

WindTech 2017
October 24 - 26, 2017
Boulder, Colorado, USA

Time	Lead Author/Speaker	Complete List of Authors	Title (Click for Abstract)	Full Presentation
TUESDAY, OCTOBER 24, 2017				
PLENARY SESSION				
Haupt, Sue Ellen (Session Chair)				
9:00 AM	Thompson, Michael	Welcome to NCAR		Click for full presentation
9:10 AM	Haupt, Sue Ellen	Introduction to Boulder and NCAR Wind Energy Research		Click for full presentation
9:30 AM	Green, Peter (Plenary Speaker)	Peter Green, National Renewable Energy Laboratory (NREL)	<u>Wind Energy: Navigating the compelling road ahead</u>	
10:00 AM	Butterfield, Sandy (Plenary Speaker)	Sandy Butterfield, Boulder Wind Power, Inc.		Click for full presentation
BREAK (10:30 AM)				
1.A: OBSERVATIONS FIELD CAMPAIGNS				
Lundquist, Julie (Session Chair)				
11:00 AM	Takle, Gene (Keynote)	Eugene S. Takle, Iowa State University, Bin Cai, Sri Sritharan	<u>Wind Energy Potential at Six Locations in the Midwest US at Higher Hub Heights</u>	Click for full presentation
11:30 AM	Bromm, Marc	M. Bromm, For Wind – Carl von Ossietzky University of Oldenburg, Institute of Physics, Oldenburg, Germany, A. Rott, H. Beck, L. Vollmer, G. Steinfeld and M. Kuhn	<u>Challenges in recording high quality wake flow measurements of a wind turbine in field experiments</u>	Click for full presentation
11:45 AM	Rajewski (Presented by Gene Takle)	Daniel A. Rajewski, Eugene S. Takle, Iowa State University and Samantha L. Purdy	<u>Tall Tower Measurements of Wake Loss Characteristics Within a Low-Density Wind Farm</u>	Click for full presentation
12:00 PM	Bodini, Nicola	Nicola Bodini, University of Colorado Boulder, Dino Zardi and Julie K. Lundquist	<u>Three-Dimensional Structure of Wind Turbine Wakes as Measured by Scanning Lidar</u>	Click for full presentation
12:15 PM	Mikkelsen, Torben	Torben Mikkelsen, DTU Wind Energy, Roskilde, Denmark, Tommy Herges, Poul Astrup, Mikael Sjøholm, and Brian Naughton	<u>Wind field re-construction of 3D Wake measurements from a turbine-installed scanning lidar</u>	Click for full presentation
1.B: CDF APPLICATIONS 1				
Stoellinger, Michael (Session Chair)				
11:00 AM	Brasseur, PhD, Prof. Jim (Keynote)	James G. Brasseur, PhD, University of Colorado Boulder, Adam W. Lavelly, Tarak Nandi, Ganesh Vijayakumar, Balaji Jayaraman. Sue Ellen Haupt, Jared Lee, and Jon Keller	<u>Wind Turbine Response across Scales: Simulation and Experiment</u>	
11:30 AM	Bastine (Presented by Joachim Peinke)	Bastine D., Vollmer L., Wächter M., and Peinke J., AG TWIST, Institute of Physics, ForWind, University of Oldenburg	<u>Stochastic Wake Model Based on POD Analysis</u>	
11:45 AM	Taylor, Timothy	Timothy S. Taylor, Colorado School of Mines, Golden, CO, and Kathryn E. Johnson	<u>Evaluating Instantaneous Wake Center Position Determination Techniques for Data from High Fidelity Simulation Models</u>	Click for full presentation
12:00 PM	Lavelly, Adam	Adam W. Lavelly, Pennsylvania State University, University Park, PA, Matthew Churchfield, Scott Larwood, Sven Schmitz	<u>Validation of an Actuator-Line Tower Model for Upwind and Downwind Turbine Configurations and Wind Farms</u>	Click for full presentation
12:15 PM	Yang, Xiaolei	Xiaolei Yang, Department of Civil Engineering, College of Engineering and Applied Sciences, Stony Brook University, Stony Brook, New York and Fotis Sotiropoulos	<u>Coordinated turbine control through axial-induction factor: wake characteristics and wind farm power optimization</u>	
