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Titolo	Acoustics-A Textbook for Engineers and Physicists [[electronic resource] ] : Volume I: Fundamentals / / by Jerry H. Ginsberg
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ISBN	3-319-56844-2
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (XXXVII, 576 p. 205 illus., 110 illus. in color.)
Disciplina	620.2
Soggetti	Acoustical engineering Acoustics Oceanography Fluids Noise control Buildings Engineering Acoustics Fluid- and Aerodynamics Noise Control Building Types and Functions
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	List of Examples -- Preface -- Acknowledgements -- 1 Descriptions of Sound -- 2 Plane Waves: Time Domain Solutions -- 3 Plane Waves: Frequency Domain Solutions -- 4 Principles and Equations for Multidimensional Phenomena -- 5 Interface Phenomena for Planar Waves -- 6 Spherical Waves and Point Sources -- Index.
Sommario/riassunto	This graduate and advanced undergraduate textbook systematically addresses all core topics in physical and engineering acoustics. Written by a well-known textbook author with 39 years of experience performing research, teaching, and mentoring in the field, it is specially designed to provide maximum support for learning. 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. Many of the examples are mini case studies that address systems students will find to be interesting and motivating for continued study. 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. This text, along with its companion, Volume II: Applications, provides a knowledge base that will enable the reader to begin undertaking research and to work in core areas of acoustics. 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 macrocode, with Matlab code available online.

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