



Universidad Carlos III de Madrid, 24-26 April 2024

**Conference Day 1: 25/4/2024**

	Time	Auditorium	Room 1	Room 2
	8:00	Registration		
	9:00	Conference Opening		
	9:10	Plenary Talk 1: Teresa Riesgo		
	9:30	Plenary Talk 2: Paul Veers		
	9:50	Plenary Talk 3: Sarah Barber		
<b>Break 5'</b>				
	10:15	1-Modelling & Control I	2-Aerodynamics I	3-Resource, Test Sites & Acceptance
<b>Coffee</b>				
	11:50	4-Techno-economic Studies I	5-Materials & Structures	6-Prototyping & Operation
	13:05	Conference group photograph – Outside Building xxx		
<b>Lunch</b>				
	13:15			
	14:30	Plenary Talk 4: David Lecoque		
	14:50	7-OEM Panel 1		
<b>Coffee</b>				
	15:55			
	16:15	8-OEM Panel 2		
	17:20	close of day 1		
Dinner	20:00	Restaurante Descaro, Plaza de España 6 Planta 2, 28008, Madrid		



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**Conference Day 2: 26/4/2024**

	Time	Auditorium	Room 1	Room 2
	9:10	Plenary Talk 5: Fernando Fontes		
	9:30	Plenary Talk 6: Cristina Archer		
	9:50	Plenary Talk 7: Reinhart Paelinck		
	10:10	Poster Spotlight		
Coffee	10:30			
	10:45	Poster Session	Interactive Role-Playing Game	
	11:45	9-Aerodynamics II	10-System Performance & Optimization	11-System Scenario Exploration
Lunch	13:00			
	14:10	12-System Design, Safety & Certification	13-Modelling & Control II	14-Takeoff & Landing
Break 5'				
	15:30	Plenary Talk 8: Giles Dickson		
	15:50	15- AWES Status & Outlook	16-Techno-economic Studies II	17- Technology Deployment Effects
Break 5'	16:50			
Farewell	16:55	Incl. poster award		
	17:00	Conference closing		



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Presenting Author	Affiliation	Title
<b>1-Modeling &amp; Control I</b>		
Uwe Fechner	TU Delft	Airborne Wind Energy Simulation Software - a Review
Nicole Frommer	Univ. Stuttgart	Methodology to Compare the Potential of Two Concepts for an Energy Ship Using Airborne Wind Energy
Pablo Egea Hervás	CT Ingenieros	Deep Learning Investigation for Automatic Control and System Characterization for AWES
Oriol Cayon	TU Delft	A Sensor Fusion Approach for Accurate Wind Estimation and System Characterization
Sofia Trombini	Polimi	On the Kite-Platform Interactions in Offshore Airborne Wind Energy Systems: Frequency Analysis and Control Approach
<b>2-Aerodynamics I</b>		
Denes Fischer	TU Berlin	Experimental and Numerical Aerodynamic Investigation of a Modular Reference Wing for AWE
Niels Pynaert	Ghent University	Aero-servo Simulations Using a Geometry-resolved CFD model of an Airborne Wind Energy System
Jean-Baptiste Crismer	Univ. Catholique Louv	Investigation of controlled Airborne Wind Energy System flying in turbulent atmospheric conditions using Large Eddy Simulation
Thomas Haas	Ghent University	Aero-Elastic Analysis of an Airborne Wind Energy System in Turbulent Wind Conditions
Jelle Poland	TU Delft	Symmetric and Asymmetric Aero-Structural Coupled Soft-Wing Kite Simulations
<b>3- Sites &amp; Resource</b>		
Brent C. Houchens	Sandia National Labs	Development of an Airborne Wind Energy Testbed in the United States
Jan Felix Stroetmann	Skysails Power GmbH	Airborne Wind Energy Sites in Continuous Operation
Miguel Angel Gaertner	Univ. Castilla la Manc	AWE Resources over Spain: Potential Added Value with respect to Conventional Renewables
Laura Riepe	RWE Offshore Wind G	Development of RWE's Airborne Wind Test Site in Ireland
Agustin Arjonilla	CT Ingenieros	The EU AWES Centre of Excellence at Gomera
<b>4-Techno-economic Studies I</b>		
Frédéric Bourgault	New Leaf Managemer	Floating Kites: A Disruptive Economical Solution to Deployment of Deep Offshore AWE Kite Farms Deployment of Deep Offshore AWE Kite Farms
Garrett Smith	Wind Fisher	Size and Cost Modeling of a Ground-Gen Magnus Effect Airborne Wind Energy System
Rishikesh Joshi	TU Delft	Developing a Reference Economic Model for Airborne Wind Energy Systems
Thorben Bartsch	SkySails Power GmbH	SkySails PN-14 Power Curve Measurement
Maximilian Ranneberg	Enerkite	Power Curve Maps for Airborne Wind Energy Systems



