Compressed Air Energy Storage for In-Stream Tidal Generation on a Limited Capacity Electricity Grid</b> / Sebastian Manchester, Lukas Swan, Dominic Groul	<b>Design load analysis of fatigue in tidal current turbine caused by downstream tower structure</b> / Chul H. Jo, Kang-Hee Lee, and Jun-Ho Lee	<b>Design, commissioning and performance of a device to vary the turbulence in a recirculating flume</b> / Luke Myers, Khilan Shah, Pascal Galloway
17:00-18:00	<i>Reception: Journal launch of International Journal of Marine Energy. Host: Elsevier</i>		
18:00-19:30	<i>Welcome reception. Host: Aalborg Municipality</i>		

## TUESDAY 3 SEPTEMBER / 09:00-10:30

	Session 1	Session 2	Session 3	Session 4
	<i>Social and political aspects 2</i>	<i>Environmental impact and appraisal 1</i>	<i>Device development and testing - wave 1</i>	<i>Device development and testing - tidal 1</i>
09:00	<b>Strategic Risk Management in Ocean Energy: A System Dynamics Approach to the Evaluation of 40+ Expert Interviews /</b> Ralf Bucher	<b>The Impact of Tidal Turbines on Small-Scale Seabed Erosion /</b> Lada Vybulkova, Marco Veza, Richard Brown	<b>Hydrodynamic Analysis of CETO Array Layout /</b> Nitin Repalle, Jonathan Fievez, Laurie Mann	<b>In-situ demonstration test for tidal current power generation with a helical turbine /</b> Sang-Hun Han, Jin-Hak Yi, Jin-Soon Park, Kwang-Soo Lee
09:20	<b>The Potential of Wave Power in the United States in an Economic Context /</b> Mirko Previsic	<b>Tethys: Developing a Commons for Understanding Environmental Effects of Marine Renewable Energy /</b> Andrea Copping, Courtney Smith, Hoyt Battey, Michael Reed, Jocelyn Brown-Saracino, Meghan Massaua	<b>Safety Considerations for the Deployment of Marine Renewable Energy Devices at Biscay Marine Energy Platform (bimep) /</b> Yago Torre-Enciso, Pablo Ruiz-Minguela, Antonio Rico, Dorleta Marina	<b>Comparison of Analytical and CFD Modelling of the Wake Interactions of Tidal Turbines /</b> Muluaem G. Gebreslassie, Michael R. Belmont, Gavin R. Tabor
09:40	<b>Application of Policy Instruments for Regional Support of Marine Renewable Energy /</b> Angus Vantoch-Wood, Peter M. Connor, Yannis Kablan	<b>A Marine Spatial Planning Framework to Analyse the Opportunity to Combine Wind And Wave Energy /</b> Arianna Azzellino, Vincenzo Ferrante, Jens Peter Kofoed, Caterina Lanfredi, Diego Vicinanza	<b>Steps towards commercialization of new power buoy with pivoting arm LOPF /</b> Lucia Margheritini, Per Resen Steenstrup	<b>Reliability of Tidal Turbines using Wind Turbine Experience /</b> K. A. Karikari-Boateng, C. Ng, J. Grimwade, L. Johanning, M.A. Mueller, N. Barltrop
10:00-10:30	Break / Poster session			

