



Total Control

*Advanced integrated supervisory and wind turbine control
for optimal operation of large Wind Power Plants*

Dissemination and communication plan and
annual report on the dissemination and
communication activities

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2.2 Upcoming Communication Activities.....	Fejl! Bogmærke er ikke defineret.

EXECUTIVE SUMMARY

This report details the communication and dissemination activities from 2021 til the end of the project. In 2021, conference participation was still heavily affected by the Covid restrictions, while this was relaxed somewhat in the course of 2022. In the period we have produced in total 8 journal articles, 1 abstract in conference proceedings, 14 conference activities, 2 project videos and updated and maintained the external and internal websites.

DISSEMINATION AND COMMUNICATION 2020

1.1 DISSEMINATION ACTIVITIES

2021 and 2022 was an extraordinary period due to the persistence of the Covid pandemic.

Generally, all publications are mentioned on our website's publications archive - the contributions from the reporting period are:

- **Lio, W. H. & Evans, M.**
Computationally efficient model predictive control of complex wind turbine models. Wind Energy vol. 25, 2022
- **Sood, L. & Meyers, J.**
Tuning of an engineering wind farm model using measurements from Large Eddy Simulations. Journal of Physics: Conference Series vol. 2265, 2022
- **Sood, L., Simon, E., Vitsas, A., Blockmans, B., Larsen G. C. & Meyers, J.**
Comparison of Large Eddy Simulations against measurements from the Lillgrund offshore wind farm. Wind Energy Science, preprint
- **Bossanyi, E., Ruisi, R., Larsen, G. C. & Pedersen. M. M.**
Axial induction control design for a field test at Lillgrund wind farm. Journal of Physics: Conference Series, vol. 2265, 2022
- **Bossanyi, E.,**
Surrogate model for fast simulation of turbine loads in wind farms. Journal of Physics: Conference Series, vol. 2265, 2022
- **Merz, K., Chabaud, V., Garcia-Rosa, P. B. & Kölle, K.**
A hierachical supervisory wind power plant controller. Journal of Physics: Conference Series, Volume 2018, 2021
- **Natarajan, A.**
Damage equivalent load synthesis and stochastic extrapolation for fatigue life validation. Wind Energy Science, vol. 7, 2022

- **Wai, H. L., Larsen, G.C. & Thorsen G. R.**
Dynamic wake tracking using a cost-effective LiDAR and kalman filtering: Design, simulation and full-scale validation . Renewable Energy, Volume 14, 2021

CONFERENCE ABSTRACTS

- **Hille, N.**
Implications of wind farm control on certification regarding validation and testing. WESC 2021 Wind Energy Science Conference

ORAL PRESENTATIONS/POSTERS AT CONFERENCES/WORKSHOPS

- **Dimitrov, N., Urban. A. & Christos G.**
Wind farm power and load optimization with ML-based surrogate models. Wind Energy Science Conference 2019, 17. – 20. June 2019
- **Pedersen, M. M. & Larsen G. C.**
The influence of wind farm control on optimal wind farm layout. Wind Energy Science Conference 2019, 17. – 20. June 2019
- **Meyers, J., Vitsas, A., Sood, I. & Munters, W.**
Set-up of a reference wind-farm simulation database for testing of turbine and farm control strategies and load scenarios. Wind Energy Science Conference 2019, 17. – 20. June 2019
- **Larsen, G. C., Giebel, G., Natarajan, A., Meyers, J., Bossanyi, E. & Merz, K.**
TotalControl - Advanced integrated control of large-scale wind power plants and wind turbines. WindEnergy ElectricCity Conference 2021, 23-25 November 2021
- **Hille, N., Schleeßelmann, R. & Bayo R. T.**
Implications of wind farm control on certification regarding validation and testing. WESC 2021 Wind Energy Science Conference
- **Bossanyi, E.**
Simple induction control scheme for wind farms. WESC 2021 Wind Energy Science Conference
- **Merz, K., Chabaud, V., Garcia-Rosa, P. B. & Kölle, K.**
A hierachical supervisory wind power plant controller. EERA Deepwind 2021
- **Hille, N., Schleeßelmann, R. & Bayo R. T.**
Does Wind Farm Control require updated load case definitions for design and certification? WindEurope Electric City 2021

- **Sood, I., Munters, W., Vitsas, A. & Meyers, J.**
Design and comparison of turbine controllers for dynamic induction control in a hierarchical wind farm control approach. WESC 2019 Wind Energy Science Conference
- **Sood, I. & Meyers, J.**
Comparison of Large Eddy Simulations against measurements from the Lillgrund offshore windfarm. WESC 2021 Wind Energy Science Conference
- **Sood, I., Munters, W. & Meyers, J.**
On the selection of tracking variables at the interface between wind-farm and turbine controllers in a hierarchic wind-farm control approach. EAWE PhD Seminar, 2018
- **Sood, I. & Meyers, J.**
Extension of an Aeroelastic Actuator Sector Model for wind turbine parametrization in a coupled Large Eddy Simulation framework. EAWE PhD Seminar, 2019
- **Sood, I. & Meyers, J.**
Extension and validation of a fast boundary layer model for yaw misalignment in wind farms. EAWE PhD Seminar, 2020
- **Sood, I., d'Espierres, C. & Meyers, J.**
An optimal wind-farm control framework for power maximization and load mitigation through wake-steering. EAWE PhD Seminar, 2021

OTHER DISSEMINATION ACTIVITES

- **Thrid TotalControl Project Video**
TotalControl - status 26 November 2021 - YouTube
- **Fourth TotalControl Project Video**
TotalControl vid4 ver2 edit 1 - YouTube
- **Munters, W., Sood. I. & Meyers, J.**
Precursor dataset PDkhi
- **Munters, W., Sood. I. & Meyers, J.**
Precursor dataset PDK
- **Munters, W., Sood. I. & Meyers, J.**
[Precursor dataset CNk4](#)
- **Munters, W., Sood. I. & Meyers, J.**
[Precursor dataset CNk2](#)

- **Sood, I. & Meyers, J.**
[Reference Windfarm database PDk o](#)
- **Sood, I. & Meyers, J.**
[Reference Windfarm database PDk go](#)
- **Sood, I. & Meyers, J.**
[Reference Windfarm database PDkhi o](#)
- **Sood, I. & Meyers, J.**
[Reference Windfarm database PDk 3o](#)
- **Sood, I. & Meyers, J.**
[Reference Windfarm database CNk2 3o](#)
- **Sood, I. & Meyers, J.**
[Reference Windfarm database CNk2 6o](#)
- **Sood, I. & Meyers, J.**
[Reference Windfarm database CNk4 3o](#)
- **Sood, I. & Meyers, J.**
[Reference Windfarm database CNk4 9o](#)
- **Sood, I. & Meyers, J.**
[Reference Windfarm database CNk8 o](#)
- **Sood, I. & Meyers, J.**
[Reference Windfarm database CNk8 go](#)

1.2 COMMUNICATION ACTIVITIES

The main communication activity aimed at the public in the period has been conference participation. The project partners have tried to participate and present at as many conferences as possible while still abiding by different national Covid-19 rules as well as different organizational guidelines on Covid-19. The project has also produced two short videos promoting the project results.