

PROGRAM Tuesday, September 20th, 2022

8:00-9:30	Registration and Breakfast (Lobby)	
9:30-10:30	Welcome and Keynote (Auditorium 128)	
PLENARY SESSION		
TRACK 1: Grid integration (Auditorium 128, 10:30AM-12PM) Chair: Charlie Smith (ESIG)		
10:30-12:00	Clyde Loutan (CAISO)	The need for and supply of ancillary services from wind and solar power plants
	Ben Hobbs (Johns Hopkins University)	Market design consideration for future systems with a high share of renewable energy
	Julia Matevosyan (ESIG)	Moving the energy – Transmission system interconnection and planning
12:00-13:00	Lunch (Room 101)	
PARALLEL SESSIONS (13:00 - 15:00)		
TRACK 4: Modeling (Auditorium 128) Chair: Luis (Tony) Martínez (NREL)		
13:00-13:20	Rafael Valotta Rodrigues	Wind farm power predictions using surrogates based on multidimensional historical time series
13:20-13:40	Charles Meneveau	Capturing curled wake shape behind yawed turbines with fast running modeling
13:40-14:00	Michael LoCascio	Performance improvements and validation for the FLOW Estimation and Rose Superposition (FLOWERS) annually-averaged wake model
14:00-14:20	Ryan Scott	Wind turbine wake evolution of eddy viscosity
14:20-14:40	Nicolai Gayle Nygaard	Impact of long-distance wakes between offshore wind farms
14:40-15:00	Jason Jonkman	Difference in fatigue assessment obtained with effective turbulence vs. dynamic wake meandering modeling approaches
TRACK 3: Atmospheric modeling, resource, and wakes (Auditorium 125) Chair: Amy Robertson (NREL)		
13:00-13:20	David Rosencrans	Quantifying uncertainty of wake Impacts in US offshore wind resource areas
13:20-13:40	Balaji Jayaraman	Modeling interaction of wind farms with offshore low-level jets using multiscale large-eddy simulations
13:40-14:00	Maryam Golbazi	Surface impacts of large offshore wind farms

14:00-14:20	Hannah Williams	Computationally efficient wave-modeled large-eddy simulation of finite offshore wind farms
14:20-14:40	Gordon Stewart	Impacts of wind/wave misalignment on wake meandering of floating wind turbines
14:40-15:00	Shengbai Xie	Fully-coupled, computationally efficient CFD simulations of fluid-structure interaction for tandem floating offshore wind turbines under various wind-wave conditions
TRACK 1: Grid integration (Room 120) Chair: Tom Acker (SRP)		
13:00-13:20	Sophie Vredenkamp	Comparing HVAC and HVDC export system costs for varying cable length, project capacity, and future innovation
13:20-13:40	Manohar Chamana	An assessment of cyber risks in wind farms using real-time co-simulation cybersecurity testbed
13:40-14:00	Michael Sinner	Coordinated wind plant and battery control for active power services
14:00-14:20	Willett Kempton	Matching wind power to load: Controls, inherent storage and standby loads
TRACK 5: Mesoscale-to-microscale simulations for wind energy research I (Room 119) Chairs: Matt Churchfield (NREL), Adam Wise (University of California, Berkeley)		
13:00-13:20	Sue Ellen Haupt	Providing workflows and examples for mesoscale to microscale coupled simulations
13:20-13:40	Dries Allaerts	Using observational data to directly drive large-eddy simulations of a diurnal cycle
13:40-14:00	Matt Churchfield	On the practicalities of atmospheric gravity waves in wind-energy flow simulations
14:00-14:20	Mehtab Khan	Relationship of numerical setup with flow parameters in simulations involving gravity waves
14:20-14:40	Regis Thedin	Comparison of mesoscale-to-microscale coupling techniques in an offshore environment
14:40-15:00	Pankaj Jha	Mesoscale-microscale coupling for wind plant applications
TRACK 4: Optimization and O&M (Room Pencader 115) Chair: Clement Jacquet (GE Renewable Energy)		
13:00-13:20	Christopher Bay	Multi-fidelity wind farm layout optimization in complex terrain
13:20-13:40	Andrew Ning	Advanced usage of derivatives for wind turbine and wind farm optimization
13:40-14:00	Clement Jacquet	Assessing the performance of several farm blockage models against LiDAR measurements
14:00-14:20	Aubryn Cooperman	Evaluating impacts of innovations on operations and maintenance costs using a new OpenSource model