LUNCH BREAK (12:30 PM)				

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2.A: OBSERVATIONS AND MODELS				
Wilczak, James (Session Chair)				
1:30 PM	Lundquist, PhD, Julie (Keynote)	Julie K. Lundquist, University of Colorado Boulder , H. J. S. Fernando, Laura Leo, Raghu Krishnamurthy, Rebecca Barthelmie, Sara Pryor, Thomas Gerz, Martin Hagen, Norman Wildmann, Ludovic Bariteau, Petra Klein, David Turner, Jakob Mann, Michael Courtney, Nikola Vasiljević, Robert Menke, Detlev Heinemann, Stephan Voss, Fotini Katopodes Chow, José Laginha Palma, José Carlos Matos, Steven Oncley, William Brown, Scott Spuler, Chris Hocut, Ed Creegan, Yansen Wang, Andre Pattantyus, Andreas Rettenmeier, Emily Norton, Margarida Belo, and numerous other hardworking scientists, engineers, graduate students, and undergraduate students	Unprecedented Observations of Complex Terrain Influences on Wind Resources and Wind Turbine Wakes: An Overview of the Perdigoão Field Campaign	
2:00 PM	Iungo, Valerio	G. Valerio Iungo, The University of Texas at Dallas, Wind Fluids and Experiments (WindFluX) Laboratory and Said El-Asha, Stefano Letizia, Vignesh Santhanagopalan and Lu Zhan	Proactive monitoring of an onshore wind farm through LiDAR measurements, SCADA data and a data-driven RANS solver	Click for full presentation
2:15 PM	LoTufo, Julien	Julien LoTufo, WindEEE Research Institute, London, Ontario, Canada , Djordje Romanic and Horia Hangan	Non-Gaussian Turbulent Flow Over a Coastal Escarpment	
2:30 PM	Cline, Joel	Joel Cline, U.S. Department of Energy, Washington, DC , Sue Ellen Haupt, and Will Shaw	Meteorology Research in DOE's Atmosphere to Electrons (A2e) Program	Click for full presentation
2:45 PM	Ahsbahs, Tobias	Tobias Ahsbahs, DTU Wind Energy, Roskilde, Denmark , Merete Badger, Charlotte Bay Hasager, Kurt S. Hansen, and Patrick Volker	Coastal wind speed gradients at the Anholt wind farm from SCADA, SAR and WRF	Click for full presentation
2.B: CDF APPLICATIONS 2				
Brasseur, James (Session Chair)				
1:30 PM	Mavriplis, PhD, Prof. Dimitri (Keynote)	Dimitri Mavriplis, University of Wyoming	Multidisciplinary Blade Resolved Wind Farm Simulations using High Performance Computing	Click for full presentation
2:00 PM	Misner, Greg	Greg Misner, University, Hamilton, Canada , Shawn Armstrong and Stephen Tullis	Flow divergence around higher-solidity straight-bladed vertical axis wind turbines	
2:15 PM	Nielson, Jordan	Jordan Nielson, University of Texas at San Antonio and Kiran Bhaganagar	Convective Surface Heat Flux Effects on Wind Turbine Power	Click for full presentation
2:30 PM	Doubrawa, Paula	Paula Doubrawa, National Wind Technology Center, National Renewable Energy Laboratory , Pat Moriarty, Matt Churchfield, Eliot Quon, Paul Fleming	Wake Characteristics from Scaled and Full-Scale Wind Turbines Based on Measurements and Simulations	
2:45 PM	Ali (Presented by Raul Bayoan Cal)	Naseem Ali, Portland State University, Nicholas Hamilton, Gerard Cortina, Marc Calaf and Raúl Bayoán Cal, Portland State University	Turbulence Characteristics via Invariants of the Reynolds Stress Anisotropy Tensor in a Thermally Stratified Wind Turbine Array Boundary Layer	
BREAK (3:00 PM)				

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3.A: WFIP2				
Cline, Joel (Session Chair)				