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### 5-Materials & Structures

Cormac Ó Cadhain	Composites Testing Lab	Composite material database for fixed-wing airborne wind energy kites
Eric J. Lang	Univ. Dayton Research	Composite Materials and Manufacturing Methods Tradespace Analysis of AWES
Dylan Eijkelhof	TU Delft	Performance vs. mass of box wing designs using parametrised finite element modelling
Michael K. McWilliam	DTU	Preliminary investigation on AWES structural loads due to turbulence and significant transient wind events
Florian Breipohl	Enerkite	The EnerWing: combining performance, longevity, robustness, and serial production for commercial EnerKite Airborne Wind Converters

### 6-Prototyping & Operation

Taewoo Nam	Toyota	Development and Testing of an Airborne Wind Energy System
Bixiong Luo	CPEC Group	Numerical simulation of aerodynamic characteristics of a parachute-based airborne wind energy system
Francisco de los Rios	UC3M	A Small-Scale and Multipurpose Airborne Wind Energy Prototype
Yacine Boucheriguene	Wind Fisher	Dual-Cylinder Magnus Effect Kite: Fixed-Distance Flight Tests at Wind Fisher
Hiroki T Endo	Tsuruoka Kosen	Development of a winch separate-type tension power generation device for Ground-Gen

### 7-OEM Soft & Semi-fixed Wing Systems

Giorgio Sella	Kitenrg	
Johannes Peschel	Kitepower	
Florian Breipohl	Enerkite	
Rod Read	Windswept& Int.	
TBA	Oceanergy	
Mark Hoppe	Skysails	

### 8-OEM Fixed-wing Systems

Thomas Hårklau	Kitemill	
Rolf H. Luchsinger	TwingTec AG	
Christof Beaupoil	SomeAWE Labs	
Florian Bauer	Kitekraft	
Garret Smith	Windfisher	



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### 9-Aerodynamics II

Mojtaba Kheiri	Concordia University	Aerodynamic shape optimization of airfoils and wings for crosswind kites
Mac Gaunaa	TU Denmark	Lifting Line Aerodynamics for Airborne Wind Energy on a Prescribed Path
João Manuel Melo de	Instituto Superior Técnico	Using Leading-Edge Protuberances for Dynamic Stall Control of an Airborne Wind Energy Wing
Joris Degroote	Ghent University	Multi-Component Overset Simulations of Airborne Wind Energy System
Paul Thedens	SkySails Power GmbH	Towards an optimal ram-air kite design for AWE: recent advances in the coupled aero-structural model

### 10-System Performance & Optimization

Luís A.C. Roque	Politecnico do Porto	Multi-Objective Layout Optimization for Airborne Wind Energy Farms
Manuel C.R.M. Fernandes	Universidade do Porto	Simplified Optimal Path-Planning for Airborne Wind Energy Systems
Jakob Harzer	Univ. Freiburg	Optimization of Long Trajectories of Dual-Wing AWE Systems with Many Cycles
Rachel Leuthold	Univ. Freiburg	Rigid-Wake Lifting-Line Vortex Modeling in a Single-Kite AWE Optimal Control
Austin Monell	University of Colorado	Performance and Control of a Coupled Twin-Kite System for Power Generation

