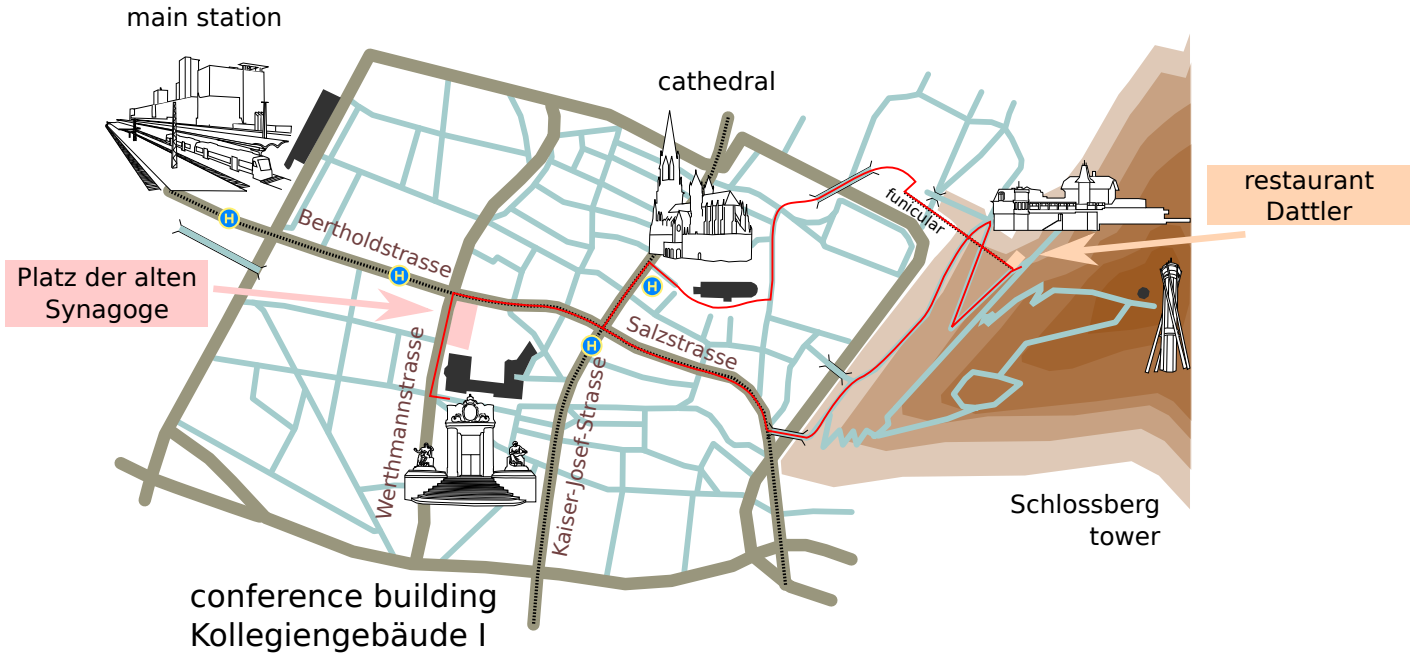
AIRBORNE WIND ENERGY CONFERENCE 2017

5-6 OCTOBER
UNIVERSITY
OF FREIBURG
GERMANY
awec2017.com

Maps, Local Information, and Program

Map of Freiburg Conference Locations



conference building
Kollegiengebäude I

Platz der Universität 3
79098 Freiburg im Breisgau

Local Contacts

AWEC 2017 is hosted by the Systems Control and Optimization Laboratory of the University of Freiburg.