14:20-14:40	Jordan Perr-Sauer	Quantifying the impact of the disagreement in estimates of losses in energy yield assessments of wind power plants
14:40-15:00	Eric Simley	A comparison of pre-construction and operational wake loss estimates for land-based wind plants
15:00-15:30	Coffee Break (Lobby)	
PARALLEL SESSIONS (15:30-17:30)		
TRACK 4: Controls I (Auditorium 128)		
Chair: Michael Howland (MIT)		
15:30-15:50	Genevieve Starke	A graph-based dynamic yaw model for a wind farm
15:50-16:10	Michael Sinner	Practical issues for preview-enabled model predictive control of wind turbines
16:10-16:30	Ishaan Sood	Closed-loop wind-farm control for power maximization and load mitigation
16:30-16:50	Michael Howland	Characterizing and modeling the effects of wind shear on collective wind farm flow control
16:50-17:10	Marcus Becker	Including the dynamic wind farm model FLORIDyn in an Ensemble Kalman Filter framework
17:10-17:30	Maarten van den Broek	Free-vortex wake model with discrete adjoint for wind farm flow control
TRACK 3: Experimental campaigns and model validation (Auditorium 125)		
Chair: Martin Wosnik (University of New Hampshire)		
15:30-15:50	Nicole Mendoza	Verification and validation of model-scale turbine performance and control for the IEA Wind 15-MW reference wind turbine
15:50-16:10	Roger Bergua	OC6 phase III: Validation of the aerodynamic loading on a wind turbine rotor undergoing large motion caused by a floating support structure
16:10-16:30	Keshav Panthi	Hardware-in-the loop wind tunnel testing of a model floating offshore wind turbine: variability in wake velocity statistics and turbine loads
16:30-16:50	Hui Hu	Dynamic ice accretion process over the surface of a turbine blade model pertinent to offshore wind turbine icing phenomena
16:50-17:10	Liqin Jin	Improved wind speed estimation and rain quantification with three wind scanners
17:10-17:30	Michael B. Kuhn	Applying CFD-based wave basins to accurately simulate the open ocean for offshore wind applications
TRACK 4: Numerics I (Room 120)		
Chair: Alan Hsieh (Sandia National Labs)		
15:30-15:50	Emanuel Taschner	A new coupling of a GPU-resident large-eddy simulation code with a multi-physics wind turbine simulation tool

15:50-16:10	Luca Lanzilao	Large-eddy simulations of wind farms operating in conventionally neutral boundary layers
16:10-16:30	Dan Houck	Application of parallel-flow linear stability theory to wind turbine wakes with implications for active wake control
16:30-16:50	Sicheng Wu	New insights on wind turbine wakes from large-eddy simulation: Wake contraction, dual nature, and temperature effects
16:50-17:10	Federico Bernardoni	Wind farm blockage effect on yaw misalignment optimization and turbine loads
17:10-17:30	Ashesh Sharma	ExaWind: Hybrid CFD on hybrid HPC
TRACK 5: Mesoscale-to-microscale simulations for wind energy research II (Room 119) Chairs: Sue Haupt (NCAR), Jeff Freedman (SUNY Albany)		
15:30-15:50	Ghanesh Narasimhan	Modeling wind veer effects on a yawed wind turbine wake in conventionally neutral and stably stratified atmospheric boundary layers
15:50-16:10	Regis Thedin	Practical challenges of atmospheric boundary layer large-eddy simulations over complex terrain
16:10-16:30	Alex Rybchuk	Towards time-resolved flow reconstruction of lidar measurements through data assimilation using AMR-Wind
16:30-16:50	Adam Wise	Wind turbine performance under a range of stable boundary layer conditions
16:50-17:10	Rupert Storey	Prediction of turbulence and wind statistics over entire sites using large-eddy simulation for wind resource assessment
TRACK 4: Turbine concepts and experiments (Room Pencader 115) Chair: Carlos Simao Ferreira (TU Delft)		
15:30-15:50	Adhyanth Giri Ajay	Aeroelastic analysis of an X-shaped vertical axis wind turbine
15:50-16:10	David Bensason	Actuator disks on a vertical-axis wind turbine: a step towards the X-ROTOR
16:10-16:30	Narges Helmisiasifariman	Modal characterization of a pitching airfoil using instantaneous pressure fields
16:30-16:50	Erik Fritz	Unsteady angle of attack estimation from field pressure measurements on a wind turbine blade
16:50-17:10	Kathryn Jones	Life cycle assessment comparing concrete additive manufacturing to conventional manufacturing of ultra-tall wind turbine towers
17:10-17:30	Wasi Uddin Ahmed	Active control of the aerodynamic forces on a wind turbine blade with plasma actuation: A wind tunnel experiment
17:30-19:30	0	