## TUESDAY 3 SEPTEMBER / 10:30-13:30

	Session 1	Session 2	Session 3	Session 4
	<i>Wave and tidal energy resource characterization - wave 3</i>	<i>Wave and tidal energy resource characterization - tidal 4</i>	<i>Device development and testing - wave 2</i>	<i>Device development and testing - tidal 2</i>
10:30	<b>RAIA Observatory: Oceanographic and meteorological data and forecasting services in the western of Iberia.</b> / Pablo Álvarez, Ignacio González, Belén Martín, Ana Almécija, Abigail Buceta, Bregóán Gómez, Anabela Venâncio, Pedro Costa, Guillermo Fernández, Marcos Tesouro, Begoña Vilas, Silvia Allen-Perkins, Pedro Montero, Alberto Gómez, Silvia Torres.	<b>MeyGen Tidal Energy Project: Numerical Modelling of Tidal Turbine Wake Interactions</b> / Sarah Crammond, Ruud Caljouw, Ian Jones, Andrew Wells, Ian Hamill and Ole Petersen	<b>Experimental and numerical development of a floating multi-chamber OWC device</b> / Arantza Iturrioz, Ra'ul Guancho, José A. Armesto, César Vidal, Iñigo J. Losada	<b>The Effects of Blade Roughness and Fouling on Marine Current Turbine Performance</b> / Jessica M. Walker, Karen A. Flack, Ethan E. Lust, Michael P. Schultz, Luksa Luznik
10:50		<b>Characterisation of a Highly Energetic Tidal Energy Site with Specific Reference to Hydrodynamics and Bathymetry</b> / Paul Evans, Scott Armstrong, Catherine Wilson, Iain Fairley, Chris Wooldridge, Ian Masters	<b>Wave Energy in China Priority and synergy towards the demonstration of WECs</b> / Ma Changlei, Gao Yanbo, Xia Dengwen, Wang Chunyi	<b>Full-Scale Testing of a Tidal Energy Converter Using a Tug Boat</b> / R. Starzmann, M. Baldus, E. Groh, N. Hirsch, N. A. Lange, S. Scholl
11:10	<b>Characterising Wave-Current Fields and their Interaction from in situ Measurements</b> / Antonella M. Colucci, Abdessalem Bouferrouk, Jon P. Hardwick, Lars Johanning	<b>Investigation of Tidal Turbine Arrays using 3D Reynolds-Averaged Navier-Stokes Simulations</b> / William Hunter, Takafumi Nishino and Richard H.J. Willden	<b>Modelling and Results for an Array of 32 Oscillating Water Columns</b> / Thomas Kelly, Thomas Dooley, John Campbell and John Ringwood	<b>Condition Monitoring of a Tidal Stream Turbine: Development of an Experimental Methodology</b> / Matthew Allmark, Roger Grosvenor, Carl Byrne, Fatih Anayi, Paul Prickett
11:30	<b>On the wave energy resource assessment in the Baja California coastal region and a study of the long term tendencies of significant wave height</b> / Francisco J. Ocampo-Torres, Pedro Osuna, Erick Rivera, Ixetl García, Tenoch I. Juárez-Díaz	<b>Method for Identification of Doppler Noise Levels in Turbulent Flow Measurements Dedicated to Tidal Energy</b> / Jean-Baptiste Richard, Jim Thomson, Brian Polagye, Jochen Bard	<b>Optical non-contact floating object tracking using an open-source library</b> / Francesco Ferri, Gilido Andreoni, Neven Perisic, John Lavelle and Jens Peter Kofoed	<b>The Specific Speed of Performing Tidal Turbines and Concepts Thereof</b> / Angela Bauer, Paul Uwe Thamsen
11:50	<b>Wave Energy Resource Characterisation for Guernsey Island (UK)</b> / V. Magar, C. R. Joshi, B. G. Williams and D. Conley	<b>"Surfacing" the Ducted Sea Current Turbine</b> / Demos P. Georgiou, Nikolaos G. Theodoropoulos, Kypros F. Milidonis	<b>Aerodynamic design and numerical investigation of a new radial bi-directional turbine for wave energy conversion</b> / C. Moisel, R. Starzmann	<b>New steps in the development of the second generation TEC GESMEY</b> / Luis R. N. Rivas, Amable L. Piñeiro, Jose A. S. Sanchez, Eva M.N. Rojas, Alfonso C. Lozano
12:10-13:30	<i>Lunch</i>			

