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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Brief Historical Introduction -- Hilbert Spaces and Orthonormal Systems -- Fourier Transformations and Their Applications -- The Gabor Transform and Time-Frequency Signal Analysis -- The Wigner-Ville Distribution and Time-Frequency Signal Analysis -- The Wavelet Transforms and Their Basic Properties -- Multiresolution Analysis and Construction of Wavelets -- Extensions of Multiresolution Analysis -- Newland's Harmonic Wavelets -- Wavelet Transform Analysis of Turbulence.
Sommario/riassunto	This textbook is an introduction to wavelet transforms and accessible to a larger audience with diverse backgrounds and interests in mathematics, science, and engineering. Emphasis is placed on the logical development of fundamental ideas and systematic treatment of wavelet analysis and its applications to a wide variety of problems as encountered in various interdisciplinary areas. Numerous standard and challenging topics, applications, and exercises are included in this edition, which will stimulate research interest among senior undergraduate and graduate students. The book contains a large number of examples, which are either directly associated with

applications or formulated in terms of the mathematical, physical, and engineering context in which wavelet theory arises. Topics and Features of the Second Edition: · Expanded and revised the historical introduction by including many new topics such as the fractional Fourier transform, and the construction of wavelet bases in various spaces other than and several new extensions of the original multiresolution analysis. · Extensions of the classical theory of multiresolution analysis consisting of -multiresolution analysis on the positive half-line and non-uniform multiresolution analysis. · Includes carefully chosen end-of-chapter exercises directly associated with applications or formulated in terms of the mathematical, physical, and engineering context and provides answers to selected exercises for additional help · Completely updated bibliography and enlarged index Mathematicians, physicists, computer engineers, and electrical and mechanical engineers will find Wavelet Transforms and Their Applications an exceptionally complete and accessible text and reference. It is also suitable as a self-study or reference guide for practitioners and professionals.

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