

Lecture

Matthias Arnold

Challenges of aerodynamic simulations in the development of wind turbines

Aerodynamic simulation and more specific CFD can be used to augment the development of wind turbines. However, in order to efficiently apply this kind of method, both a clear requirements engineering and a highly automated process are required. Within the presentation the benefits of aerodynamic simulations will be discussed and it will be shown how to harness those, but also where the current limits of state-of-the-art CFD simulations are. Not everything is possible with CFD and not everything should be done with high-fidelity simulations but used wisely used and with a suitable strategy it may drive industrial development forward.

The speaker

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Dr. Matthias Arnold studied aeronautics engineering at the University Stuttgart 2006 to 2011 with a focus on aerodynamics and wind energy systems. Afterwards he worked in the research field of hydro-elastic simulations of tidal current turbines at the Stuttgart Chair of Wind Energy (SWE), which he concluded with the degree of Dr.-Ing. Since 2016 he is working for the wind turbine manufacturer Enercon in the R&D department of System-Aerodynamics with a focus on aerodynamic and aeroelastic simulation.

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