

International Workshop on Dimensional Metrology for Large Drivetrain Components

June 28, 2023

Physikalisch-Technische Bundesanstalt Germany
and online

Registration: www.ptb.de/met4wind/registration

09:00 – 09:15	Welcome and introduction to the Met4Wind project	PTB
09:15 – 10:30	Optical and multi-sensor measurement systems for mechanical components of WES	
09:15 – 09:20	Introduction	PTB
09:20 – 09:40	Investigation of optical sensors for gear measurements	PTB/Hexagon
09:40 – 10:00	Multiprobe roundness measurement for large rotors	Aalto
10:00 – 10:20	Good practice guide on the inspection of WES turbine blades for wear using image processing sensors	DFM
10:20 – 10:30	Discussion	PTB, all
10:30 – 11:00	Coffee Break with group photo	
11:00 – 12:15	Improved measurement and evaluation methods for surfaces of WES drivetrain components	
11:00 – 11:05	Introduction	NCL
11:05 – 11:30	Electric runout in eddy current probe measurements: root cause analysis and mitigation	Aalto
11:20 – 11:40	Uncertainty evaluation for eddy current probe measurements	VTT
11:40 – 12:05	Holistic gear evaluation – feature separation and harmonic content analysis	PTB/NCL
12:05 – 12:15	Discussion	NCL, all
12:15 – 13:15	Lunch (PTB canteen)	
13:15 – 14:30	Digital twin for metrology enhanced reliability validation	
13:15 – 13:20	Introduction	AU
13:20 – 13:30	Overview of gear micro modification results on 10 MW system using Romax and cumulated damage based on high fidelity simulation models	AU
13:30 – 13:40	Latest results on investigating dynamic effects and on gears and bearings with Adams high fidelity models	AU
13:40 – 13:55	Leading Edge Erosion Detector Based on degraded Lift and Drag Coefficients using AI, Laboratory Demonstrator status	AU
13:55 – 14:05	Incorporating Bedframe Flexibility and its influence on gearbox	AU
14:05 – 14:20	Met4Wind Impact and outlook from WES manufacturer Vestas	Vestas
14:20 – 14:30	Discussion	AU, all
14:30 – 15:00	Coffee Break	
15:00 – 16:15	Digital in-line metrology for rotor-bearing system manufacturing and improved rotational accuracy	
15:00 – 15:05	Introduction	Aalto
15:05 – 15:25	Compensative large rotor-bearing system manufacturing for operating conditions	Aalto
15:25 – 15:45	In-situ calibration of rotary axes using a ball plate	PTB/NCL
15:45 – 16:05	Model-based definition and strategies for measuring WES drivetrain parts using CMMs	VTT/CMI
16:05 – 16:15	Discussion	Aalto, all
16:15 – 16:30	Closing remarks and end of the workshop	PTB
16:30 – 16:45	Walk to the Bessel-Building	
16:45 – 17:45	PTB Lab Tours in small groups (everybody will visit all 3 stations)	
17:45 – 18:00	Farewell and walk to the bus station	