3:30 PM	Delwik, Ebba (Keynote)	E. Dellwik, DTU Wind Energy, Roskilde, Denmark, M. Badger, N. Angelou, J. Mann, I. Karagali, A.N. Hahmann, D. Cavar and P van der Laan	Modeling and Validation across Scales: Parametrizing the effect of the forested landscape	Click for full presentation
4:00 PM	Berg, Larry	Larry K. Berg, Pacific Northwest National Laboratory, Richland, Washington, Joel Cline, Melinda Marquis, Jim McCaa, David Cook, Richard Eckman, Harindra Fernando, Julie Lundquist, William J. Shaw, Justin Sharp, Sonia Harton, James M. Wilczak	Overview of WFIP 2 Observations: Concept, Execution, and Results	Click for full presentation
4:15 PM	Pichugina, Yelena	Y. Pichugina, Cooperative Institute for Research in Environmental Sciences, Boulder, CO, A. Brewer, R. Banta, A. Choukulkar, and T. Bonin, J. Cline, J. Kenyon, M. Marquis and J. Olson	Lidar Technology for Improvements in Wind Resource Assessment and Power Forecasts	Click for full presentation
4:30 PM	Djalalova (presented by James Wilczak)	I. Djalalova, L. Bianco, J. Wilczak, NOAA/ESRL, J. Olson, A. Brewer, A. Choukulkar, R. Eckman, J. Kenyon, J. Lundquist and S. Wharton	A comparison of 80m wind speed measurements from lidars, sodars, and two operational models during WFIP2	Click for full presentation
4:45 PM	Olson, Joseph	Joseph B. Olson, University of Colorado/CIRES and NOAA/ESRL, M. Marquis, J. Kenyon, M. Toy, Y. Pichugina, A. Choukulkar, T. Bonin, R. Banta, L. Bianco, I. Djalalova, K. McCaffrey, J. Wilczak, K. Lantz, C. Long, S. Redfern, J. McCaa, M. Stoelinga, E. Grimit, J. Cline, W. Shaw, J. Lundquist, K. Lundquist, L. Berg and Justin Sharp	Model Development Efforts During the Wind Forecast Improvement Project 2 (WFIP2)	
3.B: SCIENCE & APPLICATIONS				
Sempreviva, Anna Maria (Session Chair)				
3:30 PM	Haupt, Sue Ellen (Keynote)	Sue Ellen Haupt, NCAR		Click for full presentation
4:00 PM	Jha, Pankaj	Pankaj K. Jha, Envision Energy USA Ltd., Houston, TX, Guolei Wang, Kyle S. Hutchings, and Gregory S. Oxley	Wind Plant Power Optimization and Control under Uncertainties	Click for full presentation
4:15 PM	Samara, Farid	F. Samara, Mechanical and Mechatronics Eng., University of Waterloo, Waterloo, Canada and D. A. Johnson	In-blade Load Sensing and Control on 3D Printed Wind Turbine Blades Using Trailing Edge Flaps	Click for full presentation
4:30 PM	Bottasso, Carlo	C.L. Bottasso, Wind Energy Institute, Technical University of Munich, Germany, and Politecnico di Milano, Italy	Wind sensing: A new technology to estimate the inflow at the rotor disk for smart wind turbine and wind farm control	Click for full presentation
4:45 PM	Echeverria-Dura, Fernando	Fernando Echeverria Durá, ACCIONA Windpower, Pamplona, Navarra, Spain and Fermín Mallor Gimenez	Dealing with the curse of dimensionality in the blade multi-disciplinary optimization	Click for full presentation
WEDNESDAY, OCTOBER 25, 2017				
4.A: MESOSCALE TO MICROSCALE COUPLING 1				
Munoz-Esparza, Domingo (Session Chair)				
9:00 AM	Meneveau, PhD, Prof. Charles (Keynote)	Charles Meneveau, Johns Hopkins University, USA	Applying turbulent boundary layer concepts to flows in wind farms	
9:30 AM	Jimenez Munoz, Pedro	Pedro A. Jiménez, National Center for Atmospheric Research, Boulder, CO, USA, Branko Kosović, Alberto Martilli, Sue E. Haupt, Joseph B. Olson and JianWen Bao	A three dimensional PBL parameterization to improve wind forecasting at sub-kilometer scales	Click for full presentation
