

10th International Conference on Airborne Wind Energy – AWEC 2024

Social Program – Wednesday, 24 April 2024

Welcome cocktail

Where: [Puerta de Toledo Campus, Universidad Carlos III de Madrid](#)

When: 16:30-19:00




Technical Program – Thursday, 25 April 2024

Where: [Puerta de Toledo Campus, Universidad Carlos III de Madrid](#)

8:50-9:10	Conference opening – Room Levante (Auditorium)		
	Gonzalo Sánchez-Arriaga, Universidad Carlos III de Madrid (UC3M) Luis Enrique García Muñoz, UC3M Vice Rector for Research and Transfer Cristina Trueba Alonso, Spanish Ministry of Science and Innovation		
9:10-10:10	Plenary Session I – Room Levante (Auditorium)		
9:10-9:30	<i>Generations in the Progress of Wind Energy: Foreshadowing a Pathway for Airborne Technology</i> Jochem Weber ☒, National Renewable Energy Laboratory (NREL)		
9:30-9:50	<i>Development of a Fully Automated Airborne Wind Energy System at University of Porto</i> Fernando A.C.C. Fontes, Universidade do Porto		
9:50-10:10	<i>A Grand Vision of Wind Energy Digitalisation</i> Sarah Barber, Eastern Switzerland University of Applied Sciences		
10:15-11:30	Regular sessions		
	Modeling & Control I Room Levante (Auditorium)	Prototyping & Operation Room Tramontana (0.A.07)	Resource, Siting, Acceptance Room Solano (-1.A.04)
10:15-10:30	<i>Airborne Wind Energy Simulation Software - a Review</i> Uwe Fechner, TU Delft	<i>Development and Testing of an Airborne Wind Energy System</i> Taewoo Nam, Toyota Research Institute of North America (TRINA)	<i>Development of an Airborne Wind Energy Testbed in the United States</i> Brent C. Houchens, Sandia National Labs
10:30-10:45	<i>Methodology to Compare the Potential of Two Concepts for an Energy Ship Using Airborne Wind Energy</i> Nicole Frommer, University of Stuttgart	<i>A Parachute-Based Airborne Wind Energy System and Aerodynamic Characteristics</i> Li Zhang, China Power Engineering Consulting Group Co. (CPECC)	<i>Airborne Wind Energy Sites in Continuous Operation</i> Jan Felix Stroetmann, SkySails Power
10:45-11:00	<i>Deep Learning Investigation for Automatic Control and System Characterization for AWES</i> Pablo Egea Hervás, CT Ingenieros	<i>A Small-Scale and Multipurpose Airborne Wind Energy Prototype</i> Francisco DeLosRíos-Navarrete, CT Ingenieros & UC3M	<i>AWE Resources over Spain: Potential Added Value with Respect to Conventional Renewables</i> Miguel Angel Gaertner, University of Castilla-La Mancha
11:00-11:15	<i>A Sensor Fusion Approach for Accurate Wind Estimation and System Characterization</i> Oriol Cayon, TU Delft	<i>Dual-Cylinder Magnus Effect Kite: Fixed-Distance Flight Tests at Wind Fisher</i> Yacine Boucheriguene, Wind Fisher	<i>Development of RWE's Airborne Wind Test Site in Ireland</i> Laura Riepe, RWE Offshore Wind
11:15-11:30	<i>On the Kite-Platform Interactions in Offshore Airborne Wind Energy Systems: Frequency Analysis and Control Approach</i> Sofia Trombini, Politecnico di Milano	<i>Development of a Winch Separate-Type Tension Power Generation Device for Ground-Gen</i> Hiroki T. Endo, Tsuruoka Kosen	<i>The European Union AWES Centre of Excellence at La Gomera</i> Agustin Arjonilla, CT Ingenieros
11:30-11:50	Coffee break – Cantina in front of Levante (Auditorium)		

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Where: [Puerta de Toledo Campus, Universidad Carlos III de Madrid](#)

