

**Seventh International Meeting**  
**on**  
**Wind Turbine Noise**  
**Rotterdam, The Netherlands, 2nd – 5th May 2017**

**Abstracts accepted**

Presentations will be either oral, poster or part of a workshop session.

Managing tonality during the planning, design and construction of a wind farm

*Justin Adcock, Christophe Delaire, Daniel Griffin, Alex Morabito*

Noise measurement on a Small Wind Turbine preliminary results

*Mariano Amadio*

Trailing edge serrations - effect of their flap angle on flow and acoustics

*Carlos Arce León, Roberto Merino-Martínez, Daniele Ragni, Stefan Pröbsting, Francesco Avallone, Ashish Singh, Jesper Madsen*

An investigation into the effect of wind shear on the noise emission of modern wind turbines

*Payam Ashtiani, Duncan Halstead*

Airfoil noise reduction using active flow control

*Mahdi Azarpeyvand, Mate Szoke, Weam Elshahar, Yannick Mayer*

Investigation of Amplitude Modulation Noise with a Fully Coupled Noise Source and Propagation Model

*Emre Barlas, Wei Jun Zhu, Wen Zhong Shen, Kaya Dag, Patrick Moriarty*

Windfarm noise assessment methodologies comparison: UNI 11143-7 and ISPRA guidelines.

Different approaches, results, features

*Andrea Bartolazzi, Michela Spizzichino*

Pre-construction Site Prediction Tool for Wind Farm AM - Do We Now Know Enough?

*Jeremy Bass, Andrew Birchby*

Wind turbine noise – an overview of current knowledge and perspectives

*Andrea Bauerdorff, Steffen Körper*

Coupled wind turbine noise generation and propagation - A numerical study

*Franck Bertagnolio*

Wind turbine noise prediction using Olive Tree Lab

*Alexis BIGOT, Panos ECONOMOU, Costas ECONOMOU*

The influence of aero-elastic coupling on rotor sound predictions

*Remy Binois, Thomas Klemme, Sascha Erbsloeh*

Annual analysis of sound propagation from a boreal wind park

*Karl Bolin, Ilkka Karasalo, Esbjörn Olsson*

Developing and presenting a unique and innovative acoustic installation template to offer a spatial, frequency and calibrated reproduction of a wind turbine noise to the public.

*Dominique Bollinger, Xavier Falourd, Lukas Rohr*

Efficient tools for assessing the emergence, audibility and masking potential of wind turbine noise by background noise

*Dominique Bollinger, Xavier Falourd, Romain Feuz, Patrick Marmaroli*

An Investigation into Short-Term Fluctuations in Amplitude Modulation of Wind Turbine Noise

*Ian Bonsma, Nathan Gara, Brian Howe, Nick McCabe*

Wind turbine noise measurement in controlled conditions

*Koen Boorsma, J.G. Schepers*

Use of the Acoustic Camera to accurately localise wind turbine noise sources and their Doppler shift

*Stuart Bradley, Michael Kerscher,, Torben Mikkelsen*

The Challenges and Benefits of Long-Term Noise Monitoring of Wind Farm Sites

*Ethan Brush, James Barnes, Marc Newmark, William Yoder*

Characterizing the acoustic noise from wind turbines by using the divergence of the sound pressure in the ambient

*Valentin Buzduga, Alexandru Buzduga*

An Experimental Parametric Study of Airfoil Trailing Edge Serrations

*Thomas H. CAROLUS, Farhan A. MANEGAR (Univ Siegen) ; Elodie THOUANT (ECL) ; Kevin VOLKMER (Univ Siegen) ; Isabelle SCHMICH-YAMANE (EDF)*

A scoping study on assessment practices for noise impacts from renewable technologies in Scotland

*Matthew Cassidy, Susanne Underwood (Land Use Consultants), Nick James (Land Use Consultants)*

Numerical Prediction of DU96 Airfoil Self Noise using Detached Eddy Simulation

*Kenan Cengiz, Yusuf Özyörük*

Application of the UK IOA Method for Rating Amplitude Modulation

*David Coles, Tom Levet, Matthew Cand*

Sound propagating from wind turbines in winter conditions

*Kristina Conrady, Anna Sjöblom, Conny Larsson*

Variation in wind turbine sound power measurements

*Jon Cooper, Tom Evans*

Using long term monitoring for noise assessment of wind farms

*Eugène de Beer*

Australian Criteria for C-weighted Wind Farm Noise Levels

*Christophe Delaire, Justin Adcock, Daniel Griffin, Lachlan Deen*

The different evaluation-methods of the wind farm noise in Switzerland - computer models/in-situ measurements

*Victor Desarnaulds, Ronan Fécelier, Dimitri Magnin*

Comparison of Sound Propagation Models for Offshore Wind Farms

*Guangsheng (Sam) Du, A.D. Lightstone, Joseph Doran*

Perceptual aspects of wind-turbine noise

*Pierre Dutilleux*

Wind turbine noise assessment by regression tree analysis.