## TUESDAY 3 SEPTEMBER / 13:30-15:30

	Session 1	Session 2	Session 3	Session 4
	<i>Wave and tidal energy resource characterization - wave 4</i>	<i>Wave and tidal energy resource characterization - tidal 5</i>	<i>Device development and testing - wave 3</i>	<i>Device development and testing - tidal 3</i>
13:30	<b>Wave &amp; Tidal Energy Production Estimates: Converting Resource Uncertainties into Energy Uncertainties</b> / Mícheál Ó' Catháin, Clym Stock-Williams, Tim Carnus	<b>Geotechnical investigation of Grand Passage, Nova Scotia, with regard to sediment mobility and the installation of tidal energy converters</b> / Nina Stark, Alex E. Hay, Greg Trowse, Achim Kopf	<b>Wave Conditions Inducing Extreme Mooring Loads on a Dynamically Responding Moored Structure</b> / Violette Harnois, Lars Johanning, Philipp R. Thies	<b>Optimal Power Extraction of Flapping Tidal Turbine by Flexible Foil</b> / Tuyen Quang Le, Jin Hwan Ko, Soo Hyung Park
13:50	<b>Sampling Variability and Performance Assessment of WECs</b> / Ed Mackay, Ian Ashton	<b>Modeling In-stream Tidal Energy Extraction and Its Potential Environmental Impacts</b> / Zhaoqing Yang, Taiping Wang, Andrea Copping, Simon Geerlofs	<b>Comparison of axial and radial blade cascades for bidirectional wave energy air-turbines</b> / C. Moisel, T.H. Carolus	<b>Optimisation of Marine Energy Installation Operations</b> / Maxime Morandeau, Rich T. Walker, Richard Argall, Rachel F. Nicholls-Lee
14:10	<b>Extreme Wave conditions Across European Marine Energy Test Sites as Refined Data Product of the SOWFIA Project</b> / Jean-Baptiste Saulnier, José Chambel Leitão, Davide Magagna, Daniel Conley, João Ribeiro	<b>The Strength and Phase of the Tidal Stream</b> / David Woolf	<b>The economic implications of the design of mooring systems for wave energy converters</b> / F. Boscolo Papo, B. De Miguel Para, J. López Mendia, M.Ojanguren, A. Rico	<b>The Effects of Wave-Current Interactions on the Performance of a Model Horizontal Axis Tidal</b> / Tiago A. de Jesus Henriques, Siân C. Tedds, Avgi Botsari, Hossein Najafian, Christopher J. Sutcliffe, Ieuan Owen, Robert J. Poole
14:30	<b>Wave energy and extreme value analysis in coastal zone in the central Mediterranean sea, oriented to the design of energy harvesters</b> / Felice Arena, Valentina Laface, Giovanni Malara, Alessandra Romolo, Antonino Viviano Adriana Carillo, Gianmaria Sannino	<b>Optimising commercial-scale TEC arrays: genetic algorithm, Fractal &amp; Eco-mimicry</b> / Thomas Roc, Deborah Greaves, Daniel C. Conley, Mark Leybourne	<b>Status Update of the Wave Energy Research at Uppsala University</b> / Y. Hong, E. Hultman, V. Castellucci, B. Ekergård, L. Sjökvist, D. E. Soman, R. Krishna, K. Haikonen, A. Baudoin, L. Lindblad, E. Lejerskog, D. Käller, M. Rahm, E. Strömstedt, C. Boström, R. Waters and M. Leijon	<b>Design of a Passively Adaptive Rotor Blade for Optimized Performance of a Horizontal-Axis Tidal Turbine</b> / R.E. Murray, K. Gracie, D.A. Doman, M.J. Pegg and C.M. Johnstone
14:50	<b>Representative spectra of the wave resource from sea wave measurements</b> / John Lavelle, Jens Peter Kofoed	<b>Towards Characterization of the Unsteady Turbulent Tidal Flow in Minas Passage Using High-Fidelity CFD Simulation</b> / A.G. Gerber, T. Jeans, J. Culina, A.G.L. Holloway		<b>Fixed-Pitch Blades for Passive-Feather Power Regulation of Second-Tier Site Tidal Turbines</b> / K. Gracie, R. E. Murray, C. M. Johnstone, D.A. Doman and M.J. Pegg
15:10-15:30	<i>Break</i>			

