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Nota di contenuto	Cover Title Page Copyright Contents Preface to the first edition Preface to the second edition Preface to the third edition Course suggestions Introduction Part I Foundations Chapter 1 Mathematical background 1.1 Basic set theory 1.2 Functions and limits 1.3 Measures and mass distributions 1.4 Notes on probability theory 1.5 Notes and references Exercises Chapter 2 Box-counting dimension 2.1 Box-counting dimensions 2.2 Properties and problems of box-counting dimension 2.3 Modified box-counting dimensions 2.4 Some other definitions of dimension 2.5 Notes and references Exercises Chapter 3 Hausdorff and packing measures and dimensions 3.1 Hausdorff measure 3.2 Hausdorff dimension 3.3 Calculation of Hausdorff dimension 3.5 Packing measure and dimensions 3.6 Finer definitions of dimension 3.7 Dimension prints 3.8 Porosity 3.9 Notes and references Exercises Chapter 4 Techniques for calculating dimensions 4.1 Basic methods 4.2 Subsets of finite measure 4.3 Potential theoretic methods 4.4 Fourier transform methods 4.5 Notes and references Exercises Chapter 5 Local structure of fractals 5.1 Densities 5.2 Structure of 1-sets 5.3 Tangents to s-sets 5.4 Notes and references Exercises

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provides an invaluable foundation and reference for researchers who encounter fractals not only in mathematics but also in other areas across physics, engineering and the applied sciences. Provides a comprehensive and accessible introduction to the mathematical theory and applications of fractals Carefully explains each topic using illustrative examples and diagrams Includes the necessary mathematical background material, along with notes and references to enable the reader to pursue individual topics Features a wide range of exercises, enabling readers to consolidate their understanding Supported by a website with solutions to exercises and additional material http://www.wileyeurope.com/fractal Leads onto the more advanced sequel Techniques in Fractal Geometry (also by Kenneth Falconer and available from Wiley).