

PROGRAM

June 11 and 12, 2026 – Hamburg

SYMPOSIUM Vibration of Wind Turbines

organized by Wölfel

PROGRAM COMMITTEE

Conference Chairman

Prof. Dr.-Ing. Peter Kraemer, Head of Chair for Mechanics with Focus on Structural Health Monitoring, Speaker of Center for Sensor Systems (ZESS), University of Siegen

Dr. rer. nat. Edwin Becker, Head of Service & Diagnostic Center, Fluke Deutschland GmbH, Ismaning

Dr.-Ing. Andreas Bockstedte, Senior Engineer, Turbine Engineering, DNV Renewables Certification GmbH, Hamburg

Dr.-Ing. Carsten Ebert, CTO, Wölfel Wind Systems GmbH + Co. KG, Höchberg

Prof. Dr.-Ing. Martin Huhn, Technische Hochschule Lübeck, Predictive Maintenance and Condition Monitoring, Lübeck

Dr.-Ing. Klaus Kaiser, Project Engineer, DEWI-OCC GmbH, Bremen

Dr.-Ing. Martin Klönne, Senior Specialist PTR NVH, Powertrain Module – NHV & Verification, Power Solution, Vestas Nacelles Deutschland GmbH, Dortmund

Dr.-Ing. Samer Mtauweg, Owner Ingenieurbüro Dr. Samer Mtauweg / System Dynamics and Diagnostics, Bremerhaven

Dr. Arno van Wingerde, Chief Scientist, Fraunhofer Institute for Wind Energy Systems (IWES), Bremerhaven

Prof. Dr.-Ing. Jan Wenske, Deputy Institute Director, Technical Director, Fraunhofer Institute for Wind Energy Systems (IWES), Bremerhaven

Dr. Timo Zundel, Head of Modelling & Verification, Winergy, Flender GmbH, Voerde

VENUE:

EMPIRE RIVERSIDE HOTEL
Bernhard-Nocht-Straße 97
20359 Hamburg
Germany

PARTICIPATION FEE:

€ 880 + VAT

[CLICK HERE TO REGISTER](#)

THURSDAY, JUNE 11, 2026



12:00 **Registration and Business Lunch Buffet**



13:00 **Welcome and Opening**

Prof. Dr.-Ing. Peter Kraemer, Head of Chair for Mechanics with Focus on Structural Health Monitoring, Speaker of Center for Sensor Systems (ZESS), University of Siegen



13:15 **Key Note – Climate Change: Causes and Consequences**

- Increasing CO₂ concentrations and temperatures
- Melting ice
- Rising sea level
- Changing wind patterns
- More frequent extreme weather

Prof. em. Dr. Peter Lemke, Senior Advisor at Alfred Wegener Institute (AWI), Helmholtz Centre for Polar and Marine Research, Bremerhaven



DESIGN, MEASUREMENT AND LOADS



14:00 **Seismic Monitoring for Offshore Wind Turbines - Connecting Design and Operation**

A real world example case for seismic monitoring of offshore wind turbines:

- Real-time vibration and seismic data acquisition
- Bridging design assumptions with operational reality
- Insights from project implementation
- Enhancing structural safety and performance
- Connecting data, design and operations

Dr. Moritz Häckell, Senior Chief Consultant, Ramboll Deutschland GmbH, Hamburg
Co-Author:

Dr. Jannis Tautz-Weinert, Chief Consultant, Ramboll Deutschland GmbH



14:30 **Challenges in Large Wind Turbine Instability Modeling Associated with Stall Induced Vibrations**

- Challenges in modeling aerodynamic instabilities of large wind turbines
- Different instability regimes identified under varying wind conditions
- Modeling confidence assessed using field measurements and validated simulations with unsteady aerodynamic models

Dr. Galih Bangga, Wind Turbine Aerodynamics Specialist, DNV, Bristol

PROGRAM

15:00 Vibration Reduction in Slender Support Structures Through Laterally Moving Fluid

