DESCRIPTION

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:

• 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.
• Supports a growing area of professional development with the increasing importance of wind energy estimation in all aspects of electrical energy production from wind.

• 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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### ABOUT THE AUTHOR

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Lars is one of the most renowned experts of wind resources and wind energy in the world, having worked in this area for over 24 years. He was Head of Wind Energy Department at Risoe National Laboratory (now Danish Technical University), Roskilde, Denmark. He has a PhD in Physics/Geophysics and has developed and was the primary force behind the industry standard wind flow model known as WASP (Wind Atlas Analysis and Application Program) in its formative and subsequent years of software development. A passionate proponent of his subject, he has taught a course on ‘Meteorology with Wind Energy in Mind’ to mainly professional practitioners since 2007.

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