9:45 AM	Mirocha, Jeffrey	Jeffrey D. Mirocha, Lawrence Livermore National Laboratory, Livermore, CA, Raj K. Rai b, Matthew J. Churchfield, Yan Feng, Caroline Draxl, Javier Sanz Rodrigo, Brandon L. Ennis, Branko Kosović, and Sue Ellen Haupt	An investigation of online and offline mesoscale-microscale coupling techniques during unsteady meteorological conditions	
10:00 AM	Rai, Raj	Raj K. Rai, Pacific Northwest National Laboratory, Richland, Washington, USA, Larry K. Berg, Branko Kosović, Jeffrey D. Mirocha, Sue Ellen Haupt, Brandon L. Ennis and Caroline Draxl	Evaluation of the Impact on Terra Incognita for Mesoscale and Microscale WRF Simulations	
10:15 AM	Neher, James	James M.T. Neher, University of California at Berkeley, Leendert van Veen and Fotini K. Chow	Coupled mesoscale and large-eddy simulations of a wind turbine wake over complex terrain	

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4.B: CONTROLS 1				
Pao, Lucy (Session Chair)				
9:00 AM	Johnson, PhD, Prof. Kathryn (Keynote)	Professor Kathryn Johnson, PhD, Colorado School of Mines	Using modeling to support control design and testing for wind energy systems	
9:30 AM	Rott, Andreas	Andreas Rott, ForWind –Center for Wind Energy Research, Institute of Physics, University of Oldenburg, Germany, Bart Doekemeijer, Janna Seifert, Jan-Willem van Wingerden and Martin Kühn	Accounting for wind direction variability and uncertainty by robust active wake deflection control in wind farms	Click for full presentation
9:45 AM	Sinner, Michael	Michael N. Sinner, University of Colorado, Boulder, Colorado and Lucy Y. Pao	Individual and Collective Pitch Actuation using Lidar-Enabled Model Predictive Control	Click for full presentation
10:00 AM	Hamilton, Nicholas	Nicholas Hamilton, Portland State University, Oregon, Bianca Viggiano, Marc Calaf, Murat Tutkun, and Raúl Bayoán Cal	Towards a Wind Turbine Wake Reduced-Order Model	Click for full presentation
10:15 AM	Kianbahkt, Sepideh	Sepideh Kianbakht, Colorado School of Mines	Shutdown Controller Design for a 13 MW Segmented Ultralight Morphing Rotor Wind Turbine	
BREAK (10:30 AM)				
5.A. MESOSCALE TO MICROSCALE COUPLING 2				
Kosovic, Branko (Session Chair)				
11:00 AM	Meyers, Johan (Keynote)	Johan Meyers KU Leuven, Mechanical Engineering, Celestijnenlaan 300A, B3001 Leuven, Belgium	Wind farms and gravity waves	
11:30 AM	Sever, Gokhan	Gökhan Sever, Argonne National Laboratory, Argonne, IL, Yan Feng and Rao Kotamarthi	A turbulence library for asynchronous coupling of meso and microscale models	Click for full presentation
11:45 AM	Munoz-Esparza, Domingo	Domingo Muñoz-Esparza, National Center for Atmospheric Research, Boulder, Colorado, Branko Kosović, Jeremy A. Sauer, Julie K. Lundquist, and Rodman R. Linn	Improved representation of small-scale turbulence and intra-hour variability in the stable boundary layer by coupling mesoscale and large-eddy simulation models	Click for full presentation
12:00 PM	Mazzaro, Laura	Laura J. Mazzaro, Los Alamos National Laboratory, Los Alamos, NM and University of Colorado, Boulder, CO, Domingo Muñoz-Esparza, Julie K. Lundquist, and Rodman R. Linn	Nested mesoscale-to-LES modeling of the atmospheric boundary layer in the presence of under-resolved convective structures	Click for full presentation
