Wind turbine loads & control - Research outputs - DTU Orbit (12/11/2019)

Active power dispatch for supporting grid frequency regulation in wind farms considering fatigue load
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review

A review of state-of-the-art in torque generation and control of floating vertical-axis wind turbines
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2019 › Research › peer-review

Assessment of offshore wind turbines in extreme weather conditions
Wang, S., 2019, (Accepted/In press)

A vortex-based tip/smearing correction for the actuator line
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review

Changes in design driving load cases: Operating an upwind turbine with a downwind rotor configuration
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review

Comparing rotor plane induction determined from full-scale measurements and CFD simulations
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review

Estimation and Control of Wind Turbine Tower Vibrations Based on Individual Blade-Pitch Strategies
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review

Fail-safe truss topology optimization
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review

Full-scale 3D remote sensing of wake turbulence - A taster
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2019 › Research › peer-review

Grand challenges in the science of wind energy
Research output: Contribution to journal › Review – Annual report year: 2019 › Research › peer-review

Integrated Global Optimization Model for Electrical Cables in Offshore Wind Farms
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review
More accurate aeroelastic wind-turbine load simulations using detailed inflow information
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review

On the design and performance of a power electronics converter for the DeepWind project
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2019 › Research › peer-review

On the design, laboratory model and performance of the controlled magnetic journal bearing for the DeepWind project
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2019 › Research › peer-review

Optimal open loop wind farm control
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2019 › Research › peer-review

Optimised de-rated wind turbine response and loading through extended controller gain-scheduling
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2019 › Research › peer-review

Optimized spacing and thrust for a row of aligned turbines for maximum power production
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2019 › Research › peer-review

Optimized spacing and thrust for a row of aligned turbines for maximum power production
Aagaard Madsen, H., Larsen, G. C. & Pedersen, M. M., 2019
Research output: Non-textual form › Sound/Visual production (digital) – Annual report year: 2019 › Research

Permanent accumulated rotation of an offshore monopile wind turbine in sand during a storm
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review

Porous Structural Design for Additive Manufacturing and Improved Damage Tolerance
Dou, S., 2019. 1 p.
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2019 › Research › peer-review

Porous Structural Design for Additive Manufacturing and Improved Damage Tolerance
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2019 › Research › peer-review
Dynamic inflow effects in measurements and high-fidelity computations
Research output: Contribution to journal › Journal article – Annual report year: 2018 › Research › peer-review

Dynamic stall model modifications to improve the modeling of vertical axis wind turbines
Research output: Book/Report › Report – Annual report year: 2018 › Research › peer-review

Engineering an optimal wind farm using surrogate models: EOWF using SUMO
Research output: Contribution to journal › Journal article – Annual report year: 2018 › Research › peer-review

Evaluation of the Effect of Spar Cap Fiber Angle of Bending-Torsion Coupled Blades on the Aero-Structural Performance of Wind Turbines
Research output: Contribution to journal › Journal article – Annual report year: 2018 › Research › peer-review

Fast trailed and bound vorticity modeling of swept wind turbine blades
Research output: Contribution to journal › Conference article – Annual report year: 2018 › Research › peer-review

Free flow wind speed from a blade-mounted flow sensor
Research output: Contribution to journal › Journal article – Annual report year: 2018 › Research › peer-review

High fidelity simulation of multi-MW rotor aerodynamics by using a multifan
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2018 › Research › peer-review

High-resolution periodic mode shapes identification for wind turbines
Research output: Contribution to journal › Conference article – Annual report year: 2018 › Research › peer-review

Impact on wind turbine loads from different down regulation control strategies
Research output: Contribution to journal › Conference article – Annual report year: 2018 › Research › peer-review

Improved modelling of fatigue loads in wind farms under non-neutral ABL stability conditions
Research output: Contribution to journal › Conference article – Annual report year: 2018 › Research › peer-review

Inflow measurements from blade-mounted flow sensors: Flow analysis, application and aeroelastic response
Trailed vorticity modeling for aeroelastic wind turbine simulations in standstill
Research output: Contribution to journal › Journal article – Annual report year: 2018 › Research › peer-review

Using wind speed from a blade-mounted flow sensor for power and load assessment on modern wind turbines
Research output: Contribution to journal › Journal article – Annual report year: 2017 › Research › peer-review

V52 Tower Top analysis and Wheatstone Bridge Signal Recreation
Research output: Book/Report › Report – Annual report year: 2018 › Research › peer-review

Validation of the dynamic wake meander model with focus on tower loads
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2017 › Research › peer-review

Validation of the dynamic wake meander model with focus on tower loads: Paper
Research output: Non-textual form › Sound/Visual production (digital) – Annual report year: 2017 › Research

Variable speed control for Vertical Axis Wind Turbine
Research output: Book/Report › Report – Annual report year: 2017 › Research › peer-review

Vindmøller. Opskalering, Koncepter
Larsen, T. J., 2017
Research output: Non-textual form › Sound/Visual production (digital) – Annual report year: 2017 › Research › peer-review

Wind farm design in complex terrain: the FarmOpt methodology
Research output: Contribution to conference › Paper – Annual report year: 2017 › Research › peer-review