Systems Control and Optimization Laboratory
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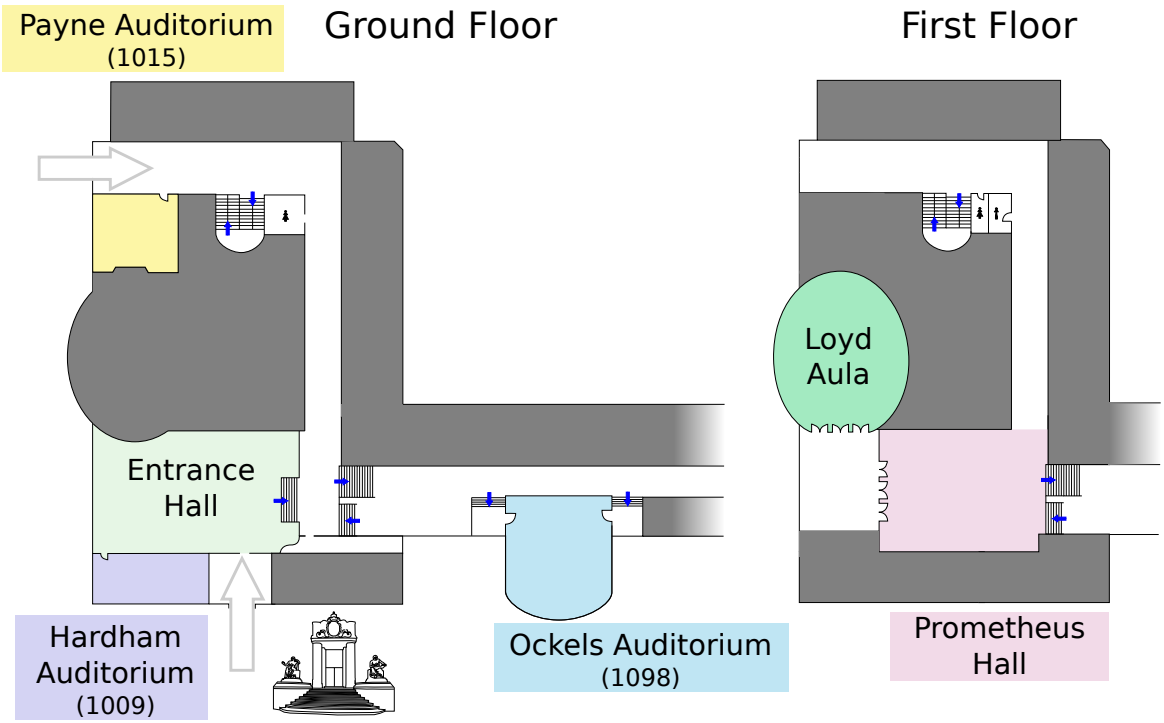
Public Transportation

Public transportation in Freiburg is all run by VAG (Freiburg Verkehrs AG). The tram, bus, and local rail system all have the same tickets. A one-way ticket within the city costs Euro 2,20. A cheaper option if you are planning on taking multiple trips is to buy 2 x 4FahrtenKarte. This costs Euro 14,40 and gives you 2 tickets with 4 rides possible on each. You must punch the Fahrkarte in the machine once you board the vehicle. Transfers are allowed on the same ticket within a one hour period. Tickets can be bought on buses or at ticket machines around the city.

Internet

Wifi in the conference building is available through the network eduroam, which can be accessed either with a host university account, or through the network (SSID) AWEC, which can be accessd with the password *uf-560Jahre*.

Map of Conference Building



Program - Wednesday, 4 October 2017

Time		
	Outdoors Exhibition	*Beyond the Sea*, *Enerkite*, *ETH Zurich*, *TwingTec*, *Uni Bonn*, *Uni Freiburg*, *Wind Drones*, and *Windswept and Interesting* [Platz der alten Synagoge]
13:00	Press Meeting	
14:00	Public Exhibition	
16:00	Registration	[Entrance Hall]
	City Tours (1.5 hours, each)	meet in [Entrance Hall]
16:30	English Tour 1	
16:45	German Tour	
17:00	English Tour 2	
18:30	**Welcome Reception**	[Entrance Hall]