P1-1	Ryan Ent and Golbon Zakeri	Reducing uncertainty in energy production: A swing contract market based approach
P1-2	Arash Khojaste, Golbon Zakeri	Efficient planning for a reliable zero emissions grid
P1-3	Ana Simarro-Garcia, Raquel Villena-Ruiz, Andres Honrubia-Escribano and Emilio Gomez-Lazaro	A technical analysis of repowering a wind farm on a transmission network
P2-1	Talbot Andrews, Carol Atkinson-Palombo, Oksan Bayulgen, and Lyle Scruggs	Drivers of wind attitudes in Texas and their electoral consequences
P2-2	Kimberly Doyle, Craig Merrett, Alexandra Mallett	Case study analysis of effective communication channels in wind energy project development
P2-2 bis	Robert Haggart	Co-operative business model's effect on communication during renewable energy development
P2-3	Caroline Cameron, Megan Creighton, Jason Baxter	Building a circular economy for wind turbines
P2-4	John DeFrancisci, Caglar Erdogan, Daniel Kuchma, and Geoffrey Swain	Can nature-inclusive design help offshore wind and fishing thrive together?
P3-1	David Domingos, Peter Wellens, Sebastião Beirão, Jan-Willem van Wingerden	Fist floating OWT installation: Motion tracking units
P3-2	Scott Miller, Jeff Freedman, Jason Covert	Flux-lidar buoy for offshore wind monitoring and prediction
P3-3	Jon Collins, Marie-Anne Cowan	Considerations for fixed-bottom and floating offshore wind farm layout design and optimisation
P3-4	Muna Hafsa, Dana Veron, Brian Frei, Joseph Brodie	Comparing observations and modeling of the vertical wind profile in the Mid-Atlantic Bight
P3-5	Jacob Fontaine, M. Reza Hashemi	Simulation of the response of a 15 MW floating wind turbine to an extreme hurricane

P3-6	Krishnaveni Balakrishnan, Sanjay Arwade and Don DeGroot	MISSING TITLE
P4-1	Michael Edirmannasinghe, Samirah Gnangbe	Analysis and optimization of wind resources and characteristics for offshore wind farms using WindPro and Meteodyn WT
P4-2	Ingo Mewes	AirWing, a self-regulating control system for kites
P4-3	Florian Breipohl, Christian Gebhardt, Bernhard Kämpf, Ashwin Candade	EnerKite - Unique challenges and solutions for airborne wind energy
P4-4	Mohsen Minaei Javid, Daniel Kuchma	Evaluation of the existing concrete fatigue experimental data
P4-5	Raquel Villena-Ruiz, Andrés Honrubia- Escribano, Francisco Jiménez-Buendía, Jorge Luis Sosa- Avenidaño, Sebastian Frahm, Pascal Gartmann, Jens Fortmann, Poul Ejnar Sørensen, Eduard Muljadi, Emilio Gómez- Lázaro	Towards the widespread use of IEC wind turbine simulation models for transient stability studies
P4-6	Guanqun Xu, Wei Yu, Andrea Sciacchitano, Carlos Ferreira	An experimental study of the unsteady aerodynamics of a DU91-W2-150 airfoil at large angles of attack
P4-7	Satish Jawalageri, Subhamoy Bhattacharya, Soroosh Jalilvand, Abdollah Malekjafarian	A comparative study of load estimations for offshore wind turbines using simplified and high-fidelity methods
P4-8	Michael Jeong, Eric Loth, Chris Qin, Michael Selig, Nick Johnson	Aerodynamic rotor design for a 25 MW offshore downwind turbine
P5-1	Abdul Haseeb Syed, Jakob Mann	Turbulent kinetic energy dissipation in downstream of large offshore wind farms