12:15 PM	Kosovic, Branko	Branko Kosović, National Center for Atmospheric Research, Boulder, Colorado, Jeffrey D. Mirocha, Matthew J. Churchfield, Domingo Muñoz-Esparza, Raj K. Rai, Yan Feng, Sue Ellen Haupt, Barbara Brown, Brandon L. Ennis, Caroline Draxl, Javier Sanz Rodrigo, William J. Shaw, Larry K. Berg, Pat Moriarty, Rodman Linn, R. Veerabhadra Kotamarthi	Assessment of large-eddy simulations of the atmospheric boundary layer for wind energy applications	
5.B. CONTROLS 2				
Veers, Paul (Session Chair)				
11:00 AM	Fleming, PhD, Paul (Keynote)	Paul Fleming, NREL	Wind Farm Control at the National Renewable Energy Laboratory (NREL)	
11:30 AM	Zalkind, Daniel	Daniel S. Zalkind, University of Colorado, Boulder, Lucy Y. Pao and Christopher J. Bay	An Analysis of Peak Load Shaving Control Methods	Click for full presentation
11:45 AM	Bay, Christopher	Christopher J. Bay, Colorado School of Mines, Golden, CO, Timothy Taylora, Jennifer Annonib, Lucy Y. Paoc, and Kathryn E. Johnson	Distributed Model Predictive Control of Wind Farms	
12:00 PM	Bartl, Jan	J. Bartl, Norwegian University of Science and Technology, Trondheim, Norway and L. Sætran	Experimental testing of wind turbine wake control	Click for full presentation
12:15 PM	Cole, Samuel	Samuel B. Cole, University of New Hampshire, Durham, NH, Gavin E. Hess, Barry K. Fussell and Martin M. Wosnik	Design and Performance of a Controllable One-Meter Scale Research Wind Turbine	Click for full presentation
LUNCH BREAK (12:30 PM)				
6.A: ENABLING EFFORTS 1				
Gail, William (Session Chair)				
1:30 PM	Machefaux, PhD, Ewan (Keynote)	Ewan Machefaux, PhD, Wind Systems A/S, Denmark	Vestas Simulation Environment	

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2:00 PM	Liu, Yubao	Yubao Liu, National Center for Atmospheric Research (NCAR), Boulder, CO, Will Y.Y. Cheng, Yuewei Liu, Gregory Roux, Linlin Pan, Luca Delle Monache, Si Shen, Haoliang Wang, Weisheng Wang, Shuanglei Feng, Chun Liu, Shuanglong Jin, Bo Wang, Ju Hu, Zongpeng Song, Xiaolin Liu	Numerical Weather Prediction Capabilities for Power Grid Weather Services of the State Grid Corporation of China	Click for full presentation
2:15 PM	Lunacek, Monte	Monte Lunacek, National Renewable Energy Laboratory, Golden, Colorado, M. Jason Fields, Joseph C. Y. Lee, John Meissner, Caleb Phillips, Shuangwen Sheng and Anna Craig	Assessing Biases in Pre-Construction P50: A Historical Validation Survey	
2:30 PM	Giebel, Gregor (presented by Caroline Draxl)	Gregor Giebel, Joel Cline, Caroline Draxl, National Renewable Energy Laboratory, Golden, Colorado, Helmut Frank, Bri-Mathias Hodge, George Kariniotakis, Jakob Messner, Corinna Möhrlen, Pierre Pinson, and Will Shaw	IEA Wind Task 36 Forecasting	
2:45 PM	Roadman, Jason	Jason Roadman, NREL, Golden, Colorado, United States and Elise DeGeorge	Technology Development and Innovation to Address Wind Wildlife Operational Challenges	
6.B: ANALYSIS & DESIGN				
Pichugina, Yelena (Session Chair)				
1:30 PM	Keller, PhD, Jonathan (Keynote)	Jonathan Keller, National Renewable Energy Laboratory, Golden, CO, Benjamin Gould and Aaron Greco	Investigating Bearing Failures in Wind Turbine Drivetrains	
2:00 PM	Larsen, Gunner	G. C. Larsen, Hansen Technical University of Denmark, T.J. Larsen and K.S. Hansen	Loads in wind farms under non-neutral ABL stability conditions – a full-scale validation study of the DWM model.	Click for full presentation
