MONDAY

FIELD TRIP DAY

10:00 Departure from Umeå

10:00-16:00 Field trip

16:00 Back in Umeå

18:00-20:00 Registration

TUESDAY

08:30-10:30 Registration and Exhibition

Main Hall

10:00-11:30 **OPENING SESSION WINTERWIND 2019**
Chairs: TBD

Welcome
Ulla Hedman Andrén
Director of Operations Swedish Windpower Association

11.30-13.00 Lunch

12:30-12:55 **Poster presentations**

- Clear air in cold climates: performance of continuous-wave ground-based lidar — *Wulstan Nixon, ZX Lidars (33)*
- Wind-farm-scale blockage in stable regime associated with cold climates — *Christiane Montavon, DNV GL, Netherlands (42)*
- Verification of numerical weather model predictions and wind turbine production-loss due to ice using ceilometer measurements — *Niklas Sondell, Modern Energy, Sweden (44)*
- Load monitoring and lifetime assessment for wind turbine towers — *Carsten Ebert, Wölfel Wind Systems GmbH, Germany (49)*

Room 1	Room 2	Room 3
13:00-14:30 Health, Safety and Environment (HSE) incl. ice throw and noise *Chairs: TBD*	De-/anti-icing including new technologies, ice detection & control incl. Standards *Chairs: TBD*	Forecasting cloud physics andaerodynamics *Chairs: TBD*
IEA Wind Task 19: International Recommendations for Ice Fall and Ice Throw Risk Assessments *Andreas Krenn, Energiewerkstatt e.V. (20)*	Unmanned aerial vehicles (UAVs) in cold climate and wind energy applications, Richard Hann, *Norwegian University of Science and Technology (NTNU), Norway (3)*	Forecasting of atmospheric icing – validation and applications within wind energy, *Johannes Lindvall, Kjeller Vindteknikk (25)*

Importance sampling for ice throw in QBlade,
Matthew Lennie, Technishe Universitat Berlin (18)

Using 1Hz data to monitor turbine integrity,
Carla Ribeiro, DNV GL (39

Numerical Weather Prediction of Supercooled Low Stratus Clouds over Heterogeneous Surfaces using the MUSC One-Dimensional Model: First Results
Erik Janzon, Uppsala Universitet (9)

Uncertainties and choices in ice risk assessments - How to get the results you want
Markus Drapalik, Institute of Safety and Risk Research, University of Natural Resources and Life Sciences, Vienna, AT (15)

Proof of concept of a tower based blade icing detection system for low to moderate icing sites
Pieter Jan Jordaens, OWI-Lab (17)

Improving short-term forecasting of turbine icing using machine learning,
Beatrice Brailey, DNV GL, UK (6)

Probabilistic forecasting of wind power production losses due to icing,
Esbjörn Olsson, SMHI (31)

14.30-15.30 **Break**

15:00-15:25 **Poster presentations**

Nabralift Tower: Challenges of Icing Conditions in Open Tower Structures
Emilio Rodriguez Saiz, Nabrawind Technologies, Spain (48)

On the formation of an icing atlas in Austria
Heimo Truhetz, Wegener Center for Climate and Global Change (WEGC), University of Graz, Austria (38)

A new approach for the assessment of ice induced power losses
Patrice Roberge, Université Laval (7)

The effect of atmospheric aerosol particles on cloud icing rate
Antti Ruuskanen, Finnish Meteorological Institute, FI (32)

15:30-17:00

Health, Safety and Environment (HSE) incl. ice throw and noise
Chairs: TBD

A cross-comparison of the IceThrower database with 10 years of SCADA and meteorological forecast data - What can we learn?,
Rolv Bredesen, Kjeller Vindteknikk, NO (35)

R.Ice: Risk Analysis of Wind Turbine Icing
Alexander Stökl, Energiewerkstatt e.V. (21)

State of the art risk reduction of wind power facilities
Daniel Swart, Lloyd's Register Consulting (28)

Pre-construction site assessment, measurements, models and standards
Chairs: TBD

WICE 2.0
– The new generation of ice loss models
Stefan Söderberg, DNV GL, SE (23)

Validation of pulsed Lidar as ice detector
Timo Karlsson, VTT, FI (11)

Effective validation for time series icing modelling using operational SCADA data,
Christian Jonsson, ABO Wind, DE (8)

Commercial
Chairs: Matthew Wadham Gagnon & TBD

Blade based ice detection – knowledge base for efficient operation in cold climate conditions,
Timo Klaas, Wölfel Wind Systems GmbH (47)

Presenting ice detector research results from wind turbine field tests and icing wind tunnel tests
Tatu Muukkonen, Labkotec Oy, FI (43)

fos4X experience improving the performance of wind farms installed in cold climate
Luis Vera-Tudela, fos4X GmbH (19)

