Wake Conference 2023

TUESDAY 20 JUNE

09.00-10.00 **REGISTRATION AND COFFEE (OUTSIDE E22)**

10.00-11.00 **OPENING SESSION (E22)**

Professor **Stefan Ivanell**, Uppsala University and Professor **Jens Nørkær Sørensen**, Technical University of Denmark/Uppsala University.

11.00-12.00 **SESSION I - INDUSTRY PERSPECTIVE, ECONOMICS & LARGE CAMPAIGNS (E22)**

TIME	TITLE	PRESENTING AUTHOR
11.00-11.20	How Fast is Fast Enough? Industry Perspectives on the Use of Large-eddy Simulation in Wind Energy	Asmuth, Henrik
11.20-11.40	Assessment of energy production and costs associated with a massive exploitation of wind power in the North Sea	Nørkær Sørensen, Jens
11.40-12.00	Overview of recent observations and simulations from the American WAKE experiment (AWAKEN) field campaign	Moriarty, Patrick

12.00-13.10 **LUNCH (JODA)**

13.10-14.50 **SESSION II A - COMPLEX TERRAIN (E22)**

TIME	TITLE	PRESENTING AUTHOR
13.10-13.30	Boundary-layer aerodynamics over long wind farms over hilly terrains	Segalini, Antonio
13.30-13.50	Multi-scale modeling of a wind turbine wake in complex terrain	Kale, Baris
13.50-14.10	High-fidelity simulations of wake-to-wake interaction in an atmospheric boundary layer over a complex terrain	Jané-Ippel, Christian
14.10-14.30	Modelling of wind turbine wakes over forests along the diurnal cycle	Olivares Espinosa, Hugo
14.30-14.50	Implications of complex terrain topography on the performance of a real wind farm	Leonardi, Stefano

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13.10-14.50 **SESSION II B - ALTERNATIVE DESIGNS (E31)**

TIME	TITLE	PRESENTING AUTHOR
13.10-13.30	Experimental and numerical study of the wake deflections of scaled vertical axis wind turbine models	Ferreira, Carlos
13.30-13.50	Large-Eddy Simulation of airborne wind energy systems wakes	Crismer, Jean-Baptiste
13.50-14.10	The effect of the tower's modeling on the aero-elastic response of the NREL 5 MW wind turbine	Cherubini, Stefania
14.10-14.30	Near wake of the X-Rotor vertical-axis wind turbine	Bensason, David
14.30-14.50	Wake interactions behind individual-tower multi-rotor wind turbine configurations	Brown, Kenneth

14.50-15.30 **COFFEE BREAK (OUTSIDE E22)**

15.30-17.10 **SESSION III A - ABL MODELING (E22)**

TIME	TITLE	PRESENTING AUTHOR
15.30-15.50	Can we yet do a fairer and more complete validation of wind farm parametrizations in the WRF model?	Peña, Alfredo
15.50-16.10	High-resolution satellite observations to account for coastal gradient in wind resource assessment: application to French coastal areas	Cathelain, Marie
16.10-16.30	RANS simulation of a wind turbine wake in the neutral atmospheric pressure-driven boundary layer	Baungaard, Mads Christian
16.30-16.50	Wind Power Prediction using Multi-Task Gaussian Process Regression with Lagged Inputs	Avila, Francisco Javier Jara
16.50-17.10	Influence of free-stream turbulence on the boundary layer stability of a wind turbine airfoil and near wake	Fava, Thales Coelho Leite

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15.30-17.10 **SESSION III B - DATA PROCESSING & MACHINE LEARNING (E31)**

TIME	TITLE	PRESENTING AUTHOR
15.30-15.50	Processing of offshore measurement data for multi-fidelity wake model performance assessments	Freitas, Sylvio
15.50-16.10	RANS-AD based ANN Surrogate Model for Wind Turbine Wake Deficits	Réthoré, Pierre-Elouan
16.10-16.30	Graph machine learning for predicting wake interaction losses based on SCADA data	Hammer, Florian
16.30-16.50	Physics informed neural networks for wind field modelling in wind farms	Cobelli Gonzalez, Patricia
16.50-17.10	Estimation of wind turbine wakes with generative-adversarial networks	López, Bruno

18.00 **MINGLE (ITALIENAREN)**

Directions:

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WEDNESDAY 21 JUNE

09.00-10.20 **SESSION IV - LARGE ROTORS & FARM EFFECTS (E22)**

TIME	TITLE	PRESENTING AUTHOR
09:00-09.20	Entrainment model for wind turbine wakes considering blockage effect	Meng, Hang
09.20-09.40	Investigation of Farm-to-Farm Interactions and Blockage Effects from AWAKEN Using Large-Scale Numerical Simulations	Cheung, Lawrence C.
09.40-10.00	Impact of the rotor blades elasticity on the loads and wake of the large IEA 15-MW wind turbine	Trigaux, Francois
10.00-10.20	LiDAR Measurements to Investigate Farm-to-Farm Interactions at the AWAKEN Experiment	Iungo, Giacomo Valerio