P5-2	Praneeth Gurumurthy, Anthony Kirincich	Estimating atmospheric boundary layer turbulence in the marine environment using lidar systems with applications for offshore wind energy
P5-3	Sicheng Wu, Ruo-Qian Wang	Preliminary study on the impact of observational data gaps on EnKF-based data assimilation on wind prediction
P5-4	Jordan Perr-Sauer, Nicola Bodini, Stephen Becker, Eric Simley, Rob Hammond, Jason Fields	Empirical results suggest quasi-Monte Carlo sampling increases accuracy in the estimation of annual energy production from operational data

Wednesday, September 21th, 2022

8:00-8:30	Registration and Breakfast (Lobby)	
PLENARY SESSIONS		
8:30-10:00	TRACK 2: Social/environmental aspects (Auditorium 128, 8:30AM-10AM) Chairs: Jeremy Firestone (University of Delaware), Bonnie Ram (University of Delaware)	
	Liz Gill (NREL)	Human dimension of the grand challenges of wind energy developments
	Bethany Straw (USGS)	Engineering design for the environment
	Kelsey Leonard (University of Waterloo)	Recognition, procedural, and distribute justice in the wind energy transition
10:00-10:30	Coffee Break (Lobby)	
10:30-12:00	TRACK 3: Offshore wind (Auditorium 128, 10:30AM-12PM) Chairs: Amy Robertson (NREL), Jason Jonkman (NREL)	
	Jocelyn Brown-Saraciano (U.S. DOE)	National efforts to advance offshore wind in the US
	Carlos Noyes (U.S. DOE)	An overview of the ATLANTIS program on behalf of ARPA-e
	James Manwell (University of Massachusetts Amherst)	Offshore wind energy: What is over the horizon?
12:00-13:00	Lunch (Room 101)	
PARALLEL SESSIONS (13:00 - 15:00)		
TRACK 3: Design, optimization, and technoeconomic analysis (Auditorium 128) Chair: Jason Jonkman (NREL)		
13:00-13:20	Onur Bilgen	OpenTurbineCoDe (OTCD): An open-source floating offshore wind turbine multidisciplinary control co-design optimization framework
13:20-13:40	Ethan Young	Optimal blade design considering dynamics of unsteady floating platforms
13:40-14:00	Deepali Singh	Site-specific load prediction using mixture density networks: a probabilistic approach
14:00-14:20	Willett Kempton	As offshore wind power bids reach market parity, how to design procurements?
TRACK 5: Lidar research for wind energy (Auditorium 125) Chairs: Nicola Bodini (NREL), G. Valerio Iungo (University of Texas Dallas)		

