1. Record Nr. UNINA9910438156403321

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Titolo	Fractal geometry, complex dimensions and zeta functions : geometry and spectra of fractal strings / / Michel L. Lapidus, Machiel van Frankenhuijsen
Pubbl/distr/stampa	New York, : Springer, 2013
ISBN	1-283-90955-3 1-4614-2176-4
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (582 p.)
Collana	Springer monographs in mathematics, , 1439-7382
Altri autori (Persone)	FrankenhuijsenMachiel van
Disciplina	514.742
Soggetti	Fractals Functions, Zeta Geometry, Riemannian Number theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"With 73 illustrations."
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Preface -- Overview -- Introduction -- 1. Complex Dimensions of Ordinary Fractal Strings -- 2. Complex Dimensions of Self-Similar Fractal Strings -- 3. Complex Dimensions of Nonlattice Self-Similar Strings -- 4. Generalized Fractal Strings Viewed as Measures -- 5. Explicit Formulas for Generalized Fractal Strings -- 6. The Geometry and the Spectrum of Fractal Strings -- 7. Periodic Orbits of Self-Similar Flows -- 8. Fractal Tube Formulas -- 9. Riemann Hypothesis and Inverse Spectral Problems -- 10. Generalized Cantor Strings and their Oscillations -- 11. Critical Zero of Zeta Functions -- 12 Fractality and Complex Dimensions -- 13. Recent Results and Perspectives -- Appendix A. Zeta Functions in Number Theory -- Appendix B. Zeta Functions of Laplacians and Spectral Asymptotics -- Appendix C. An Application of Nevanlinna Theory -- Bibliography -- Author Index -- Subject Index -- Index of Symbols -- Conventions -- Acknowledgements.
Sommario/riassunto	Number theory, spectral geometry, and fractal geometry are interlinked in this in-depth study of the vibrations of fractal strings; that is, one-dimensional drums with fractal boundary. This second edition of Fractal

Geometry, Complex Dimensions and Zeta Functions will appeal to students and researchers in number theory, fractal geometry, dynamical systems, spectral geometry, complex analysis, distribution theory, and mathematical physics. The significant studies and problems illuminated in this work may be used in a classroom setting at the graduate level. Key Features include: The Riemann hypothesis is given a natural geometric reformulation in the context of vibrating fractal strings · Complex dimensions of a fractal string are studied in detail, and used to understand the oscillations intrinsic to the corresponding fractal geometries and frequency spectra · Explicit formulas are extended to apply to the geometric, spectral, and dynamical zeta functions associated with a fractal · Examples of such explicit formulas include a Prime Orbit Theorem with error term for self-similar flows, and a geometric tube formula · The method of Diophantine approximation is used to study self-similar strings and flows · Analytical and geometric methods are used to obtain new results about the vertical distribution of zeros of number-theoretic and other zeta functions The unique viewpoint of this book culminates in the definition of fractality as the presence of nonreal complex dimensions. The final chapter (13) is new to the second edition and discusses several new topics, results obtained since the publication of the first edition, and suggestions for future developments in the field.