10.20-10.50 **COFFEE BREAK (OUTSIDE E22)**

10.50-11.50 **SESSION V - WAKE MODELING I (E22)**

TIME	TITLE	PRESENTING AUTHOR
10.50-11.10	Validation of a Lattice Boltzmann Solver Against Wind Turbine Response and Wake Measurements	Korb, Henry
11.10-11.30	Cross-code verification of non-neutral ABL and single wind turbine wake modelling in LES	Hodgson, Emily Louise
11.30.11.50	Simulating wake losses of the Danish Energy Island wind farm cluster	van der Laan, Paul

11.50-13.10 **PHOTO SESSION ALMEDALEN + LUNCH (JODA)**

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13.10-14.50 **SESSION VI A - WAKE MODELING II (E22)**

TIME	TITLE	PRESENTING AUTHOR
13.10-13.30	A RANS-based Surrogate Model For Simulating Wind Turbine Interaction	Criado Risco, Javier
13.30-13.50	A baseline for ensemble-based, time-resolved inflow reconstruction for a single turbine using large-eddy simulations and latent diffusion models	Rybchuk, Alex
13.50-14.10	Numerical investigation of rotor asymmetry to promote wake recovery	Abraham, Aliza
14.10-14.30	Transient phenomena study in wind energy by means of LES simulations: impact of wind direction changes	Barile, Dimas Alejandro
14.30-14.50	Large Eddy Simulations of wind turbine wakes in sheared inflows	Benard, Pierre

13.10-14.50 **SESSION VI B - EXPERIMENTAL STUDIES (E31)**

TIME	TITLE	PRESENTING AUTHOR
13.10-13.30	Experiments on upstream induction and wake flow for multirotor wind turbines	Bartl, Jan
13.30-13.50	Wind turbine wake: bridging the gap between large eddy simulations and wind tunnel experiments	Gillyns, Emmanuel
13.50-14.10	Experimental analysis of the wake behind a small wind-turbine model in yaw	Micheletto, Derek
14.10-14.30	Comparing scanning lidar configurations for wake measurements based on the reduction of associated measurement uncertainties	Hung, Lin-Ya
14.30-14.50	Holistic scan optimization of nacelle-mounted lidars for inflow and wake characterization at the RAAW and AWAKEN field campaigns	Bodini, Nicola

14.50-15.30 **COFFEE BREAK (OUTSIDE E22)**

15.30-17.10 **SESSION VII A - WIND FARM FLOWS (E22)**

TIME	TITLE	PRESENTING AUTHOR
15.30-15.50	Quantifying and clustering the wake-induced perturbations within a wind farm for load analysis	Jezequel, Baptiste
15.50-16.10	Towards the multi-scale Kalman filtering of dynamic wake models: observing turbulent fluctuations and wake meandering	Braunbehrens, Robert
16.10-16.30	A non-symmetric Gaussian wake model for lateral wake-to-wake interactions	Vad, Andreas
16.30-16.50	Stochastic wind farm flow generation using a reduced order model of LES	Murcia Leon, Juan Pablo
16.50-17.10	Comparison of three DWM-based wake models at above-rated wind speeds	Hanssen-Bauer, Øyvind Waage

15.30-17.10 **SESSION VII B - STABILITY AND NEAR WAKE (E31)**

TIME	TITLE	PRESENTING AUTHOR
15.30-15.50	Local flow and loads estimation on wake-affected wind turbines using graph neural networks and PyWake	Duthé, Gregory
15.50-16.10	Simulating the helix wake within an actuator disk framework: verification against discrete-blade type simulations	Coquelet, Marion
16.10-16.30	Dynamic mode decomposition of merging wind turbine wakes	Zormpa, Markella
16.30-16.50	Analytical Descriptions of Swirling Wake Profiles	Naughton, Jonathan
16.50-17.10	Proper Orthogonal Decomposition (POD) of the Wake Flow Field of a Model Wind Turbine and a Porous Disc under Different Freestream Turbulence Intensity Conditions	Öztürk, Buğrahan