Program - Thursday, 5 October 2017

Time			
8:30	Registration [Entrance Hall]		
9:00	**Conference Opening** [Loyd]		
9:20	**Keynote**	Fort Felker, *Makani / X* Progress and Challenges in Airborne Wind Energy	
10:10	**Poster Spotlights 1**	Poster Presenters Session 1	
10:30	Coffee [Prometheus]		
11:00	**Poster Session 1** [Prometheus]		
	Christoph Sieg, *Kiteswarms Ltd.* AWEsome: An affordable standardized open-source test platform for AWE systems	Dominic Keidel, *ETH Zurich* Challenges of Morphing Wings for Airborne Wind Energy Systems	Lars Bäckström, *Umeå Uni* Fusing Kite and Tether into one Unit
	Benoît Python, *Kitepower B.V.* Methodology Improvement for Performance Assessment of Pumping Kite Power Wing	Gonzalo Sánchez-Arriaga, *Uni Madrid* Kite Flight Simulators Based on Minimal Coordinate Formulations	Jochem de Schutter, *Uni Freiburg* Inertia-Supported Pumping Cycles with a Roto-Kite
	Ricardo Borobia Moreno, *Uni Madrid* Application of the Estimation-Before-Modeling Method to the Aerodynamic Characterization of Power Kites	Helmut Araujo, *UF Santa Catarina* Tether Traction Control in Pumping-Kite Systems	Bernard van Hemert, *Ampyx Power B.V.* The Sea-Air-Farm project
	Prabu Sai Manoj Mandru, *TU Delft* Multiple-Wake Vortex Method for Leading Edge Inflatable tube kites used in Airborne Wind Energy Systems	Yashank Gupta, *Grenoble INP* Modeling and control of Magnus effect-based AWE systems	Jonathan Dumon, *GIPSA-lab / CNRS* A Study on wind power evolutions
	Sören Sieberling, *Ampyx Power B.V.* An Optimal Sizing Tool for Airborne Wind Energy Systems	Roderick Read, *Windswept & Interest.* Daisy & AWES Networks: Scalable, autonomous AWES with continuous power output	Thomas Hårklau, *Kitemill AS* Policy Recommendation for Airborne Wind Energy
	Chloé Duport, *ENSTA Bretagne* Kite as a Beam Modelling Approach: Assessment by Finite Element Analysis	Oliver Tulloch, *Uni Strathclyde* Modelling and Simulation Studies of a Networked Rotary Kite System	
	Commercialization 1 [Ockels]	**Ground Stations** [Payne]	**Safety** [Hardham]
11:30	Johannes Peschel, *Kitepower B.V.* Kitepower – Commercializing a 100 kW mobile wind energy system	Hisham Eldeeb, *TU Munich* Highly Efficient Fault-Tolerant Electrical Drives for Airborne Wind Energy Systems	Volkan Salma, *ESTEC-ESA / TU Delft* Systematic Reliability and Safety Analysis for Kite Power System
11:50	Gustaf Kugelberg, *KiteX* Policy Development and Roadmapping for Kite Energy	Mahdi E. Salari, *Uni Limerick* Operation of Direct Interconnected AWE Systems under Normal and Fault Conditions	Fernando Fontes, *Uni Porto* Guaranteed Collision Avoidance in Multi–Kite Power Systems
12:10	Lode Carnel, *Kitemill AS* From prototype engineering towards commercialization	Frederic Bourgault, *New Leaf Mngt.* Efficient and Power Smoothing Drive-Train Concept for Pumping Kite Generators using Hydraulics	Carlos Perez Damas, *MIT* Safety Analysis of Airborne Wind Energy Systems