- Fluid Dynamic Vibration Absorber
- Wind Turbine Tower Oscillations
- Structural Vibration Control

Prof. Peter F. Pelz, Professor at TU Darmstadt, Chair of Fluid Systems

Co-Authors:

Dr.-Ing. Maximilian M.G. Kuhr, TU Darmstadt, Chair of Fluid Systems;
Ingo Dietrich, Industrial Science GmbH, Darmstadt



15:30 Coffee Break

2 STRUCTURAL HEALTH MONITORING



16:00 Key Note – From Data to Decisions: Hybrid Monitoring and Vibration-Driven Life-Cycle Management of Wind Turbine Structures

- Integrating physics-based modelling, operational data, and vibration monitoring for advanced structural health assessment of wind-turbine systems.
- Leveraging graph-based and physics-enhanced machine learning to enable digital twins, condition-based maintenance, and informed lifetime-extension strategies.
- Decision-support for O&M: frameworks for reasoning under uncertainty and linking vibration/health indicators to performance, reliability, and life-cycle cost optimization at both turbine and farm scale.

Prof. Dr. Eleni Chatzi, Chair of Structural Mechanics & Monitoring at ETH Zürich and Former President of the European Academy of Wind Energy

16:45 Damage Detection and Life Time Monitoring of Blade Bearing of Wind Turbine during Operation up to Digital Twin of Pitch System

- Excitation and Acoustics of Electromechanical Systems
- Acoustic Measurements and Diagnosis of Electromechanical Systems
- Damage Patterns and Diagnosis of Rotor Blade Bearings in Wind Turbines
- Possibilities of a SCADA-Data-Based Digital Twin of the Pitch System and Blade Bearing

Dr. Samer Mtauweg, Managing Director, Engineering office Dr. Samer Mtauweg, Bremerhaven

17:15 Fleetwide Load Monitoring Using Artificial and Bayesian Neural Networks

- Farm-wide prediction of damage-equivalent moments using SCADA and accelerometer data
- Comparison of ANN and Bayesian ANN models for DEM estimation
- Validation against measured loads over short- and long-term periods
- Insights for RUL assessment and cost-effective lifetime extension

Dr. Nymfa Noppe, Lead Data Analysis Team, 24SEA, Brussel

Co-Author:

Francisco De Nolasco Santos

17:45 Recommendations for a Standard Approach to Installing Structural Health Monitoring on Fixed Foundation Assets

- Where should the SHM contract sit within the project?
- Where should SHM installation be performed?
- How did we deploy the SHM system on Moray West and what were the challenges we faced?
- Next step opportunities for projects and suppliers in terms of the benefits of standardisation.

Calum Macleod, Operations Readiness Engineer, Ocean Winds UK Limited, Edinburgh
Co-Author:

CEng/MBA, Jamie, Dempster, Ocean Winds UK Limited, Senior Operations Readiness Manager, Edinburgh

Dr. rer. nat. Raphael Crespo Vidal, Project Manager for Structural Health Monitoring, Wölfel Engineering GmbH + Co. KG, Höchberg

18:15 Wrap Up Day 1 & End of Day 1

19:30 Evening Event

FRIDAY, JUNE 12, 2026

08:30 Welcome with Coffee Selection

3 LIFETIME EXTENSION

09:00 Key Note – To live, to die or to be born again? End-of-life considerations for Offshore Wind Farms

- From 20 to 35 or even more years – Challenges and expectations
- DNV's OWLIFE JIP - Offshore Windfarm Life Management and Lifetime Extension
- Interaction of turbine and support structures
- Future outlook – will it be easier with modern wind turbines?

