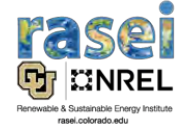


6th Wind Energy Systems Engineering Workshop

Agenda: Day 1, Tue 30 August 2022

Time	Title	Speaker	Affiliation
0815 – 0900	Registration		
0900 – 0935	Workshop Day 1 Overview	Garrett Barter	NREL
	Government Perspective and Kickoff	Ben Hallissy	DOE WETO
0935 – 1045	Session 1: Wind Power Plants in the 21st Century Electricity System	Katherine Dykes	DTU
	1.1 LCOE: update on recent trends offshore	Morten Jensen	Aegir Insights
	1.2 Value and profitability metrics for wind and renewables	Eric Loth	Univ of Virginia
	1.3 Sustainability and social acceptance in a world powered by wind	Suzanne Tegen	Col State Univ
1045 – 1105	Coffee Break		
1105 – 1235	Session 2: Systems engineering for next generation floating turbines	Mayank Chetan	NREL
	2.1 Exploring and Exploiting System-level Design Synergies for Floating Vertical Axis Wind Systems	Todd Griffith	Univ of Texas Dallas
	2.2 Control Co-design of Floating Wind Turbines Using WEIS	Daniel Zalkind	NREL
	2.3 Superconducting generators for offshore wind turbines	David Torrey	GE
	2.4 Derivatives for Wind Turbine and Wind Farm Design Optimization	Andrew Ning	Brigham Young Univ
1235 – 1335	Lunch		
1335 – 1505	Session 3: Systems engineering for wind farm design	Matt Hall	NREL
	3.1 Trade-offs in manufacturing, installation logistics, and O&M for floating wind farms	Matteo Baudino Bessone	TU Delft
	3.2 Multi-Disciplinary, Simulation- and Reliability-Based Design Optimization of FOWT Systems	Mareike Leimeister	Fraunhofer
	3.3 Innovations at Hollandse Kust Noord Wind Farm	Nick Smith	Shell
	3.4 Systems engineering after the fact	Pete Bachant	WindESCo
1505 – 1525	Coffee Break		
1525 – 1610	Keynote 1: Disruption in Aerospace – a few observations on current trends surrounding flying cars, drones and hypersonic aircraft	Robin Riedel	McKinsey
1610 – 1700	Session 4: Code capability	Frederik Zahle	DTU
	4.1 Performing multidisciplinary optimization using OpenMDAO	John Jasa	NASA Glenn
	4.2 Wind farm flow modeling and optimization in PyWake/TOPFARM	Rafael Valotta Rodrigues	DTU
1730 –	Informal and optional social gathering Rayback Collective 2775 Valmont Rd, Boulder 80304		



6th Wind Energy Systems Engineering Workshop

Agenda: Day 2, Wed 31 August 2022

Time	Title	Speaker	Affiliation
0820 – 0845	Workshop Day 2 Overview	Garrett Barter	NREL
	Systems engineering for floating offshore wind	Nate McKenzie	DOE WETO
0845 – 0915	Keynote 2: Developing and Scaling New Technology in Wind - Spiral Welded Tower Case Study	Eric Smith	Keystone Tower
0915 – 1045	Session 5: Systems engineering with higher fidelity models	Frederik Zahle	DTU
	5.1 CFD-based MDO for wind turbine rotor design	Marco Mangano	Univ of Michigan
	5.2 A data-enabled co-design approach for solving the problem of ill-conditioning in modern wind turbine control schemes	Sebastiaan Mulders	TU Delft
	5.3 Recent advances in large-scale multidisciplinary design optimization	John Hwang	Univ Calif San Diego
	5.4 AI/ML as a gateway to design with HFM	Ryan King	NREL
1045 – 1105	Coffee Break		
1105 – 1235	Session 6: Systems engineering for the wind turbine rotor	Pietro Bortolotti	NREL
	6.1 The RAAW project and the need for validation of numerical models	Jonathan Naughton	Univ of Wyoming
	6.2 Blade Design and Optimization using NuMAD	Evan Anderson	SNL
	6.3 Additive Manufacturing in the Wind Industry – A Systems Engineering Perspective	Pascal Meyer	GE
	6.4 Informing Blade Design through MDAO Practices	Evan Gaertner	SGRE
1235 – 1335	Lunch		
1335 – 1505	Session 7: Extending the system - Energy systems and markets	Chris Bay	NREL
	7.1 Systems design and operation of renewable energy parks with new technologies	Petr Kadurek	Vattenfall
	7.2 Design of wind-based hybrid plants for grid integration	Jennifer King	NREL
	7.3 Green Hydrogen: Opportunities and Challenges of Integration of Wind Turbine and Electrolysis Systems	Rogier Blom	GE
	7.4 Modular Simulation Platform for Integrated Energy Systems	Tobias Meyer	Fraunhofer
1505 – 1525	Coffee Break		
1525 – 1635	Session 8: Extending the system - Sustainability and wildlife	Katherine Dykes	NREL
	8.1 Hybrid wind farm design for minimum CO2	Bernard Bulder	TNO
	8.2 Integrating wildlife considerations into wind energy systems engineering	Bethany Straw	US Geological Survey
	8.3 Thermoplastic Wind Turbine Blades and Recyclable-by-Design Materials	Robynne Murray	NREL
1635 – 1715	Session 9: Code capability (continued)	Frederik Zahle	DTU
	9.1 A Peak into the Wind Systems Engineering Tools of NREL: WISDEM & WEIS	Pietro Bortolotti	NREL
	9.2 FLORIS: New capabilities, recent results and future directions	Chris Bay	NREL
1730 –	Informal and optional social gathering Avanti Food & Beverage 1401 Pearl St., Boulder 80302		



6th Wind Energy Systems Engineering Workshop

Agenda: Day 3, Thu 1 September 2022

Time	Activity	Leads
0815 –	Meet in SEEC building lobby to board charter bus	
0830 – 1300	Tour 1: Vestas Blades Americas The factory is a ~1hr drive from Boulder 11140 Eastman Park Dr, Windsor, CO 80550 Participants must wear long pants and closed-toe shoes Tour consists of a 30min Q&A followed by 1hr factory tour (you may want to bring a snack)	Frederik Zahle, Pietro Bortolotti, Mayank Chetan
0845 – 1200	Tour 2: NREL Flatiron's Campus The campus is a ~20min drive from Boulder 18200 CO-128, Boulder, CO 80303 US Citizens: Bring valid ID (driver's license okay) Non-US Citizens: Bring Passport Tour consists of a 1-1.5hr walking tour of test turbines, manufacturing facilities, and new capabilities for hybrids research	Garrett Barter, Katherine Dykes