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Descrizione fisica	1 online resource (726 pages)
Collana	Springer Topics in Signal Processing Series
Disciplina	006.5
Soggetti	Computer sound processing Sound - Recording and reproducing - Digital techniques
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Foundations of Acoustics -- Discrete-Time Signals, Circuits and System Fundamentals -- Digital Filters for Audio Applications -- Multi-Rate Audio Processing and Wavelet Transform -- Special Transfer Functions for DASP -- Circuits and Algorithms for Physical Modeling -- Digital Audio Effects -- Sound Synthesis -- Physical Modeling.
Sommario/riassunto	The book provides an accessible overview of audio signal processing, and enables readers to design and write algorithms for the analysis, synthesis, and manipulation of musical and acoustic signals for any programming language. It provides an overview of highly interdisciplinary topics developed in a simple but rigorous way, and described in a unified and formal language which focuses on determining discrete-time audio signal models. Readers can find within a self-contained volume basic topics ranging over different disciplines: mechanical acoustics, physical systems and linear and nonlinear models, with lumped and distributed parameters; described and developed with the same level of mathematical formalism, easy to understand and oriented to the development of algorithms. Topics include the fundamental concepts of acoustic mechanics and vibration; the design of filters and equalizers for sound signals, the so-called audio effects, abstract methods of sound synthesis, and finally, methods of synthesis by physical modeling.

