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Autore	Vorlander Michael
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Descrizione fisica	1 online resource (XVIII, 365 p. 251 illus., 20 illus. in color.)
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Disciplina	006.5
Soggetti	Acoustics Acoustical engineering User interfaces (Computer systems) Human-computer interaction Multimedia systems Engineering Acoustics User Interfaces and Human Computer Interaction Multimedia Information Systems
Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Chapter1: Fundamentals of acoustics -- Chapter2: Sound sources -- Chapter3: Sound propagation -- Chapter4: Sound fields in cavities and in rooms -- Chapter5: Structure-borne sound -- Chapter6: Psychoacoustics -- Chapter7: Signal processing for auralization -- Chapter8: Characterization of sources -- Chapter9: Convolution and binaural sound synthesis -- Chapter10: Simulation methods -- Chapter11: Simulation of sound in rooms -- Chapter12: Simulation and auralization of outdoor sound propagation -- Chapter13: Simulation and auralization of airborne sound insulation -- Chapter14: Simulation and auralization of structure-borne sound -- Chapter15: Transfer path analysis and synthesis -- Chapter16: Filter construction for real-time processing -- Chapter17: 3D sound reproduction -- Chapter18: Acoustic Virtual Reality systems.
Sommario/riassunto	Auralization is the technique of creation and reproduction of sound on the basis of computer data. With this tool it is possible to predict the character of sound signals which are generated at the source and

modified by reinforcement, propagation and transmission in systems such as rooms, buildings, vehicles or other technical devices. This book is organized as a comprehensive collection of the basics of sound and vibration, acoustic modelling, simulation, signal processing and audio reproduction. With some mathematical prerequisites, the readers will be able to follow the main strategy of auralization easily and work out their own implementations of auralization in various fields of application in architectural acoustics, acoustic engineering, sound design and virtual reality. For readers interested in basic research, the technique of auralization may be useful to create sound stimuli for specific investigations in linguistic, medical, neurological and psychological research, and in the field of human-machine interaction.