2:15 PM	Hassanzadeh Hassanabad, Arash	Arash Hassanzadeh, University of Wyoming, Laramie, Andrew Kirby, Rajib Roy, Jonathan Naughton	Design and Simulation of Small Scale Wind Turbine Blade for Wind Tunnel Wake Testing	Click for full presentation
2:30 PM	Romanic, Djordje	Djordje Romanic, Wind Engineering, Energy and Environment (WindEEE) Research Institute, Western University, London, Ontario, Canada and Horia Hangan	Wind Resource Assessment in Tornado Prone Area in the United States	
2:45 PM	Worsnop, Rochelle	Rochelle P. Worsnop, University of Colorado, Boulder, Julie K. Lundquist, George H. Bryan, Rick Damiani, and Walt Musial	Gusts and Shear Within Hurricane Eyewalls Can Exceed Offshore Wind Turbine Design Standards	Click for full presentation
BREAK (3:00 PM)				
POSTER SESSION (3:30 PM - 5:00 PM)				
	Arthurs, Claire	Claire R. Arthurs, Georgia Institute of Technology, Atlanta, Latha Sethuraman, Katherine Dykes and Lee Jay Fingersh	Structural design optimization of doubly-fed induction generators using GeneratorSE	
	Artigao, Estefania	E. Artigao, Renewable Energy Research Institute, UCLM, Albacete, Spain, E. Gomez Lazaro and A. Honrubia Escribano	Wind Turbine Doubly-Fed Induction Generator Condition Monitoring – A Case Study	
	Bao, Jingyi	Jingyi Bao, University of California, Berkeley, Katherine A. Lundquist, Fotini K. Chow	Implementation of a log-law immersed boundary method for flow over steep terrain	
	Doubrawa, Paula	Paula Doubrawa, National Wind Technology Center, Boulder, CO, A. Montornès, R. J. Barthelmie and S. C. Pryor	Analysis of Different Gray Zone Treatments in WRF-LES Real Case Simulations	
	Evans, Humberto Bocanegra	Humberto Bocanegra Evans, Texas Tech University, Lubbock, Luciano Castillo, Ali M. Hamed, Serdar Gorumlu, Ali Doosttalab, Burak Aksak and Leonardo P. Chamorro	Effect of Bio-inspired surface roughness on a wind turbine section	
	Han, Yi	Yi Han, University of Wyoming, Laramie and Michael Stoellinger	RANS Simulation of Atmospheric Boundary Layer Flow over Complex Terrain with Validation of Field Measurements under Neutral Stability Condition	
	Hayes, Austin	Austin C. Hayes, *Rochester Institute of Technology, Rochester, NY, Latha Sethuraman, and Lee J. Fingersh	Structural Mass Saving Potential of a 5MW Direct Drive Generator Designed for Additive Manufacturing	
	Lee, Joseph	Joseph C. Y. Lee, University of Colorado Boulder and Julie K. Lundquist	Evaluation of the Wind Farm Parameterization in the Weather Research and Forecasting Model with Meteorological and Turbine Power Data	

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	Martin, Dana	Dana Martin, Colorado School of Mines and Kathryn Johnson	Analysis of Rotor Torque Sensitivity for a Wind Speed Estimator as Applied to an Extreme Scale, Segmented Ultra-light Morphing Rotor	
	Mazzaro, Laura	Laura J. Mazzaro, Los Alamos National Laboratory, Los Alamos, NM and University of Colorado, Boulder, CO, Eunmo Koo, Julie K. Lundquist, and Rodman R. Linn	A New Method for Turbulence Generation in Large Eddy Simulations Using Horizontal Momentum Perturbations.	
	McCarty, Brandi	Brandi McCarty, Cooperative Institute for the Research in Environmental Sciences, Boulder, CO, Yelena Pichugina, Aditya Choukulkar, Tim Bonin, W. Alan Brewer and Melinda Marquis	Analysis of a complex terrain effect on wind flow pattern using lidar and nacelle-mounted anemometer measurements.	
