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Titolo	Acoustics of Musical Instruments // by Antoine Chaigne, Jean Kergomard
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2016
ISBN	1-4939-3679-4
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (855 p.)
Collana	Modern Acoustics and Signal Processing, , 2364-4915
Disciplina	781.91
Soggetti	Acoustics Acoustical engineering Music Vibration Dynamics Statistical physics Engineering Acoustics Vibration, Dynamical Systems, Control Applications of Nonlinear Dynamics and Chaos Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Part I - Basic Equations and Oscillators -- 1. Continuous models -- 2. Single-degree-of-freedom oscillator -- Part II- Waves and modes -- 3. Modes -- 4. Waves -- 5. Dissipation and damping -- 6. Coupled systems -- 7. Wind Instruments: variable cross section and toneholes -- Part III - Nonlinearities and self-oscillations -- 8. Nonlinearities -- 9. Reed instruments -- 10. Flute-like instruments -- 11. Bowed string instruments -- Part IV - Radiation and sound-structure interaction -- 12. Elementary sources and multipoles -- 13. Radiation of vibrating structures -- 14. Radiation of complex systems -- Glossary -- Index.
Sommario/riassunto	This book, the first English-language translation of Acoustique des instruments de musique, Second Edition, presents the necessary foundations for understanding the complex physical phenomena involved in musical instruments. What is the function of the labium in a flute? Which features of an instrument allow us to make a clear audible

distinction between a clarinet and a trumpet? With the help of numerous examples, these questions are addressed in detail. The authors focus in particular on the significant results obtained in the field during the last fifteen years. Their goal is to show that elementary physical models can be used with benefit for various applications in sound synthesis, instrument making, and sound recording. The book is primarily addressed to graduate students and researchers; however it could also be of interest for engineers, musicians, craftsmen, and music lovers who wish to learn about the basics of musical acoustics. Casts new light on the physics of musical instruments Includes up-to-date research published in the field of musical acoustics in the last fifteen years Outlines new methods developed in other fields such as complex modes and nonlinear normal modes Represents the only book on the physics of musical instruments to include practice exercises, catering to a broad audience of graduate students and researchers Brings the essential *Acoustique des instruments de musique* to an English audience for the first time.
