

# **Overview of Recent Research Activities at the Wind Energy Institute of the Technical University of Munich (TUM)**

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## **Abstract**

Wind energy has become one of the principal sources of renewable energy in the world, and it is expected to play an ever-growing role in the transition away from fossil fuels. The success of wind energy is primarily due to the great progress made in the last decades in understanding the complex physical phenomena that underlie the process of energy conversion from wind, and translating this knowledge into sound technical solutions. Notwithstanding the recent advances, there are still many scientific and technological challenges that need to be overcome, in order to increase the penetration of wind, reduce its cost and mitigate its impacts. To contribute to the achievement of these goals, the Wind Energy Institute at TUM works on basic scientific and application-oriented problems, often in close collaboration with industry. Areas of specific expertise of the Institute embrace all main wind-energy-relevant scientific disciplines, including aerodynamics, structures, dynamics, materials, controls, with a strong focus on multi-disciplinarity and a system-engineering point of view. Some of the most exciting on-going projects at the Institute will be briefly reviewed in this presentation.

**Keywords:** *Wind Energy, TUM*

## **Biography**

Carlo L. Bottasso received a Ph.D. in Aerospace Engineering from the Politecnico di Milano in Italy. Dr. Bottasso holds the Chair of Wind Energy at the Technical University of Munich, Germany, where he directs the Wind Energy Institute. His research interests are in wind energy and rotorcraft technology, with particular reference to modeling and simulation, aeroservoelasticity and control, with co-authored 400 publications. He is serving as President of the European Academy of Wind Energy.