11:50-12:50		Regular sessions		
		Techno-Economic Studies I Room Levante (Auditorium)	Materials & Structures Room Tramontana (0.A.07)	Aerodynamics I Room Solano (-1.A.04)
11:50-12:05	<i>The EnerWing: Combining Performance, Longevity, Robustness, and Serial Production for Commercial EnerKite Airborne Wind Converters</i> Nicole Allgaier  , Enerkite	<i>Composite Material Database for Fixed-Wing Airborne Wind Energy Kites</i> Michael Walls  , Composites Testing Laboratory	<i>Aero-Servo Simulations of an Airborne Wind Energy System Using Geometry-Resolved CFD</i> Niels Pynaert, Ghent University	
12:05-12:20	<i>Size and Cost Modeling of a round-Gen Magnus Effect Airborne Wind Energy System</i> Garrett Smith, Wind Fisher	<i>Composite Materials and Manufacturing Methods Tradespace Analysis of AWES</i> Eric J. Lang, University of Dayton Research Institute	<i>Investigation of Controlled Airborne Wind Energy System Flying in Turbulent Atmospheric Conditions Using Large Eddy Simulation</i> Jean-Baptiste Crismer, UCLouvain	
12:20-12:35	<i>Developing a Reference Economic Model for Airborne Wind Energy Systems</i> Rishikesh Joshi, TU Delft	<i>Performance vs. Mass of Box Wing Designs Using Parametrised Finite Element Modelling</i> Dylan Eijkelhof, TU Delft	<i>Aerodynamic Analysis of an Airborne Wind Energy System in Turbulent Wind Conditions</i> Thomas Haas, Ghent University	
12:35-12:50	<i>SkySails PN-14 Power Curve Measurement</i> Thorben Bartsch, SkySails Power	<i>Preliminary Investigation on AWES Structural Loads Due to Turbulence and Significant Transient Wind Events</i> Michael K. McWilliam, DTU	<i>Symmetric and Asymmetric Aero-Structural Coupled Soft-Wing Kite Simulations</i> Jelle A.W. Poland, TU Delft	
12:50-13:00		Conference group photograph – outside building		
13:00-14:15		Lunch – Cantina in front of Levante (Auditorium)		
13:45-14:15		European Academy of Wind Energy Technical Committee meeting – TBA		
14:15-16:00		Plenary Session II – Room Levante (Auditorium)		
14:15-14:35	<i>Airborne Wind Energy as a Viable Solution to Further Rural Electrification</i> David Lecoque, Alliance for Rural Electrification			
15:35-14:55	<i>Challenges in Advancing AWES Development and Permitting</i> Romain Gellée, ENGIE Laborelec			
14:55-16:00	OEM Panel Soft-Wing & Hybrid Systems moderated by Kristian Petrick, Airborne Wind Europe, with Giorgio Sella, Kitenergy, Eduard Ijsselmuiden, Kitepower, Nicole Allgaier  , Enerkite, Rod Read, Windswept, Klaus Heudorfer, for Oceanergy, Mark Hoppe, SkySails Power			
16:00-16:20		Coffee break – Cantina in front of Levante (Auditorium)		
16:20-17:25		Plenary Session III – Room Levante (Auditorium)		
16:20-17:25	OEM Panel Fixed-Wing Systems moderated by Kristian Petrick, Airborne Wind Europe, with Thomas Hårklau, Kitemill, George Hanna, TwingTec, Christof Beaupoil, someAWE, Florian Bauer, Kitekraft, Garret Smith, Wind Fisher, Reinhart Paelinck, Mozaero			
17:25	End-of-day			

Social Program – Thursday, 25 April 2024

Conference banquet

Where: [Restaurant Descaro, Plaza de España 6 Planta 2, 28008, Madrid](#)

