

## Progress in turbulence and wind energy IV : proceedings of the iTi Conference in Turbulence 2010

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### Abstrak

This fourth issue on "progress in turbulence" is based on the fourth ITI conference (ITI interdisciplinary turbulence initiative), which took place in Bertinoro, North Italy. Leading researchers from the engineering and physical sciences presented latest results in turbulence research. Basic as well as applied research is driven by the rather notorious difficult and essentially unsolved problem of turbulence. In this collection of contributions clear progress can be seen in different aspects, ranging from new quality of numerical simulations to new concepts of experimental investigations and new theoretical developments. The importance of turbulence is shown for a wide range of applications including: combustion, energy, flow control, urban flows, are few examples found in this volume. A motivation was to bring fundamentals of turbulence in connection with renewable energy. This lead us to add a special topic relevant to the impact of turbulence on the wind energy conversion. The structure of the present book is as such that contributions have been bundled according to covering topics i.e. I Basic Turbulence Aspects, II Particle Laden Flows, III Modeling and Simulations, IV, Experimental Methods, V Special Flows, VI Atmospheric Boundary Layer, VII Boundary Layer, VIII Wind Energy and IX Convection. This book is dedicated to the memory of Prof. Tim Nickels. Shortly after giving an invited lecture at the 4th ITI conference, the turbulence community lost a world-class scientist, a friend and devoted family man.