13:00-13:20	Saleh Nabi	CFD-based wind reconstruction in urban areas using LiDAR
13:20-13:40	Stefano Letizia	Development and field testing of non-vertical wind profiling techniques for scanning lidars
13:40-14:00	Francisco Costa	Impact of probe volume and scanning patterns on wind lidar turbulence intensity and horizontal velocity estimations
14:00-14:20	Matteo Puccioni	Optimal design of synergistic wind LiDAR scans to probe wind turbulence within the wave and surface marine boundary layer
14:20-14:40	Deepak Sapkota	Measurements of aerosol concentration from wind LiDAR backscatter and optical particle counter
14:40-15:00	Yelena Pichugina	Case study of the wind ramp event from lidar measurements and WRF simulation over ARM South Great Plains
TRACK 4: Scaled experiments (Room 120) Chair: Aliza Abraham (IRPHE)		
13:00-13:20	Raúl Bayoan Cal	Coriolis effects on a model wind plant
13:20-13:40	Aliza Abraham	Tip vortex instability triggered by rotor asymmetry for accelerated wake recovery
13:40-14:00	Paul Hulsman	Replicating dynamic wind direction changes in the wind tunnel for wake steering purposes
14:00-14:20	Wasi Uddin Ahmed	Wind tunnel experiment on the blockage induced by a wind turbine column
14:20-14:40	Christopher Rumble	Impact of inflow turbulence and swirl on wake behavior
14:40-15:00	Caleb Traylor	Strategic sensor placement for structural health monitoring of wind turbine blades using internal cavity acoustics
TRACK 2: Leveraging knowledge for effective engagement and siting (Room 119) Chair: Joe Rand (LBL)		
13:00-13:20	Jeffrey Jacquet	'Doomscrolling' in my backyard: Corrosive online communities and contested wind development in rural Ohio
13:20-13:40	Matilda Kreider	Putting communities in the driver's seat: The impact of proactive planning in wind energy development
13:40-14:00	John Parkins	Building wind farms in fossil fuel country: Identifying the preferences of large-scale agricultural landowners in Alberta, Canada
14:00-14:20	Emily Diamond	Evaluating messaging frames in offshore wind development: A comparative case study analysis in the Northeastern United States
14:20-14:40	Ben Hoen	Up scaling: Effects of future larger land-based wind turbines on community sound levels, energy generation, and distributive justice

TRACK 4: Assessment of turbine components (Room Pencader 115) Chair: Amadeus Rolink (RWTH Aachen University)		
13:00-13:20	Amadeus Rolink	Development and experimental validation of a design methodology for a novel plain bearing concept for the application as main bearing of a wind turbine
13:20-13:40	Maximilian Zweiffel	Influence of drivetrain efficiency determination in wind turbines on the power coefficient
13:40-14:00	Natalie Diltz	Assessment of wind turbine foundation degradation from dynamic measurements made at the nacelle
14:00-14:20	Dehui Lin	Methodology for using high-resolution 3D scanner measurements to characterize radial geometric imperfections in wind turbine towers
14:20-14:40	Timm Jakobs	Plain main bearings and the wind turbine start up - Investigation on the influence of the plain pad topology
14:40-15:00	Sandor Adany	An efficient numerical method for linear buckling analysis of tubular members
15:00-15:30	Coffee Break (Lobby)	
PARALLEL SESSIONS (15:30 - 17:30) TRACK 4: Machine learning I (Auditorium 128) Chair: Georgios Deskos (NREL)		
15:30-15:50	Ganesh Vijayakumar	Aerodynamic design of airfoils and blades using invertible neural networks
15:50-16:10	Kenneth Brown	High-fidelity processing of instantaneous line-of-sight returns from nacelle-mounted lidar including supervised machine learning
16:10-16:30	Georgios Deskos	A machine-learning-enhanced Mann model for improved synthetic turbulence generation
16:30-16:50	Jaime Liew	Closed-loop wind farm flow control using reinforcement learning and streaming dynamic mode decomposition
16:50-17:10	Andrew Glaws	Invertible neural networks for aerodynamic design of wind turbine blades
17:10-17:30	Koushik Marepally	Machine-learning based improvements of turbulence and transition models for wind-turbine airfoil applications
TRACK 3: Controls, design, and loads analysis (Auditorium 125) Chair: Jason Jonkman (NREL)		
15:30-15:50	Amr Hegazy	Negative damping in floating offshore wind turbines: An overview of the solutions
15:50-16:10	Juan López Muro	Floating offshore wind turbine modeling and platform control for load alleviation