	Persson, Noah	N. Persson, Cooperative Institute for Research in Environmental Sciences, Boulder and the University of Colorado Boulder, Y. Pichugina, A. Brewer, R. Banta, A. Choukulkar, T. Bonin	Analysis of wind flow over complex terrain using scanning Doppler lidar measurements	
	Quon, Eliot	Eliot W. Quon, National Renewable Energy Laboratory, Golden, CO, Tyler J. Ambrico, Aditya S. Ghate, Matthew J. Churchfield	Stochastic Velocity Perturbation Strategies for Mesoscale to Microscale Coupling and Wind Turbine Aeroelastic Simulation	
	Rott, Andreas	Andreas Rott, orWind –Center for Wind Energy Research, Institute of Physics, University of Oldenburg, Germany, Bart Doekemeijer, Janna Seifert, Jan-Willem van Wingerden and Martin Kühn	Accounting for wind direction variability and uncertainty by robust active wake deflection control in wind farms	
	Roy, Rajib	Rajib Roy, University of Wyoming, Laramie and Michael Stoellinger	Multi-stage Large Eddy Simulation for Meso to Micro-scale Coupling for Wind Farm Applications	
	Shahriari, Mehdi	M. Shahriari, Pennsylvania State University, G. Cervone, Seth Blumsack and Luca Delle Monache	Using Analog Ensemble to create optimal wind portfolios	
	Siedersleben, Simon	Simon K. Siedersleben, Institute of Meteorology and Climate Research, (IMK-IFU), KIT, Garmisch-Partenkirchen, Germany, Andreas Platis, Konrad Baerfuss, Bughsin Djath, Beatriz Canadillas, Astrid Lampert, Johannes Schulz-Stellenfleth, Tom Neuman, Jens Bange, Stefan Emeis	Evaluation of a Mesoscale Wind Farm Parameterization by Aircraft Measurements	
	Simon, Elliot	Elliot I. Simon, DTU Wind Energy (Risø), Roskilde, Denmark, Michael S. Courtney and Guillaume Léa	Gust Prediction Using Lidar Observations	
	Worsnop, Rochelle	Rochelle P. Worsnop, University of Colorado, Boulder, Michael Scheuerer, Thomas M. Hamill, and Julie K. Lundquist	Improving Wind Ramp Forecasts by the HRRR System via Statistical Post-processing	
RECEPTION (5:00 PM - 6:30 PM)				
THURSDAY, OCTOBER 26, 2017				
8.A: EXPERIMENTAL SCALE SIMULATIONS 1				
Peinke, Joachim (Session Chair)				
9:00 AM	Naughton, Jonathan (Keynote)	Jonathan, Naughton, University of Wyoming		Click for full presentation
9:30 AM	Schottler, Jannik	J. Schottler, orWind - University of Oldenburg, Oldenburg, Germany, J. Bartl, F. Mühle, J. Peinke and M. Hölling	The wakes behind two different yawed model wind turbines: From wake deflection towards two-point statistics	Click for full presentation
9:45 AM	Neunaber, Ingrid	I. Neunaber, ForWind - University of Oldenburg, Oldenburg, Germany, J. Schottler, M. Hölling and J. Peinke	Experimental study on the effect of intermittent inflow on properties in the wind turbine wake	
10:00 AM	Berger, Frederik	F. Berger, Carl von Ossietzky University, Oldenburg, Lower Saxony, Germany, V. Petrović, M. Hölling and M. Kühn	Scaled wind turbine test setup in a wind tunnel with active turbulence generation for induction aerodynamics, load and control experiments	
10:15 AM	Harms, Tanner	Tanner Harms, University of Wyoming, Laramie, Pourya Nikoueeayan, and Jonathan Naughton	Analysis of the Cycle-to-Cycle Behavior of Dynamic Stall on Thick Airfoils	
8.B: ENABLING EFFORTS 2				
Marquis, Melinda (Session Chair)				