When: 20:00-

Technical Program – Friday, 26 April 2024

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9:00-10:20	Plenary Session IV – Room Levante (Auditorium)		
9:00-9:20	<i>On the Phenomenal Airborne Wind Energy Resource</i> Cristina Archer, University of Delaware		
9:20-9:40	Alexander Vandenberghe, WindEurope		
9:40-9:20	<i>Progress Along the Long and Windy Road</i> Reinhart Paelinck, Mozaero		
10:00-10:20	Poster Spotlights		
10:20-10:45	Coffee break – Cantina in front of Levante (Auditorium)		
10:45-11:40	Interactive role-playing game – Room Solano (-1.A.04)		
	<i>Will it Fly? An Interactive Role-Playing Game for Exploring Social Conflicts in Airborne Wind Energy Siting</i> Moderated by Helena Schmidt, TU Delft		
10:45-11:40	Poster Session – Cantina in front of Levante (Auditorium)		
	<i>Variable Mass Tether Modeling of Airborne Wind Energy System</i> Xinyu Long, Nankai University	<i>A Bayesian Model for the Prediction of Extreme Winds</i> Sijjad Hussain, FUUAST	<i>IEA WT48 WP3 Update on AWES Regulations</i> Agustin Arjonilla, CT Ingenieros
	<i>Modeling and Control of a Magnus Effect Kite: Pumping Cycle with Reversing Rotation</i> Estéban Carvalho, Wind Fisher	<i>Optimal Flight Pattern Debate: Circular vs. Figure-Of-Eight</i> Dylan Eijkelhof, TU Delft	<i>Performance of Fixed-wing Airborne Wind Energy Systems: A Parametric Study</i> Rishikesh Joshi, TU Delft
	<i>Towards Mid-Fidelity Aero-Servo-Elastic Simulations of Airborne Wind Energy Systems</i> Gianni Cassoni, Politecnico di Milano	<i>Fluid-Structure Interaction Analysis of a Rigid-Framed Delta Kite for Airborne Wind Energy</i> Iván Castro, UC3M	<i>Material Scaling for Direct-Driven Permanent Magnet Synchronous Generators for Airborne Wind Energy Applications</i> Andrea Trebbi, Politecnico di Milano
	<i>An Aircraft-Integrated Control System Based on Bridle Actuation for AWE Machines</i> Jorge González García, UC3M	<i>Harvest Ocean Energy</i> Franz Ringelhan, ParCy	<i>Flight Path Optimization for Airborne Wind Energy Applications Using Multiple Tethered Aircrafts</i> Mohamed Elhesasy, UAEU
	<i>Evaluation of High-Voltage Submarine Transmission Lines and Battery Integration for Offshore Airborne Wind Energy Systems</i> Andrea Moino, Politecnico di Torino	<i>Life-Cycle Analysis of a Soft-Kite Airborne Wind Energy System</i> Kirsten Coutinho, TU Delft	<i>Integrated Design of Offshore Airborne Wind Energy System: the Floating Platform and the Aircraft</i> Nicola Talia, Politecnico di Torino
	<i>Power Smoothing and Energy Storage System Sizing Strategy for Airborne Wind Energy Farms</i> Rui Carvalho da Costa, Universidade do Porto	<i>A Discussion on Automatic Take-off and Landing Approaches for Airborne Wind Energy Systems</i> Sérgio Vinha, Universidade do Porto	<i>Multifidelity Design Optimisation Models for Composite AWE Wings</i> Ashwin Candade, Enerkite

