

Wind Farm Noise: Measurement, Assessment and Control (2017)

Colin H. Hansen, Con J. Doolan and Kristy L. Hansen
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This textbook contains comprehensive explanations of all aspects of wind farm noise, including:

- A history of turbine design and regulations,
- Fundamentals of acoustics and frequency analysis,
- Explanations of the sound generation components of wind turbines,
- Methods to estimate sound power levels from turbines,
- A discussion of sound and vibration propagation and descriptions of various propagation models and their respective calculation methodologies,
- Methods of measuring environmental noise and vibration from wind farms,
- The effects of wind farm noise and vibration on people,
- Methods to control wind farm noise, and
- Recommendations for further research.

Each chapter of the book is well researched and thorough. Further, the book does an excellent job of contextualizing the current state of practice. Explanations are easy to follow for less mathematically inclined readers while also providing sufficient formulas and step-by-step derivations to allow readers who would like to dig deeper

and have a more complete understanding of the topic to do so.

Having spent many years conducting environmental noise studies on wind farms, I was surprised at the amount of knowledge that I gained from reading this book—knowledge that I will carry into my future work. I especially appreciated the authors' genuine approach to producing an unbiased volume on such a potentially contentious topic. Likewise, the authors were transparent where gaps exist in the current data, providing useful recommendations for further research that are sure to be taken up by PhD students and industry for years to come.

Having read the book essentially cover to cover, I highly recommend that any professional working in the field of wind farm noise spend some time getting to know this book. The book is well organized and would also serve as an excellent reference for answers to specific technical questions.

Of note, at the time of this review (2024), substantial research in this field has been conducted since this text was published in 2017, and practitioners would benefit from an update that includes current research in areas such as off-shore wind, amplitude modulation, icing, microturbines, very large turbine sizes, dose-response, and infrasound effects. That said, the concepts detailed in this text have not changed, and the book continues to be highly relevant for the study of today's wind farms.

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