16:10-16:30	Shawn Albertson	Phase resolved wave predictions for the active control of floating offshore wind turbines
16:30-16:50	David Stockhouse	Robust MIMO stability of a floating wind turbine controller
16:50-17:10	Doron Rose	Wind-wave misalignment effects on multiline anchor systems for floating offshore wind turbines
TRACK 6: Education/Others (Room 120) Chair: Jim Ahlgrimm (DOE WETO)		
15:30-15:50	Haiyang Hu	An experimental study on the thermodynamic characteristics of DBD plasma actuations pertinent to wind turbine icing mitigation
15:50-16:10	Rupp Carriveau	HIGH Energy: Farming wind to grow clean food
16:10-16:30	Brian Hammerstrom	Estimate of the wind energy needed to replace natural gas with hydrogen in Massachusetts
16:30-16:50	Claire Burch	Preparing teachers for wind energy education: Research experience for teachers
16:50-17:10	John Foster	A Credential for wind turbine technicians
17:10-17:30	Tom Acker	The Rapid model: Results of piloting a model to establish a consortium for sharing graduate courses in wind energy
TRACK 2: Cultivating co-existence of wind technology, fishers, and wildlife (Room 119) Chair: Eric Lantz (NREL)		
15:30-15:50	Bethany Straw	Status and trends of North American bat populations facing multiple stressors
15:50-16:10	Eric Lantz	Wind and bat risks: An overview and analysis of current and alternative metrics
16:10-16:30	Eliot Quon	Eagle behavior and risk modeling for wind energy
16:30-16:50	Andrew PJ Stanley	Wind plant design and performance sensitivity to golden eagle preservation constraints
16:50-17:10	Tiffany Smythe	Network approaches to understanding offshore wind engagement: A case study of offshore wind-fisheries conflict in Southern New England
17:10-17:30	Jean-Pierre Roux	Caught between Bono and a lobster pot: Are Irish electricity consumers, coastal residents and fishermen willing to accept the same offshore wind policy package?
TRACK 4: Field experiments (Room Pencader 115) Chair: Nicholas Hamilton (NREL)		
15:30-15:50	Christopher Kelley	Rotor aerodynamics, aeroelastics, and wake campaign overview

15:50-16:10	Patrick Moriarty	Overview of the American Wake Experiment (AWAKEN)
16:10-16:30	Malte Fredebohm	HighRe - Aerodynamics at high Reynolds numbers on an 8-MW wind turbine
16:30-16:50	Dan Houck	A hub-mounted SpinnerLidar for the RAAW experiment: Design, progress, and anticipated analyses
16:50-17:10	Nicholas Hamilton	Large-scale photogrammetry and blade aeroelastic response in the RAAW project
17:10-17:30	Tommy Herges	National rotor testbed strain gage calibration and compensation process
17:30-18:30	Free time, transportation to Banquet	
18:30-22:30	Banquet Dinner (Deerfield Resort)	

Thursday, September 22nd, 2022

8:00-8:30	Registration and Breakfast (Lobby)	
PLENARY SESSIONS		
8:30-10:00	TRACK 4: Wind turbines and wind plants (Auditorium 128, 8:30AM-10AM) Chairs: Luis 'Tony' Martínez-Tossas (NREL), Raúl Cal (Portland State University)	
	Charles Meneveau (Johns Hopkins University)	Boundary layer turbulence statistics and implications for wind farm models
	Lucy Pao (Colorado University Boulder)	Control of wind energy systems: Accomplishments and emerging opportunities
10:00-10:30	Coffee Break (Lobby)	
10:30-12:00	TRACK 5: Atmosphere/ocean sciences (Auditorium 128, 10:30AM-12PM) Chairs: Caroline Draxl (NREL), Jeff Freedman (SUNY Albany)	
	Georgios Deskos (NREL)	Air-sea interactions and offshore wind energy
	Brian Hirth (Texas Tech University)	Dual-doppler radar measurements of the coastal gradient impacts on an offshore wind farm
	Jovanka Nikolic (Indiana University Bloomington)	Simulating and characterizing the atmospheric boundary layer at the land-sea interface
12:00-13:00	Lunch (Room 101)	
PARALLEL SESSIONS (13:00 - 15:00)		
TRACK 5: Wind farm modeling (Auditorium 128) Chairs: Matt Churchfield (NREL), Dries Allaerts (TU Delft)		
13:00-13:20	Miguel Sanchez Gomez	Difficulties in measuring wind plant blockage in simple terrain: A simulation study
13:20-13:40	Enrico Antonini	Geophysical constraints to large wind farm development
13:40-14:00	Cristina Archer	The complex story of how wind turbines affect near-ground meteorological properties
14:00-14:20	Raj Rai	Assessing the impact of terrain on the turbulence statistics for the WFIP2 site
14:20-14:40	Jacob Coburn	Projecting future energy production from operating wind farms in North America
14:40-15:00	Sarah Buckhold	Validation of WRF simulation at complex terrain site
TRACK 2: Advancing justice and equity in wind energy transitions (Auditorium 125) Chair: Alison Bates (Colby College)		

