

CORTIR II International Conference - WTG blade risk mitigation & monitoring

Date: 22nd of September 2022

Location: HUONE Kastrup, Amager Strandvej 390, 2770 Kastrup. Room: Beach

Introductory note

Bladena and invited speakers will approach the main topics of this international conference from an open dialogue environment. The conference will end with a roadmap planning and next steps, as well as with a panel discussion and final networking session.

Scaling and structural understanding

The day begins with an introduction to the scaling of blades and the increased risk it brings to the wind industry. Additionally, the challenges that modern large blades bring to the market due to minimal structural considerations are presented.

Monitoring techniques as a risk mitigation action

Afterwards, possible risk mitigation actions will be introduced. Both MISTRAS Group and Polytech will present why continuous monitoring may play an essential role under this framework. Acoustic emission and loads & vibration monitoring are not only considered to prevent catastrophic failures, but they are also perceived as a source of collecting information for further understanding of damage mechanisms and possible application of a damage tolerance approach.

Risk-based O&M strategies

The next step is to focus on how this knowledge can be applied in a preventive and proactive risk-based maintenance strategy. Both Bladena, representing the industry, and DTU Wind, DTU Construct and Aalborg University, representing the academia, will give their opinion on this matter. The "Damage Tolerance Approach" will be discussed as a methodology to assist risk-based maintenance strategies for WTOs, ISPs, and OEMs.

Final discussion, next steps, and networking

The day aims to finish with the presentation of a roadmap for risk mitigation and with a final panel discussion with 3 WTOs: Shell, Northland Power, and Equinor.

Agenda - International Conference

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- 09:00 – 09:15 **BREAKFAST**
- 09:15 – 09:45 Welcome by Find M. Jensen & Mathias K. Reding
- 09:45 – 10:30 Scaling of WTG blades and consequent impact of torsional loads and structural considerations by Ioannis Bertios, Bladena
- 10:30 – 11:05 **COFFEE BREAK**
- 11:05 – 11:45 Invited speaker: Valery Godinez-Azcuaga, MISTRAS Group
Monitoring of critical structural failure modes for large blades
- 11:45 – 12:25 Invited speaker: Robert Ernst, Polytech
Monitoring of loads & vibrations on blades
- 12:25 – 13:25 **LUNCH**
- 13:25 – 14:10 Risk mitigation & financial analysis through business cases and risk-based maintenance strategies by Javier O. Arconada, Bladena
- 14:10 – 14:50 Invited speakers: CEO Find M. Jensen, Bladena, Prof. Christian Berggreen, DTU Construct, Prof. John Dalsgaard Sørensen, Aalborg University & Prof. Bent F. Sørensen, DTU Wind
Risk-Based Maintenance strategies using the “Damage Tolerance Approach”
- 14:50 – 15:15 **COFFEE BREAK**
- 15:15 – 16:00 Next steps roadmap for risk mitigation, by Find M. Jensen, Bladena
- 16:00 – 17:00 Panel discussion: Risk based maintenance and impact of monitoring chaired by Mathias Reding, Bladena. Wouter Haans, Shell, Peter Hansen, Northland Power & Yangjiao Liao, Equinor are participating
- 17:00 - 18:00 Lounge & Networking session