*David Ecotière*

Wind turbine noise at neighbor dwellings, calculations versus measurements.

*Rune Egedal, Lars Sommer Søndergaard, Morten Bording Hansen*

Wind turbine noise: Sound power level measurements 3.0

*Leon Eilders, Eugène de Beer*

Vertical directivity observations based on statistics of low frequency tonal components measured at downwind and upwind locations.

*Xavier Falourd, Dominique Bollinger, Romain Feuz, Patrick Marmaroli*

Effects of Individual Pitch Control on Amplitude Modulated Noise

*Chris Feist, Matt Lueker, Bill Herb, Peter Seiler, Daniel Ossmann*

Modeling and localizing low frequency noise of a wind turbine using an array of acoustic vector sensors

*Daniel Fernandez Comesaña, Krishnaprasad Ramamohan and David Perez Cabo*

Investigation of turbulence interaction noise generated in wake operation

*Andreas Fischer, Helge Aagaard Madsen, Franck Bertagnolio*

Assessment of WTN by separating residual noise without the farm shutdown

*Luca Fredianelli, Paolo Gallo, Gaetano Licitra, Diego Palazzuoli, Stefano Carpita*

Comparison of the IOA method and Japanese F-S method for quantitative assessment of amplitude modulation of wind turbine noise – A study based on the field measurement results in Japan

*Akinori Fukushima, Hideki Tachibana*

Low-frequency micro-seismic radiation by wind turbines and it's interaction with acoustic noise emission

*Theodore V. Gortsas, Zieger, Toni; Triantafyllidis, Theodore; Kudella, Peter; Ritter, Joachim; Polyzos, Demosthenes*

Comparison of Measured and Modelled Wind Turbine Noise in Indian Terrain

*ARIVUKKODI GUNASEKARAN, Dr.S.Gomathinayagam, Dr. S.Kanmani*

An investigation into correlation between stron wind turbine amplitude modulation and environmental conditions

*Duncan Halstead, Payam Ashtiani, Adam Suban-Loewen*

The occurrence of nocturnal wind farm rumbling noise

*Kristy L Hansen, Branko Zajamsek, Colin H. Hansen*

Annoyance caused by amplitude modulated wind turbine noise, a study carried out with real far-field recordings of amplitude modulation

*Morten Hansen, To be determined*

LOW FREQUENCY TONES AND BUILDING ELEMENTS

*Malcolm Hayes*

Human response to wind turbine noise: infrasound and amplitude modulation

*William Herb, Peggy Nelson, William Herb, Matt Lueker, Jeff Marr, Noah Stone, John Wachtler*

Low-frequency noise incl. infrasound from wind turbines and other sources

*Lorenz Herrmann, U. Ratzel, O. Bayer, K.-G. Krapf, M. Hoffmann, J. Blaul, C. Mehnert*

Predicted and Measured Trailing-Edge Noise Emission for a 2.3 MW Wind Turbine

*Cordula Hornung, Christoph Scheit, Christian F. Napierala, Matthias Arnold, Andree Altmikus, Thorsten Lutz*

The Institute of Acoustics Reference Method for Rating Amplitude Modulation

*Gavin Irvine*

Epidemiological Study on Long-Term Health Effect of Low-Frequency Noise Produced by Wind Power Stations in Japan

*TATSUYA ISHITAKE, KUNIO HARA, YOSHITAKA MORIMATSU, TATSUHIKO KUBO, YOSHIHISA FUJINO*

Partial masking and the perception of wind turbine noise in ambient sounds

*Anders Johansson, Karl Bolin*

Wind Turbine Rotor Noise Prediction and Reduction for Low Noise Rotor Design

*Mohammad Kamruzzaman, Jeremy Hurault, Kaj Dam Madsen*

Comparison of measured and calculated noise levels in far distances of wind turbines

*Ulf Kock, Arno Trautsch*

International Legislation and Regulations for Wind Turbine Shadow Flicker Impact

*Erik Koppen, Mahesh Gunuru*

Cotton Farm Wind Farm long term community noise monitoring 3 years on: testing compliance and AM control methods.