	<p><i>Wind Resource Analysis For Airborne Wind Energy Systems</i> Li Zhang, CPECC</p> <p><i>Feasibility Analysis to Find an Appropriate Financing Strategy for a 25 KW Kite Generator in the Iran Energy Market</i> Mehrad Zolfaghari, Azad University</p>	<p><i>A Preliminary Estimation of the Absolute Wind Vector in AWE Systems</i> Matteo Bordignon, Politecnico di Milano</p>	<p><i>Modeling and Control of an Airborne Wind Energy Microgrid</i> Syed Hassan Ahmed, Politecnico di Milano</p>
11:45-13:00	Regular sessions		
	<p>Aerodynamics II Room Levante (Auditorium)</p>	<p>Performance & Optimization Room Tramontana (0.A.07)</p>	<p>Scenario Exploration Room Solano (-1.A.04)</p>
11:45-12:00	<p><i>Aerodynamic Shape Optimization of Airfoils and Wings for Crosswind Kites</i> Mojtaba Kheiri, Concordia University</p>	<p><i>Multi-Objective Layout Optimization for Airborne Wind Energy Farms</i> Luís A.C. Roque, Politecnico do Porto</p>	<p><i>Preliminary Design and Scaling Methodology of Flexible Kites for Airborne Wind Energy Applications in the Maritime Sector</i> Achim Kuhn, University of Stuttgart</p>
12:00-12:15	<p><i>Lifting-Line Aerodynamics for Airborne Wind Energy on a Prescribed Path</i> Mac Gaunaa, DTU</p>	<p><i>Simplified Optimal Path-Planning for Airborne Wind Energy Systems</i> Manuel CRM Fernandes, Universidade do Porto</p>	<p><i>Pumping Mode Rotary Airborne Wind Energy Systems: Exploration and Experimentation</i> Christof Beaupoil, someAWE</p>
12:15-12:30	<p><i>Using Leading-Edge Protuberances for Dynamic Stall Control of an Airborne Wind Energy Wing</i> João M. Melo de Sousa, Técnico Lisboa</p>	<p><i>Optimization of Long Trajectories of Dual-Wing AWE Systems with Many Cycles</i> Jakob Harzer, University of Freiburg</p>	<p><i>Economic Value of Dual-Wing AWE Systems: a Case Study</i> Jochem De Schutter, University of Freiburg</p>
12:30-12:45	<p><i>Multi-Component Overset Simulations of Airborne Wind Energy Systems</i> Joris Degroote, Ghent University</p>	<p><i>Rigid-Wake Lifting-Line Vortex Modeling in a Single-Kite AWE Optimal Control Problem</i> Rachel Leuthold, University of Freiburg</p>	<p><i>Towards Atmospheric Event-Driven Loads for Rigid AWES</i> Mark Kelly, DTU</p>
12:45-13:00	<p><i>Towards an Optimal Ram-Air Kite Design for AWE: Recent Advances in the Coupled Aero-Structural Model</i> Paul Thedens, SkySails Power</p>	<p><i>Performance and Control of a Rigid Twin-Kite System for Power Generation</i> Austin Monell, University of Colorado</p>	<p><i>Trajectory Optimization of Dynamic Soaring Considering Closed-Loop Dynamics</i> Alexander Zwenig, TUM</p>
13:00-14:10	Lunch – Cantina in front of Levante (Auditorium)		

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14:10-15:25	Regular sessions		
	<p>Design, Safety & Certification Room Levante (Auditorium)</p>	<p>Performance & Optimization Room Tramontana (0.A.07)</p>	<p>Scenario Exploration Room Solano (-1.A.04)</p>
14:10-14:25	<p><i>Safe Operation and Airspace Integration of Airborne Wind Energy Systems</i> Kristian Petrick, Airborne Wind Europe</p>	<p><i>Reverse Pumping for Rigid Wing Airborne Wind Energy Systems at Large Scale</i> Tareg Mohammed, Politecnico di Milano</p>	<p><i>Optimizing Take-off and Landing Control of Magnus Effect-Based Quadcopter AWES in Challenging Wind Conditions</i> Zakeye Azaki, University of Grenoble</p>