## TUESDAY 3 SEPTEMBER / 15:30-17:30

	Session 1	Session 2	Session 3	Session 4
	<i>Device hydrodynamics and structural mechanics - wave 1</i>	<i>Environmental impact and appraisal 2</i>	<i>Device development and testing - wave 4</i>	<i>Device development and testing - tidal 4</i>
15:30	<b>Wave Power Absorption from a Flap-type Wave Energy Converter Near a Straight Coast</b> / Dripta Sarkar, Emiliano Renzi, Frederic Dias	<b>The Importance of Waves within Assessing the Impact of Tidal Energy Schemes</b> / Matt Lewis, Simon Neill	<b>Development of Polychromatic Irregular Waves for Testing OWC Bidirectional Turbines at a Land-Based Test Facility</b> / Judith R. Farman, João A. Teixeira, James F. Whidborne, David Mba and Shahab Natanzi	<b>US Department of Energy (DOE) National Lab Activities in Marine Hydrokinetics: Scaled Model Testing of DOE Reference Turbines</b> / V.S. Neary, A.A. Fontaine, P. Bachant, B. Gunawan, M. Wosnik, C. Michelen, R.J. Meyer, W.A. Straka
15:50	<b>Experimental Investigations on Two Bottom-Hinged Wave Energy Converters in Tandem Operations at Different Separation Distances</b> / Yu-Chi Chang, Wei-Ming Huang, Yi-Chih Chow, Chen-Chou Lin, Shiaw-Yih Tzang	<b>Identification of critical environmental and socio-economic issues of designated wave energy test centres across Europe</b> / T. Simas, J. O'Callaghan, J.B. Saulnier, D. Marina, D. Magagna, I. Bailey, D. Greaves, C. Embling, J. Sundberg	<b>Recent Advances in the Development of Wave Energy Converters</b> / Kaan Koca, Andreas Kortenhaus, Hocine Oumeraci, Barbara Zanuttigh, Elisa Angelelli, Matteo Cantu, Roberto Suffredini, Giulia Franceschi	<b>Study of a flexible membrane current energy converter</b> / Astrid Deporte, Martin Trasch, Gregory Germain, Peter Davies and Jean-Baptiste Drevet
16:10	<b>Experimental and Numerical Modelling of a Moored, Generic Floating Wave Energy Converter</b> / Guilherme Moura Paredes, Claes Eskilsson, Johannes Palm, Lars Bergdahl, Luis M. Leite and Francisco Taveira-Pinto	<b>Wave farm impact and wave-WEC interaction: a sensitivity analysis</b> / Gregorio Iglesias, Miguel Veigas	<b>Inertial Sea Wave Energy Converter (ISWEC): scale model and wave tank test</b> / Andrea Cagninei, Giovanni Bracco, Mattia Raffero, Giuseppina Colicchio, Stefano Fontan, Ermanno Giorcelli, Giuliana Mattiazzo, Vincenzo Orlando, Davide Poggi	<b>Tidal Turbine Concept Design for Array Development</b> / S. P.Way, M. D. Thomson
16:30	<b>CFD Simulation of a Moored Floating Wave Energy Converter</b> / Johannes Palm, Claes Eskilsson, Guilherme Moura Paredes, and Lars Bergdahl	<b>Who should be afraid of a tidal turbine – the good the bad or the ugly?</b> / Linus Hammar, Jimmy Ehnberg	<b>Comparison of Foundation Systems for Wave Energy Converters Wavestar</b> / Evelina Vaitkunaite, Lars Bo Ibsen, Benjamin Nordahl Nielsen, Salvador Devant Molina	<b>Experimental Investigation of the Dynamic Response of an Underwater Taut Moored Support Structure for Tidal Energy Converters in Unidirectional Current and Waves</b> / F.Fiore, F. Trarieux, J.Hayman
16:50	<b>Preliminary Assessment of a Semi-Submersible Floating Wind Turbine Combined with Pitching Wave Energy Converters</b> / Thomas Souldard, Aurélien Babarit, Bruno Borgarino	<b>The Influence on the Performance of Horizontal Axis Tidal Turbines in Tidal Power Farm Considering the Rotor Rotation Direction</b> / Shujie Wang, Linjie Li, Junzhe Tan, Peng Yuan	<b>Performance Study on a Power Take-off System of a Floating Wave Energy Converter Model by Experimental and CFD Methods</b> / ByungHa Kim, Joji Wata, Mohammed asid Zullah, Young-Ho Lee	<b>The Söderfors Project: Experimental Hydrokinetic Power Station Deployment and First Results</b> / Staffan Lundin, Johan Forslund, Nicole Carpman, Mårten Grabbe, Katarina Yuen, Senad Apelfröjd, Anders Goude and Mats Leijon
17:10-17:30	<b>Numerical and Physical Modelling of Extreme Wave Impacts on a Fixed Truncated Circular Cylinder</b> / E. Ransley, M. Hann, D. Greaves, A. Raby, D. Simmonds	<i>Power take-off and device control</i> <b>Model Predictive Control of an array of Wave Energy Converters</b> / Guang Li, Mike Belmont		<b>VETT' - A New Approach to Very Low Head Tidal Power Generation</b> / Paul Bird, Peter Roberts
18.30-22.00	<i>Social event: Dramatized City Walk</i>			

## WEDNESDAY 4 SEPTEMBER / 9:00-10:30

	Session 1	Session 2	Session 3
	<i>Device hydrodynamics and structural mechanics - wave 2</i>	<i>Device and environmental modelling 1</i>	<i>Device development and testing - wave 5</i>
09:00	<b>Layout optimization of wave energy point absorbers arrays</b> / M. Vicente, M. Alves and A. Sarmento	<b>A Two-Dimensional Finite Volume Shallow Water Model for Tidal Current Simulations Using OpenFOAM® - Numerical Validation and High-Resolution Ocean Modelling Case</b> /Andreas Ruopp , Philipp Dausy, Albert Ruprecht and Stefan Riedelbauch	<b>Component Reliability Testing for Wave Energy Converters: Rationale and Implementation</b> /Philipp R Thies, Lars Johanning, Tessa Gordelier
09:20	<b>Mooring System Influence on the Efficiency of Wave Energy Converters</b> /Frederico Cerveira, Nuno Fonseca, Ricardo Pascoal	<b>Potential Effects of the Interaction between Marine Mammals and Tidal Turbines – An Engineering and Biomechanical Analysis</b> /Thomas Carlson, Rich Jepsen, Andrea Copping	<b>Summary of Performance After One Year of Operation with the Lifesaver Wave Energy Converter System</b> /Jonas Sjolte, Ida Kathrine Bjerke, Gaute Tjensvoll and Marta Molinas
09:40	<b>Derivation of Wave Loads for the Design of Oscillating Wave Surge Converters</b> /Sylvain Bourdier, Khalid Abdulla, Alan Henry, Trevor Whittaker	<b>On the modelling of WECs in wave models using far field coefficients</b> /Aurélien Babarit, Matt Folley, François Charrayre, Christophe Peyrard, Michel Benoit	<b>Project WESA (Wave Energy for a Sustainable Archipelago) – a Single Heaving Buoy Wave Energy Converter Operating and Surviving Ice Interaction in the Baltic Sea</b> /Erland Strömstedt, Andrej Savin, Hanna Heino, Kasimir Antbrams, Kalle Haikonen, Thomas Götschl
10:00-10:30	<i>Break</i>		



