

1. Record Nr.	UNINA9910367755203321
Autore	Shen Wen Zhong
Titolo	Wind Turbine Aerodynamics / Wen Zhong Shen
Pubbl/distr/stampa	MDPI - Multidisciplinary Digital Publishing Institute, 2019 Basel, Switzerland : , : MDPI, , 2019
ISBN	9783039215256 3039215256
Descrizione fisica	1 electronic resource (410 p.)
Soggetti	History of engineering and technology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	<p>Wind turbine aerodynamics is one of the central subjects of wind turbine technology. To reduce the levelized cost of energy (LCOE), the size of a single wind turbine has been increased to 12 MW at present, with further increases expected in the near future. Big wind turbines and their associated wind farms have many advantages but also challenges. The typical effects are mainly related to the increase in Reynolds number and blade flexibility. This Special Issue is a collection of 21 important research works addressing the aerodynamic challenges appearing in such developments. The 21 research papers cover a wide range of problems related to wind turbine aerodynamics, which includes atmospheric turbulent flow modeling, wind turbine flow modeling, wind turbine design, wind turbine control, wind farm flow modeling in complex terrain, wind turbine noise modeling, vertical axis wind turbine, and offshore wind energy. Readers from all over the globe are expected to greatly benefit from this Special Issue collection regarding their own work and the goal of enabling the technological development of new environmentally friendly and cost-effective wind energy systems in order to reach the target of 100% energy use from renewable sources, worldwide, by 2050</p>