### 11-System Scenario Exploration

Achim Kuhn	Univ. Stuttgart	Preliminary design and scaling methodology of flexible kites for airborne wind energy applications in the maritime sector
Christof Beaupoil	SomeAWE Labs	Pumping mode rotary airborne wind energy systems - exploration and experimentation
Mohamed Elhesasy	UAEU	Flight Path Optimization for Airborne Wind Energy Applications Using Multiple Tethered Aircrafts
Mark Kelly	DTU	Towards atmospheric event-driven loads for rigid AWES
Alexander Zwenig	TUM	Trajectory Optimization of Dynamic Soaring Considering Closed-Loop Dynamics

### 12-System Design, Safety & Certification

Corey Houle	TwingTec AG	Safe Operation and Airspace Integration of Airborne Wind Energy Systems
Edward M Fagan	Zero Nexus	Certification Roadmap for AWE Aerostructures
Filippo Trevisi	Polimi	Multidisciplinary design of windplanes
Per Lindholdt	Diinef	Industrialization of Fluid Power Ground Station
Rod Read	Windswept and Interest	Navigating Mass Scaling and Low-Wind Lift Challenges for 20kW Single Rotor Kite Turbines



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### 13-Modeling & Control II

Tareg Mohammed	Polimi	Reverse Pumping for Rigid Wing Airborne Wind Energy Systems at Large Scale
Tommaso Bonetti	Polimi	Disturbance-Learning Predictive Control of the Ground Station of an Airborne Wind Energy System (AWES)
Franziska Hein	University of Stuttgart	Cascaded Control Approach for a Ground Steered 4-Line Kite System
C. Nicolas-Martín	UC3M	Loss-minimizing Model Predictive Control for the Power Conversion System of an Airborne Wind Energy System
Jacob B. Fine	University of Michigan	Analysis and Experimental Validation of a Low-Complexity Enhanced Orientation-Based Controller for Tethered Energy Harvesting Systems

### 14-Take-off & Landing

Zakeye Azaki	Univ. Grenoble	Optimizing Take-off and Landing Control of Magnus Effect-Based Quadcopter AWES in Challenging Wind Conditions
Gabriel M. Fernandes	Universidade do Porto	Automatic Circular Take-off and Landing of Self-Propelled Kites
Will Kennedy Scott	Swift Airgen Ltd	Progress on a rotational launch and recovery system for a fixed wing kite
Dominik Felix Duda	RWTH Aachen Univer	Flight guidance concept for the starting phase of a flying wing within an AWES
Ziwei Chen	University of Strathcly	Lift Kite Design of a Rotary Airborne Wind Energy System

### 15-AWES Status & Outlook

Luís Tiago Paiva	Universidade do Porto	Bibliometric Analysis of Airborne Wind Energy for the last decade
Johannes Peschel	Kitepower	Kitepower Wind Energy: RWE Test Site Insights
Florian Bauer	KiteKraft	An Update on Kitekraft's Progress
Thomas Hårklau	Kitemill	Kitemill's Drive: Pioneering Wind Energy Innovations with the AWE Community for Net Zero 2050.
Rolf H. Luchsinger	TwingTec AG	Scaling of rigid wing Airborne Wind Energy Systems to MW

### 16-Techno-economic Studies II

Nicole Allgaier	EnerKite	Markets of a 100kW-AWE-System and EnerKite's Pilot-Projects for a Perfect Market Entry
Jochem Weber	NREL	Airborne Wind Energy Technology Assessment: Method and Tool
Vahid Fakhari	University of Galway	Development of an open-source techno-economic model for fixed-wing airborne wind energy kites
Roland Schmehl	TU Delft	The potential future role of floating wind turbines and airborne wind energy systems in the North Sea region
Giorgio Sella	Kitenrg	Product Carbon Footprint of a 100 kW AWE generator