12:30	Lunch [Entrance Hall]		
	Commercialization 2 [Ockels]	**Systems Control** [Payne]	**Wind Resource** [Hardham]
14:00	Rolf Luchsinger, *TwingTec AG* Off-grid, Off-shore and Energy Drones: TwingTec's Roadmap to Wind Energy 2.0	Andrea Zanelli, *Uni Freiburg* Nonlinear Model Predictive Control of a Large-Scale Quadrotor	Ilona Bastigkeit, *Fraunhofer IWES* High Altitude LiDAR Measurements of the Wind Conditions for Airborne Wind Energy Systems
14:20	Alexander Bormann, *EnerKíte GmbH* Airborne Wind Energy – a game changing technology and a global success?	Eva Ahbe, *ETH Zurich* Stability Certificates for a Model-Based Controller for Autonomous Power Kites	Markus Sommerfeld, *Uni Victoria* LES generated turbulent inflow fields from mesoscale modeling driven by LiDAR measurements
14:40	Peter Harrop, *IDTechEx Ltd.* Commercialisation of AWE 2017–2037	Sebastian Rapp, *TU Delft* Towards Robust Automatic Operation of Rigid Wing Kite Power Systems	Thomas Haas, *KU Leuven* Large Eddy Simulation of Airborne Wind Energy Systems in the Atmospheric Boundary Layer
15:00	Simon Heyes, *Kite Power Systems Ltd.* Kite Power Systems – Update & Progress on the Development of A 500kW Kite Energy System At West Freugh, Scotland	Petr Listov, *EPF Lausanne* Nonlinear Model Predictive Path Following Control of a Fixed-Wing Single-Line Kite	David Wölfle, *EWC Weather Consult* Long-term corrected wind resource estimation for AWE converters
15:20	Coffee [Prometheus]		
	System Optimization [Ockels]	**Concept Design** [Payne]	**Policy Discussion** [Hardham]
15:50	Durk Steenhuizen, *Ampyx Power B.V.* Design Automation in the Conceptual Design of Airborne Wind Energy Systems	Ahmad Hably, *Grenoble INP* AWE systems in an innovation course	Kristian Petrick, *Airborne Wind Europe* AWE Policy Initiative – preparing the grounds for AWE-specific incentive schemes
16:10	Florian Bauer, *TU Munich* Power Curve and Design Optimization of Drag Power Kites	Lorenz Affentranger, *ETH Zurich* ftero – On the Development of an Airborne Wind Energy System	
16:30	Jonas Koenemann, *Ampyx Power B.V.* OpenAWE: An Open Source Toolbox for the Optimization of AWE Flight Trajectories	Manfred Quack, *SkySails Power GmbH* Recent Advances in Automation of Tethered Flight at SkySails Power	
16:50	**Plenary**	Lorenzo Fagiano, *Politecnico Milano* [Loyd] On autonomous take-off of tethered rigid wings in compact space for airborne wind energy	
17:15		Michiel Kruijff, *Ampyx Power B.V.* AP-3, a safety and autonomy demonstrator for utility-scale Airborne Wind Energy	
17:40	End-of-Day		
18:30	**Reception** [Restaurant Dattler]		
19:30	**Dinner** and **Short Documentary**	Andrea Dunlap, *Makani / X* Pulling Power from the Sky: Makani and the Collective Ideal of Airborne Wind	

