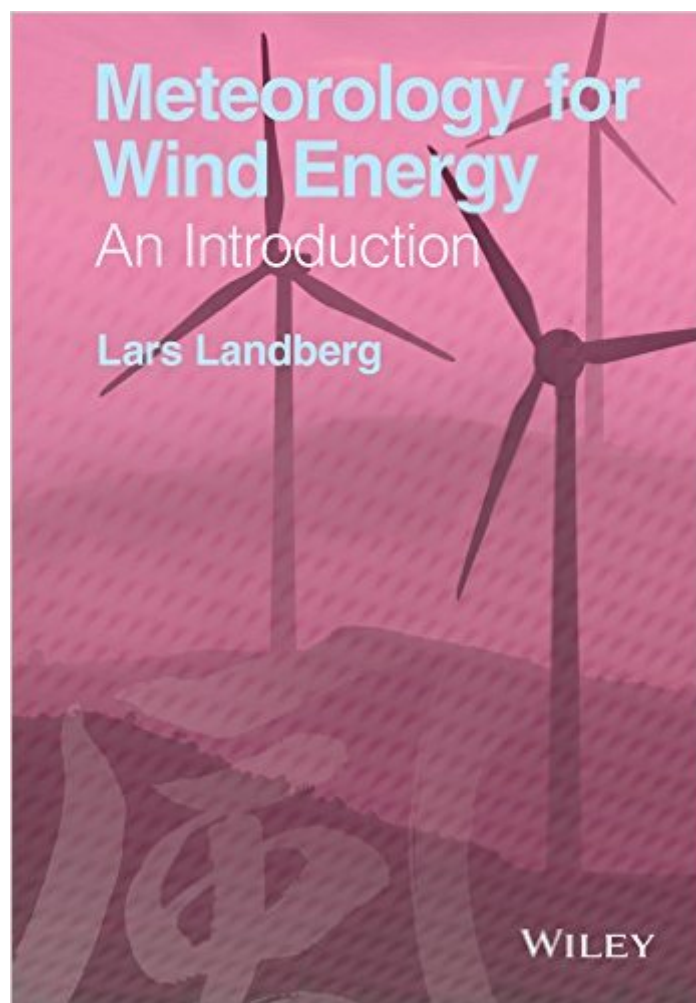# Meteorology For Wind Energy: An Introduction

Synopsis

Most practitioners within wind energy have only a very basic knowledge about meteorology, leading to a lack of understanding of one of the most fundamental subjects in wind energy. This book will therefore provide an easy-to-understand introduction to the subject of meteorology, as seen from the viewpoint of wind energy. Catering for a range of academic backgrounds, the book is mathematically rigorous with accessible explanations for non-mathematically oriented readers. Through exercises in the text and at the end of each chapter the reader will be challenged to think, seek further information and practice the knowledge obtained from reading the book. This practical yet comprehensive reference will enable readers to fully understand the theoretical background of meteorology with wind energy in mind and will include topics such as: measurements; wind profiles; wakes; modelling; turbulence and the fundamentals of atmospheric flow on all scales including the local scale. Key features: â ¢Â Â Â Â Â Â Â Â Provides practitioners of wind energy with a solid theoretical grounding in relevant aspects of meteorology enabling them to exercise useful judgment in matters related to resource estimation, wind farm development, planning, turbine design and electrical grids. â ¢Â Â Â Â Â Â Â Â Supports a growing area of professional development with the increasing importance of wind energy estimation in all aspects of electrical energy production from wind. â ¢Â Â Â Â Â Â Â Â Accompanying website includes data sets for exercises in data analysis, photographs, animations & worked examples, helping to further bridge the gap between theory and practice. Meteorology for Wind Energy: An Introduction is aimed at engineers, developers and project managers in the wind power and electrical utility sectors without the essential theoretical background required to understand the topic. It will also have significant appeal to senior undergraduate and postgraduate students of Wind Energy, Environmental Studies or Renewables Studies.

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