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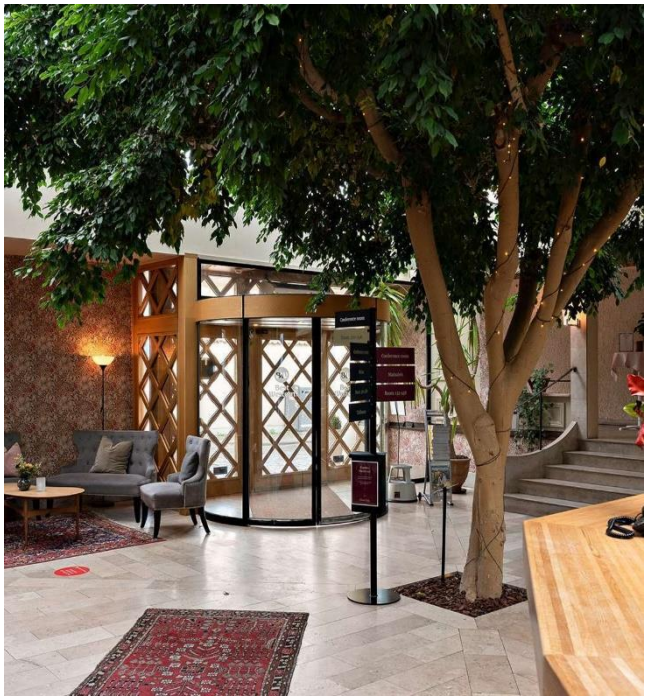
19.00 **Dinner (Best Western Strand Hotel)**

Directions:



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THURSDAY 22 JUNE

09.20-10.20 **SESSION VIII - FARM CONTROL I (E22)**

TIME	TITLE	PRESENTING AUTHOR
09.20-09.40	Sensitivity of Lillgrund Wind Farm Power Performance to Turbine Controller	Troldborg, Niels
09.40-10.00	Full-scale validation of optimal axial induction control of a row of turbines at Lillgrund wind farm	Larsen, Gunner
10.00-10.20	Exploring cooperation between wind farms: a wake steering optimization study of the Belgian offshore wind farm cluster	Foloppe, Benoit

10.20-10.40 **COFFEE BREAK (OUTSIDE E22)**

10.40-11.20 **SESSION IX - FARM CONTROL II (E22)**

TIME	TITLE	PRESENTING AUTHOR
10.40-11.00	On the performance of the helix wind farm control approach in the conventionally neutral atmospheric boundary layer	Taschner, Emanuel
11.00-11.20	Study on the yaw-based wake steering control considering dynamic flow characteristics for wind farm power improvement	Yu, Xin

11.20–12.00 **CLOSING SESSION (E22)**

Professor **Stefan Ivanell**, Uppsala University and Professor **Jens Nørkær Sørensen**, Technical University of Denmark/Uppsala University.

12.00-13.00 **LUNCH (JODA)**

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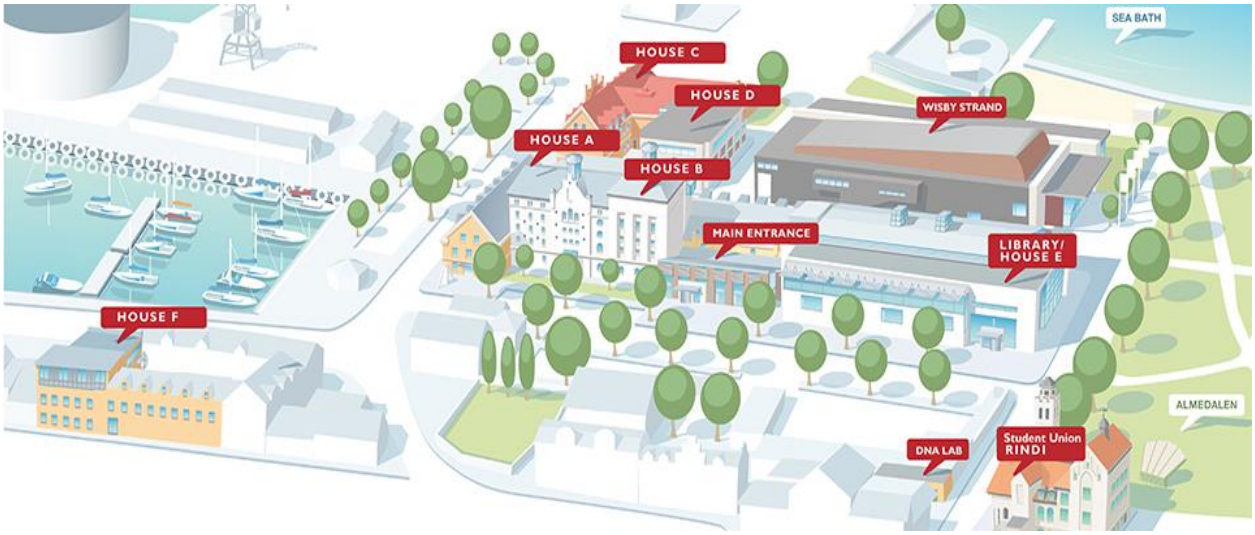
Instructions for attending the conference

Uppsala University, Campus Gotland
Cramérgatan 3, Visby.

The conference venue is in the Library House E @ Campus Gotland, Cramérgatan 5, Visby.
(E22 and E31)

- At the first day, please register outside the main conference room E22.



If there are some questions during your time at the conference, please contact:

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Most welcome,

Stefan Ivanell and Jens Nørkær Sørensen