*Sarah Large, Stigwood, Mike; Stigwood, Duncan*

Long-term experimental campaign on an operating wind turbine for trailing edge serrations verification

*Irene Lauret-Ducosson, Albert ALARCON, Isabelle SCHMICH YAMANE*

Why do some people feel that they are “made ill” by wind turbine noise

*Geoff Leventhall*

Frequency Content of Measured Wind Farm Noise Levels in Comparison to Background Noise Levels

*Tom Levet*

Presenting insights from shadow flicker compliance monitoring

*Peter Longbottom*

Putting the IOA preferred AM assessment method and the penalty into practice – an outlook for future developments of wind farms in the UK

*Krispian Lowe, Sylvia Broneske*

ASSESSMENT OF THE ERROR BETWEEN MEASURED AND PREDICTED NOISE LEVELS FROM WIND FARMS

*Luc SCHILLEMANS Luc SCHILLEMANS, Marc VAN CAILLIE, Colin LE BOURDAT, Simon COURRET*

Simulated low frequency wind turbine noise from wake operation

*Helge Aagaard Madsen, Franck Bertagnolio, Andreas Fischer*

High Fidelity Airfoil Trailing Edge Noise Predictions via Lattice-Boltzmann Simulations

*Farhan Ahmed Manegar, Thomas Carolus, Sascha Erbslöh*

Perceptual confusion between an 8-Hz tone plus 125-Hz tone mix and an 8-Hz amplitude-modulated 125 Hz tone

*Torsten Marquardt*

Development of an Airfoil Inflow Noise Prediction Tool

*Alexandre Martuscelli Faria, Marcos de Mattos Pimenta*

Accurate Prediction of Noise from Aerofoils with Serrated Trailing Edges

*Yannick Mayer, Benshuai Lyu, Hasan Kamliya Jawahar, Mahdi Azarpeyvand*

A COMPREHENSIVE HAMILTONIAN RAY TRACING TECHNIQUE FOR WIND TURBINE NOISE PROPAGATION UNDER ARBITRARY WEATHER CONDITIONS

*Sterling McBride, Ricardo Burdisso*

Acoustic measurements of a wind turbine cambered airfoil with flow-misaligned serrations in a closed wind tunnel test section

*Roberto Merino-Martinez, Wouter van der Velden, Francesco Avallone, Daniele Ragni*

Measurement Techniques for determining Wind Turbine Infrasound Penetration into Homes  
*Andy Metelka, Andy, Metelka*

A single aggregated exposure response relationship for all magnitudes of annoyance toward multiple wind turbine features  
*David Michaud, Leonora Marro*

Evaluation of Wind Turbine Noise in Japan  
*Mimi NAMEKI, Hitomi KIMURA: Hiroya DEGUCHI: Nobuo MACHIDA; Hideki TACHIBANA*

Analysis of sound emission by using amplitude modulation components of wind turbine noise  
*Yasuaki Okada, Shinya Hyodo, Koichi Yoshihisa, Teruo Iwase*

Wind Turbine Noise Dose Response – Comparison of Recent Studies  
*Isaac Old, Kenneth Kaliski*

The Variation of WTN Limits Across the United States – Should there be a Bright Line  
*Christopher Ollson*

A Rigorous Method of Addressing Wind Turbine Noise  
*William (Bill) K.G. Palmer*

Addressing a management strategy of Wind Farms Noise Control in Chile  
*José David Parra Cuevas, Igor Valdebenito, Víctor Hugo Lobos*

Assessment of commercial codes for the prediction of wind turbines noise  
*José David Parra Cuevas, Enrique Suárez*

Background Noise Variability Relative to Wind Direction, Temperature, and Other Factors  
*Patricia Pellerin, Kristjan Varnik, Erik Kalapinski, Kevin Fowler*

A REVIEW OF RESEARCH INTO THE AMPLITUDE MODULATED COMPONENT OF WIND TURBINE NOISE AND DEVELOPMENT OF A CONTROL METHOD FOR IMPLEMENTATION IN THE UK  
*RICHARD PERKINS, Michael Lotinga, Bernard Berry, Colin Grimwood, Stephen Stansfeld*