13:00-13:20	David Bidwell	Love thy neighbor (or not): Regionalism and support for the use of offshore wind energy by others
13:20-13:40	Sara Swett	Community attitudes regarding procedural, distributive, and recognition justice dimensions of southern New England offshore wind development
13:40-14:00	Jeremy Firestone	Advancing offshore wind development and tribal sovereignty through engagement
14:00-14:20	Alison Bates	Energy justice and the co-opting of indigenous narratives in U.S. offshore wind development
14:20-14:40	Nathaniel Trumbull	Bringing offshore wind cables ashore in Southern New England: Offshore wind's landfall and community acceptance
TRACK 4: Turbulence characteristics (Room 120) Chair: Kelsey Shaler (Shell)		
13:00-13:20	Jason Jonkman	Simplified turbine modeling in FAST.Farm for improved computational performance
13:20-13:40	Emmanuel Branlard	Accounting for wake-added turbulence effects in wind farms using FAST.Farm
13:40-14:00	Brooke Stanislawski	Effect of turbulence length scales on wind turbine loads
14:00-14:20	Jaylon McGhee	Influence of inflow length scales on wind turbine blade aerodynamics
14:20-14:40	Ram Poudel	Wind speed time series synthesis using a parameterized power spectral density (PSD) function
TRACK 3: Innovative concepts (Room 119) Chair: Willett Kempton (University of Delaware)		
13:00-13:20	Omar S. Ibrahim	Hydrogen floating offshore wind turbine: Proposing an off-grid predictive control approach
13:20-13:40	Gerard Avellaneda-Domene	Stability analysis of a floating wind turbine with on-board direct air capture system
13:40-14:00	D. Todd Griffith	Investigation of tower tilting effect for a floating offshore Darrieus vertical axis wind turbine
14:00-14:20	Guodong Feng	Numerical simulation of the effect of perforations on the structural behavior of offshore wind monopiles
14:20-14:40	John DeFrancisci	Corrosion inside of offshore wind monopiles
TRACK 4: Numerics 2 (Room Pencader 115) Chair: Dan Houck (Sandia National Laboratories)		
13:00-13:20	Alan Hsieh	Effects of stability on blockage in LES simulations
13:20-13:40	Ganesh Vijayakumar	Estimation of polars using ExaWind for modern wind turbine airfoils