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<b>17-Technology Deployment Effects</b>		
Helena Schmidt	TU Delft	Winds of Influence: Examining the Socio-Political Acceptance of Airborne Wind Energy with Insights from Qualitative Stakeholder Interviews
Marilù Sagretti	Polimi	Sustainability Assessment of Offshore Airborne Wind Energy Systems
Giovanni Romano	Polimi	Community Perspectives on Offshore Airborne Wind Energy: A Survey Study
Kristian Petrick	AW Europe	Policy and regulatory outlook towards AWE deployment
Stefanie Thoms	AW Europe	Preparing AWES deployment by onboarding RE stakeholders with regards to Social Acceptance
<b>Interactive Role-Playing Game</b>		
Helena Schmidt	TU Delft	Will it Fly? An Interactive Role-Playing Game for Exploring Social Conflicts in Airborne Wind Energy Siting
<b>Poster</b>		
Xinyu Long	Nankai University	Variable Mass Tether Modeling of Airborne Wind Energy System
Engy Elshazly	London South Bank U	Pre-design Parameters of Airborne Wind Energy System and its Applicability in Egypt
Sijjad Hussain	Govt. Zamindar Post C	A Bayesian model for the prediction of extreme winds
Agustin Arjonilla	CT Ingenieros	IEA WT48 WP3 Update on AWES Regulations
Yacine Boucheriguene	Wind Fisher	Modeling and Control of a Magnus Effect Kite: Pumping Cycle with Reversing Rotation
Dylan Eijkelhof	TU Delft	Optimal flight pattern debate: Circular vs. Figure-of-eight
Rishikesh Joshi	TU Delft	Performance of Fixed-wing Airborne Wind Energy Systems: A Parametric Study
Gianni Cassoni	Polimi	Towards mid-fidelity aero-servo-elastic simulations of airborne wind energy systems
Dr. Attitou Aboubakr	Institute of Structural C	An Overview of Offshore Wind Energy: Technical and Market Dynamics in Europe, USA, China, and Africa
Mahmoud Soliman	Skysails GmbH	Adapted Flight Guidance for Variable Trim Kites on SkySails AWE System
Iván Castro	UC3M	Fluid-Structure Interaction Analysis of a Rigid-Framed Delta Kite for Airborne Wind Energy
Andrea Trebbi	Polimi	Material Scaling for Direct-Driven Permanent Magnet Synchronous Generators for Airborne Wind Energy Applications
Jorge González García	UC3M	An aircraft-integrated control system based on bridle actuation for AWE machines
Franz Ringelhan	ParCy	Harvest Ocean Energy
Andrea Moino	Polito	Evaluation of High-Voltage Submarine Transmission Lines and Battery Integration for Offshore Airborne Wind Energy Systems Integration for Offs
Roland Schmehl	TU Delft	Life-Cycle Analysis of a Soft-Kite Airborne Wind Energy System
Nicola Talia	Polito	Integrated Design of Offshore Airborne Wind Energy System: the Floating Platform and the Aircraft
Rui Carvalho da Costa	Universidade do Porto	Energy Storage System Sizing within a Power Smoothing Strategy for Airborne Wind Energy Farms
Sérgio Vinha	Universidade do Porto	A Discussion on Automatic Take-off and Landing Approaches for Airborne Wind Energy Systems
Jochem De Schutter	University of Freiburg	Economic Value of Dual-Wing AWE Systems: a Case Study
Ashwin Candade	EnerKite GmbH	Multifidelity design optimization models for composite AWE wings
Li Zhang	China Power Enginee	Wind Resource Analysis For Airborne Wind Energy Systems
Matteo Bordignon	Polimi	A Preliminary Estimation of the Absolute Wind Vector in AWE Systems
Syed Hassan Ahmed	Polimi	Modeling and Control of an Airborne Wind Energy Microgrid
Mehrad Zolfaghari	Azad University	Feasibility analysis to find an appropriate financing strategy for a 25 KW kite generator in the Iran energy market