## WEDNESDAY 4 SEPTEMBER / 10:30-13:30

	Session 1	Session 2	Session 3
	<i>Device hydrodynamics and structural mechanics - wave 3</i>	<i>Device and environmental modelling 2</i>	<i>Device development and testing - wave 6</i>
10:30	<b>Practical limits to the power that can be captured from ocean waves by oscillating bodies</b> /Jørgen Hals	<b>Tidal Energy Extraction in an Idealized Ocean-Fjord Tidal Model with Astronomical Forcing</b> /Mitsuhiro Kawase, Marisa Gedney	<b>A SMALL SCALE FIELD EXPERIMENT ON A U-OWC (REWEC3)</b> /Felice Arena, Alessandra Romolo, Giovanni Malara, Vincenzo Fiamma
10:50	<b>Nonlinear Time-Domain Simulation of Backward Bent Duct Buoy (BBDB) Floating Wave Energy Converter</b> /WeonCheol Koo, Sung-Jae Kim	<b>The influence of non-linear turbine dynamics on the environmental stress of tidal stream arrays</b> /Matthew C. Easton, David K. Woolf	<b>Cost Reduction Pathways for Wave Energy</b> /Mirko Previsic, Kourosh Shoele
11:10	<b>Hydrodynamics of arrays of OWC's devices consisting of concentric cylinders restrained in waves</b> /D. N. Konispoliatis, S. A. Mavrakos	<b>The Effect of Rotor Design on the Power Output of Closely Packed Tidal Turbines</b> /Justine Schluntz and Richard H.J. Willden	<b>Helmholtz Resonance Mode for Wave Energy Extraction</b> /Yalda Saadat, Nelson Fernandez, Alexei Samimi, Mohammad Reza Alam, Mostafa Shakeri, Reza Ghorbani
11:30	<b>Primary Wave Energy Conversions of Oscillating Water Columns</b> /Wanan Sheng, Raymond Alcorn, Anthony Lewis	<b>The Cylindrical Wave Field of Wave Energy Converters</b> /J. Cameron McNatt, Vengatesan Venugopal, David Forehand	<b>Increasing durability and lowering the overall cost of wave energy converters using Ultra High Performance Concrete</b> /Michael S. Jepsen, Lars Damkilde, Niels A. Hansen, Bendt Aarup
11:50	<b>On the viscous effects in the interaction of water waves with an oscillating wave surge converter</b> /Yanji Wei, Ashkan Rafiee and Frederic Dias	<b>CFD Power and Load Prediction on a 1MW Tidal Stream Turbine with Typical Velocity Profiles from the EMEC Test Site</b> /James McNaughton, Stefano Rolfo, David Apsley, Tim Stallard, Peter Stansby	<b>Techno-Economic Optimisation of an Oscillating Water Column Array Wave Energy Converter</b> /Keith O' Sullivan, Dr. Jimmy Murphy
12:10-13:30	<i>Lunch</i>		

## WEDNESDAY 4 SEPTEMBER / 13:30-15:30

	Session 1	Session 2	Session 3
	<i>Device hydrodynamics and structural mechanics - wave 4</i>	<i>Device and environmental modelling 3</i>	<i>Device development and testing - wave 7</i>
13:30	<b>An artificial seabed carpet for multidirectional and broadband wave energy extraction: Theory and Experiment</b> /Marcus Lehmann, Ryan Elandt, Henry Pham, Reza Ghorbani, Mostafa Shakeri and Mohammad-Reza Alam	<b>Effects of Rotor Blade Tip Modifications on a Tidal In-Stream Energy Converter – Voith HyTide®</b> /Frank Biskup, Matthias Arnold, Philipp Daus, Raphael Arlitt, Martin Hohberg	<b>WEC Technology Performance Levels (TPLs) -Metric for Successful Development of Economic WEC Technology</b> /Jochem Weber, Ronan Costello, John Ringwood
13:50	<b>Influence of Wave State Uncertainties on Probabilistic Reliability Assessments of Wave Energy Devices</b> /Simon Ambühl, Jens Peter Kofoed, John D. Sørensen	<b>Analysis of a cyclodial wave energy converter using unsteady Reynolds averaged Navier-Stokes simulation</b> /Christopher Caskey and Tiger Jeans	<b>Vision and Plans for Wavestar Development</b> /Laurent Marquis, Bent Kristensen, Enrique Vidal Sánchez
14:10	An overview of analytical, numerical and experimental methods for modelling oscillating water columns/Virginie Baudry, Aurélien Babarit, Alain Clément	<b>Development of SNL-SWAN, a Validated Wave Energy Converter Array Modeling Tool</b> /Kelley Ruehl, Aaron Porter, Ari Posner, Jesse Roberts	<b>Active Magnetic Bearings for Linear Generators</b> /Ignacio Barajas-Solano, Dr. Markus Mueller, Dr. Aristides Kiprakis
14:30	<b>Breaker types and loading characteristics at SSG</b> /Mariano Buccino, Daniela Salerno, Davide Banfi, Diego Vicinanza, Jens Peter Kofoed, Mario Calabrese	<b>Tidal Turbine Performance in Sheared Flow</b> /Conor F. Fleming, Simon C. McIntosh, Richard H. J. Willden	<b>Investigating Uncertainties in Physical Testing of Wave Energy Converter Arrays</b> /Paul Lamont-Kane, Matt Folley, Trevor Whittaker
14:50	<b>Design of a 1.5MW Wave Dragon</b> / Hans Christian Soerensen, Erik Friis-Madsen, Stefano Parmeggiani	<i>Wave and tidal energy resource characterization - wave</i>	
		<b>Characteristics of the Wave Energy Resource at the Atlantic Marine Energy Test Site</b> / Brendan Cahill, Tony Lewis	
15:10-15:30	<i>Break</i>		

