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Titolo	Principles of Musical Acoustics / / by William M. Hartmann
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ISBN	1-4614-6786-1
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (352 p.)
Collana	Undergraduate Lecture Notes in Physics, , 2192-4791
Disciplina	781.1
Soggetti	Acoustics Neurobiology Acoustical engineering Engineering Acoustics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Sound, Music, and Science -- Vibrations 1 -- Vibrations 2 -- Instrumentation -- Sound Waves -- Wave Properties -- Standing Waves -- Standing Waves in Pipes -- Fourier Analysis and Synthesis -- Sound Intensity -- The Auditory System -- Loudness Perception -- Pitch -- Localization of Sound -- Sound Environments -- Audio Transducers -- Distortion and Noise -- Audio Systems -- Loudspeakers -- Digital Audio -- Broadcasting -- Speech -- Brass Musical Instruments -- Woodwind Instruments -- String Instruments -- Percussion Instruments -- Electronic Music.
Sommario/riassunto	Principles of Musical Acoustics focuses on the basic principles in the science and technology of music. Musical examples and specific musical instruments demonstrate the principles. The book begins with a study of vibrations and waves, in that order. These topics constitute the basic physical properties of sound, one of two pillars supporting the science of musical acoustics. The second pillar is the human element, the physiological and psychological aspects of acoustical science. The perceptual topics include loudness, pitch, tone color, and localization of sound. With these two pillars in place, it is possible to go in a variety of directions. The book treats in turn, the topics of room acoustics, audio both analog and digital, broadcasting, and speech. It ends with chapters on the traditional musical instruments, organized

by family. The mathematical level of this book assumes that the reader is familiar with elementary algebra. Trigonometric functions, logarithms and powers also appear in the book, but computational techniques are included as these concepts are introduced, and there is further technical help in appendices.