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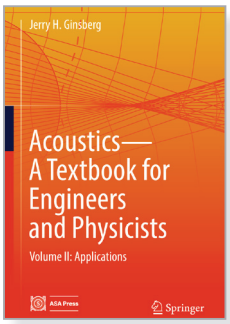
Acoustics: A Textbook for Engineers and Physicists

Volume I: Fundamentals, Volume II: Applications



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Topics: Engineering Acoustics

Volume I: Fundamentals

- Provides broad and comprehensive treatment of the basic principles and phenomena encountered in physical and engineering acoustics
- Approaches derivations and examples in a logical, lucid, and rigorous manner, with special attention given to the reasons behind the formulation, and detailed explanation of operations that might be unfamiliar to the student
- Contains 64 innovative examples, some based on real-world systems, which highlight the connection between physical phenomena and derived principles
- Embeds coverage of numerical methods into the examples, including discussion of algorithms and associated macro-code, with Matlab code available online

This graduate and advanced undergraduate textbook systematically addresses all core topics in physical and engineering acoustics. Presentation begins from a foundation that does not assume prior study of acoustics and advanced mathematics. Derivations are rigorous, thoroughly explained, and often innovative. Important concepts are discussed for their physical implications and their implementation. Step-by-step explanations accompany example solutions. They address both the significance of the example and the strategy for approaching it. Wherever techniques arise that might be unfamiliar to the reader, they are explained in full. Volume I contains 186 homework exercises, accompanied by a detailed solutions manual for instructors.

Volume II: Applications

- Provides broad and comprehensive treatment of the application of basic principles and techniques encountered in physical and engineering acoustics
- Contains 56 innovative examples, many of which are mini case studies based on real-world research, highlighting the connection between physical phenomena and derived principles
- Features logical and rigorous presentation of derivations and examples, without sacrificing lucidity and explanation of operations that might be unfamiliar to the student
- Embeds coverage of numerical methods into the examples, including discussion of algorithms and associated macro-code, with Matlab code available online

This volume applies the principles and techniques developed in Volume I to a broad range of topics. Many of the chapters are independent, and all build from introductory to more sophisticated material. Derivations are rigorous and logical, with thorough explanations of operations that are not obvious. Important concepts are discussed for their physical implications and implementation. The example solutions address both the significance of the example and the reasoning underlying the formulation. Tasks that require computational work are fully explained. This volume contains 168 homework exercises, accompanied by a detailed solutions manual for instructors.

About the Author

Jerry H. Ginsberg's graduated from the Bronx High School of Science (1961), received a B.S.C.E. from the Cooper Union (1965), and an E.Sc.D. in engineering mechanics from Columbia University (1970). He was assistant and then associate professor at Purdue University from 1969-1980. He joined Georgia Tech in 1980 as a Professor in the School of Mechanical Engineering, and was awarded the George W. Woodruff Chair in 1989. He retired in June 2008. His publications include 5 textbooks and more 120 refereed papers. Dr. Ginsberg is a Fellow of ASA and the recipient of many awards and honors.