14:25-14:40	<i>Certification Roadmap for AWE Aerostructures</i> Edward M. Fagan, Zero Nexus	<i>Disturbance-Learning Predictive Control of the Ground Station of an Airborne Wind Energy System</i> Tommaso Bonetti, Politecnico di Milano	<i>Automatic Circular Take-off and Landing of Self-Propelled Kites</i> Gabriel M. Fernandes, Universidade do Porto
14:40-14:55	<i>Conceptual Design of Windplanes</i> Filippo Trevisi, Politecnico di Milano	<i>Cascaded Control Approach for a Ground Steered 4-Line Kite System</i> Franziska Hein, University of Stuttgart	<i>Progress on a Rotational Launch and Recovery System for a Fixed Wing Kite</i> Will Kennedy Scott, Swift Airgen
14:55-15:10	<i>Navigating Mass Scaling and Low-Wind Lift Challenges for 20 kW Single-Rotor Kite Turbines</i> Roderick Read, Windswept	<i>Loss-Minimizing Model Predictive Control for the Power Conversion System of an Airborne Wind Energy System</i> Carolina Nicolas-Martín, UC3M	<i>Flight Guidance Concept for the Starting Phase of a Flying Wing Within an Airborne Wind Energy System</i> Dominik Felix Duda, RWTH Aachen
15:10-15:25	<i>Industrialization of Fluid Power Ground Station</i> Per Lindholdt, Diinef	<i>Analysis and Experimental Validation of a Low-Complexity Enhanced Orientation-Based Controller for Tethered Energy Harvesting Systems</i> Jacob B. Fine, University of Michigan	<i>Lift Kite Operation Requirements of a Rotary Airborne Wind Energy System</i> Ziwei Chen, University of Strathclyde
15:25-15:45	Coffee break – Cantina in front of Levante (Auditorium)		
15:45-17:00	Regular sessions		
	AWES Status & Outlook Room Levante (Auditorium)	Techno-Economic Studies II Room Tramontana (0.A.07)	Technology Development Effects Room Nordés (-1.A.01)
15:45-16:00	<i>Markets of a 100 kW-AWE-System and EnerKite's Pilot-Projects for a Perfect Market Entry</i> Nicole Allgaier, Enerkite	<i>Bibliometric Analysis of Airborne Wind Energy for the Last Decade</i> Luís Tiago Paiva, Universidade do Porto	<i>Noisy Kites? Exploring Noise Annoyance for Airborne Wind Energy Systems with a Laboratory Listening Experiment</i> Helena Schmidt, TU Delft
16:00-16:15	<i>Kitepower Wind Energy: RWE Test Site Insights</i> Eduard Ijsselmuiden, Kitepower	<i>Airborne Wind Energy Technology Assessment: Method and Tool</i> Jochem Weber, NREL	<i>Life Cycle Assessment of Floating Offshore Airborne Wind Energy Systems</i> Marilù Sagretti, Politecnico di Milano
16:15-16:30	<i>An Update on Kitekraft's Progress</i> Florian Bauer, Kitekraft	<i>Development of an Open-Source Techno-Economic Model for Fixed-Wing Airborne Wind Energy Kites</i> Edward M. Fagan, Zero Nexus	<i>Community Perspectives on Offshore Airborne Wind Energy: A Survey Study</i> Giovanni Romano, Politecnico di Milano
16:30-16:45	<i>Kitemill's Drive: Pioneering Wind Energy Innovations with the AWE Community for Net Zero 2050</i> Thomas Hårklau, Kitemill	<i>The Potential Future Role of Floating Wind Turbines and Airborne Wind Energy Systems in the North Sea Region</i> Roland Schmehl, TU Delft	<i>Policy and Regulatory Outlook Towards AWE Deployment</i> Kristian Petrick, Airborne Wind Europe
16:45-17:00	<i>Scaling of rigid wing Airborne Wind Energy Systems to MW</i> George Hanna, TwingTec	<i>Product Carbon Footprint of a 100 kW AWE Generator</i> Giorgio Sella, Kitenrg	<i>Preparing AWES Deployment by Onboarding RE Stakeholders with Regards to Social Acceptance</i> Stefanie Thoms, Airborne Wind Europe
17:05-17:15	Poster Awards & Farewell		

Registration package: A welcome desk to collect the registration package will be available in the following times:

- 14:00-17:00 on 24 April 2024 at the registration desk, [Puerta de Toledo Campus](#) of UC3M
- 8:30-16:00 on 25 April 2024 at the registration desk, [Puerta de Toledo Campus](#) of UC3M
- 8:30-14:00 on 26 June 2024 at the registration desk, [Puerta de Toledo Campus](#) of UC3M