Program - Friday, 6 October 2017

Time			
8:30	Registration [Entrance Hall]		
9:00	**Keynote**	Henrik Stiesdal, *DTU* Airborne Wind Energy – Challenges and Opportunities Based on Experiences From the Conventional Wind Industry [Loyd]	
9:50	**Poster Spotlights 2**	Poster Presenters Session 2	
10:10	Coffee [Prometheus]		
10:40	**Poster Session 2** [Prometheus]		
	Jonas Schlagenhauf, *Uni Freiburg* Non-linear modeling with learned parameter refinements for NMPC on a real-world aerodynamic system	Mojtaba Kheiri, *Concordia Uni* A Wake Model for Crosswind Kite Systems	Paul Williams, *Ampyx Power B.V.* GNSS Jamming Mitigation for Large-Scale Airborne Wind Energy Systems Using Cable Measurements
	Manuel Soler, *Uni Madrid* Determination of Optimal Control Laws in Airborne Wind Energy Scenarios With a Self-Consistent Kite Dynamics Model	Antonello Cherubini, *Sant'Anna Uni* Preliminary test on automatic take-off and landing of a multi-drone low-drag Airborne Wind Energy System	Kurt Hallamasek, *Makani / X* A low-cost Fiber Optic Avionics Network for Control of an Energy Kite
	Burkhard Rieck, *EnerKite GmbH* Comparison of Launching & Landing Approaches	Christof Beaupoil, *someAWE.org* Rotary airborne wind energy systems with ground based power generation: Overview and practical experiences	Matheus Winter, *UF Santa Catarina* An Open-source Software Platform for AWE systems
	Johannes Oehler, *TU Delft* Experimental Characterization of a Force-Controlled Flexible Wing Traction Kite	KyoungHo Cha, *Chosun Uni* Pumping Cycle Based on Elastic Tether	
	Jan Hummel, *TU Berlin* Automatic Measurement and Characterization of the Dynamic Properties of Tethered Flexible Wings	Uwe Fechner, *Aenarete – Smart Wind* On the Way to Small-Scale Wind Drones – A Networked Approach	
	Julia Steiner, *TU Delft* High fidelity aeroelastic analysis of a membrane wing	Hiroshi Okubo, *Kanagawa IT* High-Sky Wind Energy Generation on Tethered System	
	Aero-Struct. Modelling [Ockels]	**Testing & Experimentation** [Payne]	**Design & Environment** [Hardham]
11:10	Paul Thedens, *Uni Freiburg* Ram-Air Kite Reinforcement Optimisation for Airborne Wind Energy Applications	Mitchell Cobb, *UNC Charlotte* Evolution of a Lab-Scale Platform for Dynamically-Scalable Characterization of Airborne Wind Energy System Flight Dynamics and Control	Rachel Leuthold, *Uni Freiburg* The effect of realistic wind profiles on multiple-kite system optimal control
11:30	Axelle Viré, *TU Delft* Direct numerical simulations of flow past a leading-edge inflatable wing	Hiroki T. Endo, *Kyushu Uni* Experimental setup to study airborne wind energy generation using a train of kites	Elena Malz, *Chalmers* AWE Optimization on Big Wind Data
11:50	Mikko Folkersma, *TU Delft* Fluid-Structure Interaction Simulations on Kites	Tore Meinert, *Lista AWE Center AS* The establishment of an airborne wind energy test center in Lista, Norway	Gabriele Bedon, *ECN* Offshore Airborne Wind Energy TKI Sea-Air-Farm Aerodynamic Performance, Installation and Operation and Maintenance
12:10	Maximilian Ranneberg, *viiflow* Fast Aero-elastic Analysis for Airborne Wind Energy Wings using Viscous-Inviscid Interaction	Joep Breuer, *Kitepower B.V.* Unmanned Valley Valkenburg – Drone and Airborne Wind Energy Testing in the Netherlands	Sil Drenth, *Ampyx Power B.V.* Limiting wave conditions for landing airborne wind energy aircraft on a floating platform
12:30	Lunch [Entrance Hall]		
	Aero-Struct. Optimization [Ockels]	**Sensors and Identification** [Payne]	**AWE Outlook** [Hardham]
14:00	Gael de Oliveira, *TU Delft* Multiobjective Airfoil Design for Airborne Wind Energy	Giovanni Licitra, *Ampyx Power B.V.* System Identification of a Rigid Wing Airborne Wind Energy Pumping System	Roland Schmehl, *TU Delft* EU Horizon 2020 projects AWESCO and REACH – Advancing Airborne Wind Energy Technologies by Systematic Research and Development
14:20	Urban Fasel, *ETH Zurich* Aerostructural Analysis and Optimization of Morphing Wings for AWE Applications	Fabian Girrbach, *Xsens Technologies* On Robust Sensor Fusion of GNSS and IMU for Airborne Wind Energy Systems	Udo Zillmann, *Airborne Wind Europe* Do We Still Need Airborne Wind Energy?
14:40	Richard Leloup, *Beyond the Sea®* Kite profile optimization using Reynolds-Averaged-Navier-Stokes flow simulations	Tarek Dief, *Kyushu Uni* System Identification, Adaptive Control, and Experimental Measurements of a Pumping Kite Power System	Nicholas Tucker, *Makani / X* A Techno-Economic Analysis of Energy Kites
15:00	Ashwin Candade, *EnerKíte GmbH* Structural Analysis and Optimization of an Airborne Wind Energy System	Eduardo Schmidt, *UF Santa Catarina* Radio-Frequency Positioning for Airborne Wind Energy Systems	Henrik Wall, *E.ON GmbH* An Energy Utility Perspective on and Approach to Airborne Wind
15:20	Coffee [Prometheus]		
15:50	**Poster Prize Award**	Fort Felker, *Makani / X*, Lorenzo Fagiano, *Politecnico Milano*, and Roland Schmehl, *TU Delft* (Jury) [Loyd]	
16:10	**Panel Discussion - "AWE in 2025"**		
17:20	**Conference Closing**		
17:30	End-of-Day		