Increased turbine efficiency during icing conditions by means of pre-emptive blade heating control
Michael Moser, eologix sensor technology gmbh, AT (45)

Field Validation of a Hot-Air Blade Deicing Retrofit
Daniela Roeper, BorealisWind, Canada (12)

Is wind industry ready for disruptive solutions?
Martins Ummers, Aerones, Latvia (2)

To heat or not to heat?
Xavier VANWIJCK, XANT, Belgium (46)

Case study; controlled environment in up-tower blade repairs
Ville Karkkolainen, Bladefence Oy (14)

Clear air in cold climates: performance of continuous-wave ground-based lidar
Wulstan Nixon, ZX Lidars (33)

Nabralift Tower: Challenges of Icing Conditions in Open Tower Structures
Emilio Rodriguez Saiz, Nabrawind Technologies, Spain (48)

17:00- **Mingle and poster presentations in exhibition hall.**
Open innovation awards, based on presentations in Session 1, will be presented at 17:30.

19:00- **Dinner and entertainment**

6 WEDNESDAY

	Room 1	Room 2	Room 3
09:00-10:30	**Wind turbine manufacturers (commercial)** *Moderators: TBD*		
	Technology retrofit and service approach for performance optimisation in cold climates, *Ulrik Rydstroem, Siemens Gamesa Renewable Energy (41)*		
	Nordex advanced Anti-Icing System for N149/4.0-4.5, *Konrad Sachse, Nordex Energy GmbH, DE (5)*		
	ENERCONs strategies for minimizing and assessing icing losses *Julian Schödler, ENERCON, DE (27)*		
10.30-11:30	**Break, Poster presentations**		
	Blade based ice detection – knowledge base for efficient operation in cold climate conditions *Timo Klaas, Wölfel Wind Systems GmbH (47)*	Presenting ice detector research results from wind turbine field tests and icing wind tunnel tests *Tatu Muukkonen, Labkotec Oy, FI (43)*	fos4X experience improving the performance of wind farms installed in cold climate *Luis Vera-Tudela, fos4X GmbH (19)*
			Field Validation of a Hot-Air Blade Deicing Retrofit *Daniela Roeper, Borealis Wind, Canada (12)*

11.30-13:00

Benchmarking

Chairs:TBD

How efficient is your blade heating?
André Bégin-Drolet, Canada (4)

Performance benchmark analysis of four Ice prevention systems,,
Timo Karlsson, VTT, FI (10)

Benchmark of four Blade-based Ice Detection Systems
Paul Froidevaux, Meteotest AG, CH (36)

Wind turbine rotor icing detectors performance evaluation
Charles Godreau, Nergica, Canada (22)

Design and construction

Chairs: TBD

Construction of wind farms in cold climates areas – Owner's Engineer experiences
Joachim Binotsch, Ramboll, Germany (30)

Design features of wind diesel hybrid power plants in Russian Arctic climate, Viktor Elistratov, Science-education center «Renewable energy sources»
Peter the Great St. Petersburg Polytechnic University, Russia (16)

Icing alleviation for wind turbines with no ice-protected blades
Masafumi Yamazaki, Kanagawa Institute of Technology (34)

Laboratory and full-scale testing, small wind turbines

Chairs: TBD

Validation of Droplet Size in the VTT Icing Wind Tunnel Test Section
Tuomas Jokela, VTT Technical Research Centre of Finland Ltd (24)

Siemens Gamesa test case: extreme cold start-up validation of a wind turbine gearbox by the use of a large climatic test chamber
Daniele Brandolisio, OWILab, BE (51)

Industrial research on the design of wind turbines for icing conditions
Inken Knop, Technische Universität Braunschweig, DE (40)

EFAFLU test case: cold start-up validation of transformer pumps by the use of a large climatic test chamber
Daniele Brandolisio, OWI-Lab, BE (50)

13:00-14:00 **Lunch**

13:30-13:55 **Poster presentations**

Case study; controlled environment in uptower blade repairs
Ville Karkkolainen, Bladefence Oy (14)

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Increased turbine efficiency during icing conditions by means of preemptive blade heating control
Michael Moser, eologix sensor technolocy gmbh, AT (45)

Is wind industry ready for disruptive solutions?
Martins Ummers, Aerones, Latvia (2)

14:00-15:00

Grand finale Next?

Moderators: TBD

IEA Wind Task 19 – key results from 2016-2018 and future plans 2019-2021
Ville Lehtomäki, KjellerVindteknikk, FI (26)

14:40-14:50 **Summary of Conference**

14:50-15:00 **Final words**
Ulla Hedman Andrén