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Titolo	Music Through Fourier Space : Discrete Fourier Transform in Music Theory // by Emmanuel Amiot
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ISBN	3-319-45581-8
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (XV, 206 p. 129 illus., 45 illus. in color.)
Collana	Computational Music Science, , 1868-0305
Disciplina	781.0151
Soggetti	Application software Music Mathematics Computer science—Mathematics User interfaces (Computer systems) Signal processing Image processing Speech processing systems Computer Appl. in Arts and Humanities Mathematics in Music Mathematics of Computing User Interfaces and Human Computer Interaction Signal, Image and Speech Processing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Discrete Fourier Transform of Distributions -- Homometry and the Phase Retrieval Problem -- Nil Fourier Coefficients and Tilings -- Saliency -- Continuous Spaces, Continuous Fourier Transform -- Phases of Fourier Coefficients.
Sommario/riassunto	This book explains the state of the art in the use of the discrete Fourier transform (DFT) of musical structures such as rhythms or scales. In particular the author explains the DFT of pitch-class distributions, homometry and the phase retrieval problem, nil Fourier coefficients and tilings, saliency, extrapolation to the continuous Fourier transform and

continuous spaces, and the meaning of the phases of Fourier coefficients. This is the first textbook dedicated to this subject, and with supporting examples and exercises this is suitable for researchers and advanced undergraduate and graduate students of music, computer science and engineering. The author has made online supplementary material available, and the book is also suitable for practitioners who want to learn about techniques for understanding musical notions and who want to gain musical insights into mathematical problems.
