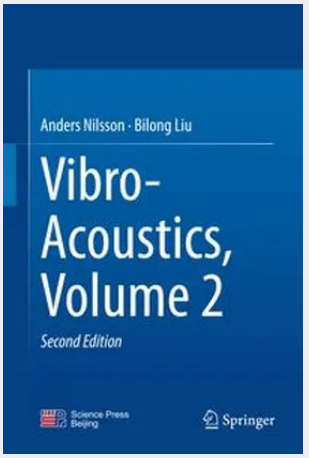
Nilsson / Liu

Vibro-Acoustics, Volume 2



This three-volume book gives a thorough and comprehensive presentation of vibration and acoustic theories. Different from traditional textbooks which typically deal with some aspects of either acoustic or vibration problems, it is unique of this book to combine those two correlated subjects together. Moreover, it provides fundamental analysis and mathematical descriptions for several crucial phenomena of Vibro-Acoustics which are quite useful in noise reduction, including how structures are excited, energy flows from an excitation point to a sound radiating surface, and finally how a structure radiates noise to a surrounding fluid. Many measurement results included in the text make the reading interesting and informative. Problems/questions are listed at the end of each chapter and the solutions are provided. This will help the readers to understand the topics of Vibro-Acoustics more deeply. The book should be of interest to anyone interested in sound and vibration, vehicle acoustics, ship acoustics and interior aircraft noise. This is the second volume, and covers the following topics: Hamilton´s principle and some other variational methods, Structural coupling between simple systems, Waves in fluids, Fluid structure interaction and radiation of sound, Sound transmission loss of panels, Waveguides, Random excitation of structures, Transmission of sound in built up structures.

Introduces basic concepts and mathematical methods of Vibro-Acoustics Covers the basis of vibration, structure-borne sound and acoustics Guides the students to the subjects of Vibro-Acoustics step by step, from simple one-degree-of-freedom systems to more complex ones Illustrates the fundamental theories with verifications by laboratory and field measurements Provides problems for each chapter with solutions Serves as both a reference work for researchers and a study text for graduate students Includes supplementary material: sn.pub/extras

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