Marcus Klose, Head of Section Offshore Technology and Innovation at DNV Renewables Certification GmbH, Hamburg

09:45 Data-Driven Fatigue Lifetime Assessment of Offshore Wind Turbines: Extrapolation from Short-Term Strain Monitoring

- Data-driven fatigue assessment for offshore wind turbines
- Machine learning models for temporal extrapolation
- Comparison with traditional binning-based approaches
- Validation with five years of Belgian North Sea data

Prof. Christof Devriendt, Professor at Vrije Universiteit Brussel / OWI-lab / 24SEA, Brussel
Co-Author:

Wout Weijtjens, Senior Services Engineer, 24SEA, Brussel

PROGRAM

10:15 **Bridging SHM and Design: Ritz Vector-Based Load Reconstruction within the Agile Design Framework**

- Virtual Sensing
- Load Reconstruction
- Fatigue Assessment
- Lifetime Assessment

Dr. Stefan Wernitz, Head of Data Analytics - Tower and Foundation, Wölfel Wind Systems GmbH + Co. KG, Leipzig

10:45 **Coffee Break**

11:15 **SHM-Based Load Reconstruction for Wind Turbine Lifetime Assessment and End-of-Life Decisions**

A load reconstruction scheme using SHM data and a physics-based virtual sensing approach with Kalman filtering is presented as input to the ReNEW project's digital decision-support tool for identifying the wind turbine end-of-life option with the highest utility.

- Lifetime Assessment
- Structural Health Monitoring
- Load Reconstruction
- Virtual Sensing

Mirjana Ratkovac-Katzur, Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin.
Co-Authors:

Lukas Eichner, Bundesanstalt für Materialforschung und -prüfung;
Matthias Baeßler, Bundesanstalt für Materialforschung und -prüfung

11:45 **Reducing Lifetime Assessment Uncertainties with Calibrated Models and Realistic Environmental Conditions**

- LTE standards define methods to assess wind turbine remaining useful life via aeroelastic simulations, requiring uncertainty quantification from environment and modeling.
- A model calibration process was developed using SCADA and vibration data.
- Improved wind modeling fidelity in aeroelastic simulations, including full turbulence distribution and wake effects, yields more realistic fatigue and increased lifetimes.

Dr. Vincent Le Corre, Technical Lead, Green WITS, Solaize

Co-Author:

Dr. Fabien Caleyron, CTO, GreenWITS, Solaize

12:15 **Business Lunch**

4

NOISE AND NOISE REDUCTION

13:15 **Key Note – A Wind Turbine Manufacturer's Market Perspective on Noise & Tonality**
Fabian Martens, Specialist Noise & Tonality, Vestas Deutschland GmbH

14:00 **Enhanced Reliability and Cost Reduction in Wind Turbine Operations through AI-Based Acoustic Diagnostics**

- AI-based detection of early mechanical anomalies in wind turbines using acoustic data.
- Real-time monitoring and predictive diagnostics without extra sensors.
- Data-driven training from normal and faulty sound patterns.
- Enables early fault detection, reducing downtime and repair costs.

Dr. Lars Osterbrink, CTO, LATODA, Hamburg
Co-Author:

Marko Cerina, Team Lead Prognostics & Developments, Diagnostics & Prognostics – Global Service Engineering, Nordex Energy SE & Co.KG, Hamburg

14:30 **Experimentally identifying vibroacoustic transfer functions of a wind turbine to solve tonality problems**

- Vibroacoustics
- Transfer functions
- Tonalties

Dr. Kilian Schulze-Forster, Development Engineer, Wölfel Wind Systems GmbH + Co. KG
Höchberg

Co-Authors:

Dr. Robert Jirasek, Development Engineer, Wölfel Wind Systems GmbH + Co. KG;

Dr. Philipp Zech, Head of Development Vibration Control Solutions, Wölfel Wind Systems GmbH + Co. KG

15:00 **Continuous Acoustic Monitoring to detect Partial Discharges**

- Validation of the method and insights from field experience
- Introduction to partial discharges and the challenges faced by windfarm operators
- Methods to measure partial discharge activity
- Highlighting how continuous acoustic measurements improve reliability and reduce safety hazards

Jael Masury, Project Manager, OMEXOM Renewable Energies Offshore GmbH, Oldenburg

15:30 **Wrap Up Day 2 & End of Conference**