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9:00 AM	Sempreviva, Anna Maria (Keynote)	Anna Maria Sempreviva, Technical University of Denmark, DTU Wind Energy, Roskilde, Denmark, David Robert Verelst, Gregor Giebel, Lars Pilgaard Mikkelsen, Christian Bak, Hilmar Kjartansson Danielsen, Nikola Vasiljevic, Allan Vesth, Mattias Anderson, Stephan Barth, Javier Sanz Rodrigo, Pawel Gancarski, Tor Inge Reigstad, Hans Christian Bolstad, Jan Willem Wagenaar, Koen Hermans	Wind energy open data web portal: Metadata and Taxonomy for data search	Click for full presentation
9:30 AM	Vasiljevic, Nikola	N. Vasiljević, DTU Wind Energy, Roskilde, Denmark, A. Vignaroli, C. Hasager, L. Pauscher T. Klaas, J.C. Lopes, H.C. Bolstad and L.M. Bardal	The rise of big lidar datasets and need for lidar data standardization, contextualization and dissemination	Click for full presentation
9:45 AM	Fields, Jason	Jason Fields, NREL		
10:00 AM	Takle, Gene	Eugene S. Takle, University of Iowa, Daniel A. Rajewski, Samantha L. Purdy, Jielun Sun, and Sergej Zilitinkevich	Exchanges in Surface and Boundary Layer Reconsidered: Introducing FaNTASTIC-1	Click for full presentation
10:15 AM	Castillo, Luciano	Luciano Castillo, Purdue University, West Lafayette, IN and Walter Gutierrez	The case for wind energy on water security	Click for full presentation
BREAK (10:30 AM)				
9.A: EXPERIMENTAL SCALE SIMULATIONS 2				
Naughton, Jonathan (Session Chair)				
11:00 AM	Dixon, Kristian (Keynote)	Kristian R. Dixon Envision Energy Inc., Boulder, Colorado	Rotor System Design in an Industrial Context at Envision Energy	Click for full presentation
11:30 AM	Taylor-Power, Gregory	Gregory G. Taylor-Power, University of New Hampshire, Durham, NH and Martin M. Wosnik	Experimental Study of the Turbulent Wake Flow of a One Meter Scale Research Wind Turbine in a Large Boundary Layer Wind Tunnel	Click for full presentation
11:45 AM	Camp, Elizabeth	Elizabeth H. Camp, Portland State University and Raúl Bayoán Cal	Low Dimensional Representations and Anisotropy of a Model Wind Turbine Array Versus an Array of Porous Disks	Click for full presentation
12:00 PM	Turner, John	John J. Turner V, *University of New Hampshire, Durham and Martin M. Wosnik	Fully developed experimental wind turbine array boundary layer	Click for full presentation
12:15 PM	Holmes, Marlin	Marlin J. Holmes, University of Wyoming, Laramie, Jonathan W. Naughton, and Eric J. DeMillard	Experimental Characterization of an Axisymmetric Swirling Wake	Click for full presentation
9.B: OPTIMIZATION & UNCERTAINTY QUANTIFICATION				
Jha, Pankaj (Session Chair)				
11:00 AM	Maniaci, David (Keynote)	David Maniaci, Sandia National Laboratories, Thomas G. Herges and Brian T. Naughton	Wind Turbine Wake Research at the SWIFT Facility	
11:30 AM	Delle Monache, Luca	L. Delle Monache, NCAR/RAL, S. Alessandrini, S.E. Haupt, B. Kosovic	Wind power forecasting with the analog ensemble	Click for full presentation
11:45 AM	Craig, Anna	Anna E. Craig, National Renewable Energy Laboratory, Golden, CO and Patrick J. Moriarty	Uncertainty propagation through wind flow and wake loss models	Click for full presentation
12:00 PM	Lee, Joseph	Joseph C. Y. Lee, National Renewable Energy Laboratory, Golden, Colorado and University of Colorado Boulder, M. Jason Fields and Julie K. Lundquist	Evaluating the Methodology of Assessing Inter-Annual Variability of Wind Speed	
12:15 PM	Quick, Julian	Julian Quick, University of Colorado Boulder and National Renewable Energy Laboratory, Golden, CO, Jennifer Annoni, Ryan King, Paul Fleming, Andrew Ning, Katherine Dykes	Optimization Under Uncertainty for Wake Steering Strategies	