13:40-14:00	Andre Ribeiro	Sliding mesh simulations of a wind turbine rotor with actuator line Lattice-Boltzmann method
14:00-14:20	Francesco Castellani	Advanced methods for wind turbine performance analysis based on SCADA data and CFD simulations
14:20-14:40	Bumseok Lee	Exploration of design space of NREL 5-MW and IEA 15-MW wind turbine blades using 3-D RANS CFD simulations
15:00-15:30	Coffee Break (Lobby)	
PARALLEL SESSIONS (15:30 - 17:30)		
TRACK 4: Controls II (Auditorium 128)		
Chair: Genevieve Starke (NREL)		
15:30-15:50	Michael Howland	Timescales in wake steering control: Averaging farm data and updating yaw set-points
15:50-16:10	Mandar Phadnis	Advanced wind turbine control development using field test results for generator over-speed mitigation
16:10-16:30	Ahmad Vassel-Be-Hagh	Active tip speed ratio control can significantly increase annual energy production
16:30-16:50	Mario Rotea	Wind turbine gust load alleviation with active flow control
16:50-17:10	Manuel Pusch	Optimal operating points for wind turbine control and co-design
TRACK 5: Offshore wind energy modeling (Auditorium 125)		
Chair: Georgios Deskos (NREL), Pankaj Jha (LBNL)		
15:30-15:50	Nicola Bodini	A validated national offshore wind resource dataset with uncertainty quantification offshore hub-height wind speed in the US Mid-Atlantic
15:50-16:10	Nicola Bodini	Leveraging machine learning to quantify uncertainty in modeled offshore hub-height wind speed in the US Mid-Atlantic
16:10-16:30	Jeff Freedman	Climate change and the offshore wind resource in the New York/New Jersey Bight
16:30-16:50	Elizabeth McCabe	Objective methodology to identify the sea breeze circulation and low-level jet in the region of the New York Bight
16:50-17:10	Geng Xia	Detecting and characterizing simulated sea breezes over the US Northeastern Coast with implications for offshore wind energy
17:10-17:30	Panagiotis Mitsopoulos	Multi-mission altimetry data for offshore wind and wave energy resource estimation
TRACK 4: Machine learning II (Room 120)		
Chair: Valerio Iungo (University of Texas Dallas)		
15:30-15:50	Rad Haghi	Data-driven autocorrelated surrogate model for wind turbine aerodynamic simulations in the time domain

15:50-16:10	Mario Rotea	Wind direction estimation using neural networks
16:10-16:30	Coleman Fuller Moss	Machine learning and RANS modeling of wind farm operations: A case study for an AWAKEN site
16:30-16:50	Giacomo Valerio Iungo	Machine learning analysis of profiling wind LiDAR data to quantify blockage for onshore wind turbines
16:50-17:10	M. Sergio Campobasso	Feasibility of estimating wind turbine energy yield losses due to blade erosion using field observations
17:10-17:30	Francesco Natili	A data-driven approach for early gearbox fault diagnosis
TRACK 3: Installation, logistics, operations, maintenance, and digital twin (Room 119) Chair: Willett Kempton (University of Delaware)		
15:30-15:50	Sara B. Parkison	Marshaling ports required to meet US offshore power targets
15:50-16:10	Emmanuel Branlard	Linear and nonlinear reduced order models of floating wind turbines for physics-based digital twin technologies
16:10-16:30	Feike Savenije	Cost effective monitoring: application of the linear aero-hydro-elastic model TURBU as building block for a (floating) offshore wind turbine digital twin
16:30-16:50	Omer Khalid	Cost-benefit analysis for robotics-driven operations and maintenance of floating offshore wind farms
16:50-17:10	Katherine Coughlan	Evaluating the sensitivity of mooring line behavior to marine growth using OpenFAST
TRACK 4: Load assessment and data assimilation (Room Pencader 115) Chair: Brooke Stanislawski (NREL)		
15:30-15:50	Armin Zare	Stochastic dynamical wake modeling using partially available field measurements
15:50-16:10	Kenneth Brown	Turbulent inflow data assimilation with a 2.8-MW wind turbine to validate mid-fidelity aeroservoelastic modeling techniques
16:10-16:30	Pietro Bortolotti	Aeroservoelastic stability of wind turbines with flexible rotors
16:30-16:50	Todd Griffith	Sensitivity analysis for an aero-servo-elastic wind turbine digital twin model to uncertain model input parameters
16:50-17:10	Kelsey Shaler	Loads assessment of a fixed-bottom offshore wind farm with wake steering
17:10-17:30	Ganesh Vijayakumar	Blade-resolved fluid structure interaction algorithms for wind energy applications
17:30-18:30	Awards, Closing remarks (Auditorium 128)	