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Nota di contenuto   Scaling, Fractals and Wavelets; Table of Contents; Preface; Chapter 1. Fractal and Multifractal Analysis in Signal Processing; 1.1. Introduction; 1.2. Dimensions of sets; 1.2.1. Minkowski-Bouligand dimension; 1.2.2. Packing dimension; 1.2.3. Covering dimension; 1.2.4. Methods for calculating dimensions; 1.3. Holder exponents; 1.3.1. Holder exponents related to a measure; 1.3.2. Theorems on set dimensions; 1.3.3. Holder exponent related to a function; 1.3.4. Signal dimension theorem; 1.3.5. 2-microlocal analysis; 1.3.6. An example: analysis of stock market price; 1.4. Multifractal analysis
1.4.1. What is the purpose of multifractal analysis?1.4.2. First ingredient: local regularity measures; 1.4.3. Second ingredient: the size of point sets of the same regularity; 1.4.4. Practical calculation of spectra; 1.4.5. Refinements: analysis of the sequence of capacities, mutual analysis and multisingularity; 1.4.6. The multifractal spectra of

| Sommario/riassunto | Scaling is a mathematical transformation that enlarges or diminishes objects. The technique is used in a variety of areas, including finance and image processing. This book is organized around the notions of scaling phenomena and scale invariance. The various stochastic models commonly used to describe scaling ? self-similarity, long-range dependence and multi-fractals ? are introduced. These models are compared and related to one another. Next, fractional integration, a mathematical tool closely related to the notion of scale invariance, is discussed, and stochastic processes with prescribed |