## WEDNESDAY 4 SEPTEMBER / 15:30-17:10

	Session 1	Session 2	Session 3
	<i>Device hydrodynamics and structural mechanics - wave 5</i>	<i>Device and environmental modelling 4</i>	<i>Social and political aspects 3</i>
15:30	<b>Excitation Forces on Point Absorbers Exposed to High Order Non-linear Waves</b> /Thomas H. Viuff, Morten T. Andersen, Morten M. Kramer and Morten M. Jakobsen	<b>About the Use of 3rd-Generation Wave Prediction Models for Estimating the Performance of Wave Energy Converters in Coastal Regions</b> /Jean-Baptiste Saulnier, Thomas Soulard, Yves Perignon, Izan Le Crom, Aurélien Babarit	<b>Strategy for the development of wave energy utilization in Denmark through an industrial partnership</b> / K. Nielsen, J. P. Kofoed, J. Krogh, N. E. Helstrup Jensen E. Friis-Madsen
15:50	<b>Experimental assessment of the mooring influence on the power output of floating Wave Activated Body WECs</b> /E. Angelelli, B. Zanuttigh, F. Ferri, J.P. Kofoed	<b>Verification and validation of a wave farm planning tool</b> /B. F. M. Child, P. Laporte Weywada	<b>Impacts on the Electrical System Economics from Critical Design Factors of Wave Energy Converters and Arrays</b> /Fergus Sharkey, Michael Conlon, Kevin Gaughan
16:10	<b>The Influence of Load History on Synthetic Rope Response</b> /S. Weller, P. Davies, L. Johanning	<b>The Influence of Waves on Tidal Stream Turbine Wake Recovery</b> / Alex Olczak, Tim Stallard and Peter Stansby	<b>Assessment of the Grid Capacity Sharing Potential for Wave and Wind Energy Conversion Systems in the Outer Hebrides of Scotland</b> /Arne Vögler, James Morrison
16:30-17:10	<b>3D Wave Radiation Efficiency of a Double Cycloidal Wave Energy Converter</b> /Stefan G. Siegel, Casey Fagley, Jürgen Seidel and Tiger Jeans		
18.00-23.30	<i>Social event: Robber's Banquet</i>		

## THURSDAY 5 SEPTEMBER / 9:00-10:30

	Session 1	Session 2
	<i>Power take-off and device control 1</i>	<i>Device and environmental modelling 5</i>
09:00	<b>A study: Potential supervisory Real Time Integrated Monitoring and Control System (RTIMCS) solutions for wave energy converters</b> / James Kelly, William M. D. Wright, Dara O'Sullivan, A. W. Lewis	<b>Physical Modelling of an Array of 25 Heaving Wave Energy Converters to Quantify Variation of Response and Wave Conditions</b> / P. Troch, V. Stratigaki, T. Stallard, D. Forehand, M. Folley, J.P. Kofoed, M. Benoit, A. Babarit, D. Gallach Sánchez, L. De Bosscher, P. Rauwoens, B. Elsässer, P. Lamont-Kane, P. McCallum, C. McNatt, E. Angelelli, A. Percher, E. Carpennero Moreno, S. Bellew, E. Dombre, F. Charrayre, M. Vantorre, J. Kirkegaard, S. Carstensen
09:20	<b>Evaluation of a Mechanical Power Smoothing System for Wave Energy Converters</b> / Sara Sahlin, Mikael Sidenmark, Torbjörn Andersson	<b>Full-Scale Validation Study of a Numerical Tool for the Prediction of the Loading and Hydrodynamic Performance of Axial Flow Tidal Turbines</b> / W. Collier, S. P. Way
09:40	<b>Air turbine choice and optimization for spar-buoy oscillating water column wave energy converter</b> / Antonio F. O. Falcao, Joao C. C. Henriques, Luis M. C. Gato, Rui P. F. Gomes	<b>Combining Numerical Methods for Basin and Turbine Scales for Improved Modelling of in-situ Turbine Arrays</b> / Michael Shives , Curran Crawford, Clayton Hilesy and Roy Waltersy
10:00-10:30	<i>Break</i>	