Acoustic Directivity Pattern of Multi-Megawatt Wind Turbines  
*Benoît Petitjean, Drew Wetzel, Roger Drobietz, Jonathan Luedke, Kevin Kinzie*

Impact of noise from suburban wind turbines on human well-being  
*Fei Qu, Jian Kang, Aki Tsuchiya*

MEASUREMENT OF NOISE IN WINDFLOW  
*Per Rasmussen*

Real atmospheric propagation makes blade passage harmonics audible  
*Werner Richarz, Harrison Richarz*

The development and limits of the German shadow flicker guidelines  
*Peter Ritter*

A new characterization of wind turbine noise from Life Cycle Assessment  
*Andrea Rivarola, Pablo Arena, Héctor Mattio*

Aeroacoustic simulation of multiple wind turbine source interaction

*Xavier Robin, Cesar Legendre, Diego Copiello*

Variation of wind induced non-turbine related noise due to position, shelter, wind direction and season

*Lars Sommer Søndergaard, Rune Egedal, Morten Bording Hansen*

Verification and Validation of the QBlade Airfoil Trailing-Edge Noise Prediction Module

*Joseph Saab, Marcos de Mattos Pimenta, José Roberto Castilho Piqueira, David Marten, George Pechlivanoglou, Christian Navid Nayeri, Christian Oliver Paschereit*

iEar dynamic acoustic windfarm curtailment

*Jérémy SCHILD, Vincent CHAVAND*

Origin, Transfer and Reduction of Structure-Borne Noise in Wind Turbines

*Lukas Schneider*

Wind turbine sound predictions: Literature survey, model assessment and case study on the effect of blade elasticity

*Leonard Schorle, Thomas Carolus, Sascha Erbslöh*

Wind farm design including noise constraints

*Javier Serrano González, José Miguel Riquelme Dominguez, Jesús Manuel Riquelme Santos, Manuel Burgos Payán*

Modelling activities in wind turbine noise generation and propagation at DTU Wind Energy

*Wenzhong Shen, Wei Jun Zhu, Emre Barlas, Harald Debertshauser, Jens Noerkaer Soerensen, Franck Bertagnolio, Andreas Fischer, Helge Aagaard Madsen*

Wind turbines in hilly terrain – response of residents to sound disturbance related to sound and meteorological measurements

*Anna Sjöblom, Conny Larsson, Kristina Conrady*

Tonal noise mitigation on wind turbines

*Jutta Stauber, Brett Marmo, Donald Black, Mark-Paul Buckingham*

Experience of reviewing wind farm noise assessments for Scottish local authorities and the implementation of the IOA Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise

*Steve Summers, Graham Parry*

An Update on the Prediction, Assessment and Compliance of Wind Farm Noise in Australia

*Peter Teague*

A case study of how to involve impacted neighbors in measuring and characterizing windfarm noise

*Sveinulf Vagene*

A 'social review' of wind turbine noise

*Frits van den Berg, John Bolte*

Variations in measured noise emission of wind turbines due to local circumstances

*Wim van der Maarl, Eugène de Beer*

Small Horizontal Axis Wind Turbine: Aeroacoustic and Aerodynamic Optimization of Airfoil and Blade

*Kevin Volkmer, N. Kaufmann, T. Carolus*

Extended simulations of wind noise contamination of amplitude modulation ratings

*Sabine von Hunerbein, Paul Kendrick, Trevor Cox*

Influence of Harmonic Phases on Subjective Response to Periodic Infrasonic Pulses

*Bruce Walker, Joseph Celano*

Computational Aeroacoustics of Small Vertical Axis Wind Turbines by Applying a Hybrid Approach

*Johannes Weber, Matthias Tautz, Andreas Hüppe, Stefan Becker, Manfred Kaltenbacher*

Objectify wind turbine noise complaints by longterm sound measurements

*Friedrich Wilts, Thomas Neumann*

The visual effects of wind turbines in Japan

*Takashi Yano, Sonoko Kuwano, Hideki Tachibana*

An Amplitude Modulation Noise Measurement and Analysis for IEEE P2400 Standard Project

*Xiang Ye, Dr. Xue, Yu*

Subjective experiments on the perception of tonal component(s) contained in wind turbine noise

*Sakae Yokoyama, Tomohiro Kobayashi, Hideki Tachibana*

HEARING AT LOW FREQUENCIES IN THE PRESENCE OF INFRASOUND

*Branko Zajamsek, Peter Catcheside, Gorica Micic, Kristy Hansen, Colin Hansen*