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Descrizione fisica	1 online resource (XXIV, 900 p. 352 illus. in color.)
Collana	Signals and Communication Technology, , 1860-4862
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Discrete-time Signals and Systems -- Transforms of Discrete-time Signals -- Sampling of Continuous-time Signals -- Spectral Analysis of Deterministic Discrete-Time Signals -- Digital Filter Properties and Filtering Implementation -- FIR Filters Design -- IIR Filters Design -- Statistical Approach to Signal Analysis -- Non-Parametric Spectral Methods -- Parametric Spectral Methods.- Singular Spectrum Analysis (SSA).- Non-Stationary Spectral Analysis.- Discrete Wavelet Transform (DWT) -- De-noising and Compression byWavelets -- Exercises with Matlab.
Sommario/riassunto	This book covers the basics of processing and spectral analysis of monovariate discrete-time signals. The approach is practical, the aim being to acquaint the reader with the indications for and drawbacks of the various methods and to highlight possible misuses. The book is rich in original ideas, visualized in new and illuminating ways, and is

structured so that parts can be skipped without loss of continuity. Many examples are included, based on synthetic data and real measurements from the fields of physics, biology, medicine, macroeconomics etc., and a complete set of MATLAB exercises requiring no previous experience of programming is provided. Prior advanced mathematical skills are not needed in order to understand the contents: a good command of basic mathematical analysis is sufficient. Where more advanced mathematical tools are necessary, they are included in an Appendix and presented in an easy-to-follow way. With this book, digital signal processing leaves the domain of engineering to address the needs of scientists and scholars in traditionally less quantitative disciplines, now facing increasing amounts of data.