## THURSDAY 5 SEPTEMBER / 10:30-13:30

	Session 1	Session 2	Session 3
	<i>Power take-off and device control 2</i>	<i>Device and environmental modelling 6</i>	<i>Environmental impact and appraisal 3</i>
10:30	<b>An Open Water Submerged Device for Wave Energy Focusing and Conversion</b> / Umesh A Korde, R. Cengiz Ertekin	<b>An Analytical Method for Calculating Wave Energy Converter Exclusion Windows for Coastal Features</b> / A. Vickers , I.G.C. Ashton, H.C.M. Smith J. Van Nieuwkoop, L.Johanning	<b>Potential impacts of a barrage on the eutrophic status of the Severn Estuary, UK</b> / Margaret Kadiri, David Kay, Reza Ahmadian, Bettina Bockelmann-Evans, Roger Falconer
10:50	<b>Unbalanced Forces in Electrical Generators for Wave and Tidal Devices</b> / Jonathan Shek, David Dorrell, Minfu Hsieh, I-Hsien Lin, Kaswara Mostafa, Markus Mueller, Yu-Han Yeh	<b>A Correction for Depth-Averaged Simulations of Tidal Turbine Arrays</b> / C. R. Vogel, R. H. J. Willden, G. T. Houlsby	<b>Making Space for Offshore Renewables - Spatial Planning for Marine Energy</b> / Sonja Pans, Peter Rasch, Michael Lochinvar Sim Abundo, Ole Svenstrup Petersen
11:10	<b>Optimal Discrete PTO Force for Point Absorber Wave Energy Converters in Regular Waves</b> / Anders Hedegaard Hansen, Henrik C. Pedersen	<b>Validation of a Time-Domain Modelling Tool for Wave Energy Converter Arrays</b> / Ed Mackay, Joao Cruz, Michael Livingstone, Peter Arnold	<b>Methods for Individual Based Modelling of Harbour Porpoise</b> / T. Nick Croft, Ian Masters, Thomas Lake
11:30	<b>Pneumatic Power Regulation by Wave Forecasting and Real-Time Relief Valve Control for an OWC</b> / Kieran Monk, Daniel Conley, Miguel Lopes, Qingping Zou	<b>The Simulation of Nearshore Wave Energy Converters and their Associated Impacts around the Outer Hebrides</b> / Charles E. Greenwood, David Christie, Vengatesan Venugopal	<b>Environmental Considerations for the Development of a Multi-Technology, Tidal Array Site in England</b> / Hannah Bush, Mark Leybourne, Joe Hussey, Ned Minns
11:50		<b>Influence of tidal-stream energy extraction on sediment dynamics</b> / Peter E. Robins	
12:10-13:30	<i>Lunch</i>		

## THURSDAY 5 SEPTEMBER / 13:30-15:40

	Session 1	Session 2
	<i>Power take-off and device control 3</i>	<i>Device hydrodynamics and structural mechanics - wave 6</i>
13:30	<b>Optimal Resistive Control Strategy for a Floating OWC Device</b> / Diana Bull, Erick Johnson	<b>Experimental comparison of self-reacting point absorber WEC designs</b> / Scott Beatty, Bradley Buckham, Peter Wild
13:50	<b>Constrained control of arrays of wave energy devices</b> / Giorgio Bacelli, John Ringwood	<b>Validation of a Partially Nonlinear Time Domain Model using instantaneous Froude-Krylov and Hydrostatic Forces</b> / Matthieu Guérinel, Andrew Stephen Zurkinden, Marco Alves, António J. N. A. Sarmiento
14:10	<b>Theoretical investigation of a wave energy system by applying reactive control using stochastic analysis of the wave state</b> / Andrew Stephen Zurkinden, Matthieu Guerinel, Marco Alves, Lars Damkilde	<b>Classification of Wave Energy Converters by Power Flow</b> /Alexandra A E Price
14:30	<b>Hydrostatic Drive Trains for Wave Energy Converters: Simulation and Experiments for Efficient Design</b> / Yukio Kamizuru, Christian Fissmann, Hubertus Murrenhoff	<b>Station keeping design for floating wave energy devices compared to floating offshore oil and gas platforms</b> / Guilherme Moura Paredes, Lars Bergdahl, Johannes Pal, Claes Eskilsson, Francisco Taveira Pinto
14:50-15:10	<i>Break</i>	
15:10-15:40	<i>Closing session/ Official end of EWTEC2013</i>	
16.00-19.00	<i>INORE workshop</i>	

# TECHNICAL VISIT

## FRIDAY 6 SEPTEMBER

8:00-18.00	<i>Technical Visit to Hanstholm/ DANWEC / Wavestar</i>
	<p><i>Lunch is included. Please remember warm clothing</i></p> <p><b>Pick-up and departure:</b> Conference venue at 8:00 and Cablnn at 8:15</p> <p><b>Drop-off at Aalborg airport:</b> 17:00</p>