Wind farm design in complex terrain: the FarmOpt methodology
Research output: Non-textual form › Sound/Visual production (digital) – Annual report year: 2017 › Research

Wind turbine influence on surfers wind conditions at Hansholm
Research output: Book/Report › Report – Annual report year: 2017 › Research › peer-review

A coupled near and far wake model for wind turbine aerodynamics
Research output: Contribution to journal › Journal article – Annual report year: 2016 › Research › peer-review

Aerial sensor for wind turbines Design, implementation and demonstration of the technology
Research output: Book/Report › Report – Annual report year: 2016 › Research › peer-review

Aerelastic Optimization of a 10 MW Wind Turbine Blade with Active Trailing Edge Flaps
Research output: Book/Report › Report – Annual report year: 2016 › Research › peer-review
Aeroservoelastic analysis of storm-ride-through control strategies for wind turbines

A LiDAR-assisted model predictive controller added on a traditional wind turbine controller

Analysis and design of bend-twist coupled wind turbine blades

A novel full scale experimental characterization of wind turbine aero-acoustic noise sources - preliminary results

Calculating the sensitivity of wind turbine loads to wind inputs using response surfaces

Demonstration of partial pitch 2-bladed wind turbine

DeRisk - Accurate prediction of ULS wave loads. Outlook and first results

Design Load Basis for Offshore Wind turbines: DTU Wind Energy Report No. E-0133
Design of an aeroelastically tailored 10 MW wind turbine rotor
Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

Diagnosis of wind turbine rotor system
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2016 › Research › peer-review

Dynamic behavior of parked wind turbine at extreme wind speed
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2016 › Research › peer-review

Dynamics of the interaction between the rotor and the induction zone
Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

Effect of Turbulence on Power for Bend-Twist Coupled Blades
Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

Experimental and numerical study of a 10MW TLP wind turbine in waves and wind
Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

Experimental and Numerical Study of Rotor Dynamics of a Two- and Three-Bladed Wind Turbine
Research output: Contribution to journal › Journal article – Annual report year: 2016 › Research › peer-review

Floating substructure flexibility of large-volume 10MW offshore wind turbine platforms in dynamic calculations
Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

Impact of atmospheric stability conditions on wind farm loading and production
Research output: Book/Report › Report – Annual report year: 2016 › Research › peer-review

Impact of a wind turbine on turbulence: Un-freezing turbulence by means of a simple vortex particle approach
Research output: Contribution to journal › Journal article – Annual report year: 2016 › Research › peer-review

In search for a canonical design ABL stability class for wind farm turbines
Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review
Investigation of wake interaction using full-scale lidar measurements and large eddy simulation: Investigation of wake interaction using full-scale lidar measurements and LES
Research output: Contribution to journal › Journal article – Annual report year: 2016 › Research › peer-review

Lidar configurations for wind turbine control
Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

Mapping Wind Farm Loads and Power Production - A Case Study on Horns Rev 1
Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

Modal dynamics of structures with bladed isotropic rotors and its complexity for 2-bladed rotors
Research output: Contribution to journal › Journal article – Annual report year: 2016 › Research › peer-review

Normalized performance and load data for the deepwind demonstrator in controlled conditions
Research output: Contribution to journal › Journal article – Annual report year: 2017 › Research › peer-review

Open access wind tunnel measurements of a downwind free yawing wind turbine
Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

Open Access Wind Tunnel Measurements of a Downwind Free Yawing Wind Turbine
Research output: Non-textual form › Sound/Visual production (digital) – Annual report year: 2016 › Research

PI controller design of a wind turbine: evaluation of the pole-placement method and tuning using constrained optimization
Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

Reduced design load basis for ultimate blade loads estimation in multidisciplinary design optimization frameworks
Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

Reduction of fatigue loads on jacket substructure through blade design optimization for multimegawatt wind turbines at 50 m water depths
Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

Steady State Comparisons HAWC2 v12.2 vs HAWCStab2 v2.12
Research output: Book/Report › Report – Annual report year: 2016 › Research › peer-review

Timoshenko beam element with anisotropic cross-sectional properties
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2016 › Research › peer-review

**Trailed vorticity modeling for aeroelastic wind turbine simulations in stand still**

Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

**Using Pretwist to Reduce Power Loss of Bend-Twist Coupled Blades**

Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2016 › Research › peer-review

**Validation of buoyancy driven spectral tensor model using HATS data**

Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

**Validation of Superelement Modelling of Complex Offshore Support Structures**

Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2016 › Research › peer-review

**Vertical Axis Wind Turbine Design Load Cases Investigation and Comparison with Horizontal Axis Wind Turbine**

Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

**Wake affected offshore tower and foundation loads**

Research output: Book/Report › Report – Annual report year: 2016 › Research › peer-review

**Wake flow characteristics at high wind speed**

Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2016 › Research › peer-review

**Wake Influence on Dynamic Load Characteristics of Offshore Floating Wind Turbines**

Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

**Wind tunnel testing of the DeepWind demonstrator in design and tilted operating conditions**

Research output: Contribution to journal › Journal article – Annual report year: 2016 › Research › peer-review

**Wind turbine wake measurement in complex terrain**

Research output: Contribution to journal › Conference article – Annual report year: 2016 › Research › peer-review

**Wind turbine wake models developed at the Technical University of Denmark: A review**