Track colour indexing	
1	Wave and tidal energy ressource characterization - wave
2	Wave and tidal energy ressource characterization - tidal
3	Device development and testing - wave
4	Device development and testing - tidal
5	Device hydrodynamics and structural mechanics - wave
6	Device hydrodynamics and structural mechanics - tidal
7	Power take-off and device control
8	Device and environmental modelling
9	Environmental impact and appraisal
10	Social and political aspects

# POSTER SESSION

TUESDAY 2 SEPTEMBER

10:00-10:30

Wave and tidal energy resource characterization - wave
<b>Characterising Turbulence from a 5-beam ADCP when Optimised for Wave Measurements</b> / Abdesslem Bouferrouk, Jon P. Hardwick, Antonella M. Colucci, Lars Johanning
Wave and tidal energy resource characterization - tidal
<b>A Study on the Energy Absorption and Flow Pattern of Staggered Tidal Arrays Using Actuator Disk Theory</b> / C. J. Yang, A. D. Hoang
Device development and testing - wave
<b>Challenging times for wave energy: Reasons and Solutions (Based on the Example Pico)</b> / Victor Winands, Felix Fester
<b>Component Reliability for Wave Energy Converters</b> / Tessa Gordelier, Lars Johanning, Phil Thies
<b>Development of the Danish test site DanWEC</b> / H.J. Brodersen, K. Nielsen, J. P. Kofoed
<b>Update on Research Activities in the MaRINET Project</b> / Jean-Baptiste Richard, Jochen Bard, Jean-Marc Rousset, Björn Elsässer, Karsten Schröder, Eider Robles Sestafe, Matthew Finn, and Lars Johanning
Device development and testing - tidal
<b>SUPERGEN Marine Research: Modelling Wave Induced Flow Effects on Tidal Turbines</b> / Tom McCombes, Cameron Johnstone, Andrew Grant
Device hydrodynamics and structural mechanics - wave
<b>A Novel Simulation Toolbox for Wave Energy Converters</b> / Kourosh Shoele, Mirko Previsic
<b>Preliminary design of a point absorber with linear generator designed for energy production off the Italian coasts</b> / Alessandro Antonini, Adria Moreno Miquel, Renata Archetti, Silvia Bozzi, Giuseppe Passoni
<b>Linear parametric hydrodynamic models based on numerical wave tank experiments</b> / Josh Davidson, Simone Giorgi, John V. Ringwood
<b>Wave disturbance induced by a one-line array of floating Wave Energy Converters</b> / E. Angelelli, B. Zanuttigh
Device hydrodynamics and structural mechanics - tidal
<b>Performance Prediction and Scaling of Vertical Axis Hydrokinetic Turbines</b> / Jinxing Huang, Patrick Boisvert, Voytek Klaptocz, Timothy Waung
<b>Prediction of Lab Scale Cross-Flow Tidal Turbine Performance Using Unsteady RANS</b> / R. M. Stringer, J. Zang, A.J. Hillis
<b>Flexible joint and connectors for WECs and Tidal systems: lessons learned from Offshore and other Marine installations</b> / Alain Skraber
Power take-off and device control
<b>Power Take-off for Tidal Turbines Providing Lowest Cost of Energy</b> / Alexey Matveev, Astrid Røkke
Device and environmental modelling
<b>Tidal current turbine power capture and impact in an idealised channel simulation</b> / Kristen M. Thyng, Thomas Roc
<b>On-Line Estimation of the First-Order Excitation Forces on a Wave Energy Converter</b> / Andrew P. McCabe
<b>Non-Linear Dynamic Modelling of Oscillating Water Column Power Plants</b> / Gabriel Gonzalez, Shahrokh Shahpar, Francisco Castro
<b>Wave Energy Converter Simulation: Development, Code Competition, and Validation Efforts</b> / Alison LaBonte, Brooke White, Michael Lawson, Yi-Hsiang Yu, Kelley Ruehl, Diana Bull, Ye Li, Robert Thresher, Daniel Laird
Environmental impact and appraisal
<b>Data Management Platform for wave energy tests centres within the SOWFIA Project</b> / José Chambel Leitão, Eduardo Aires, Davide Magagna, Daniel Conley, Deborah Greaves, Teresa Simas, Matthew Witt, Claire Embling, Brendan J. Godley, Jean-Baptiste Saulnier, Anne Marie O'Hagan, John O'Callaghan, Brian Holmes, Jan Sundberg, Yago Torre-Enciso
<b>Wave energy, Risky or not?</b> / Soraya Hamawi, Marta Silva
<b>An Open-Access COE Calculation tool for Wave Energy Converters – the Danish approach</b> / J. Fernández-Chozas, J.P. Kofoed, N. E. Helstrup Jensen