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Nota di contenuto	Preface -- Statistical Mechanics and Quantum Fields on Fractals -- 1. Introduction -- 2. Discrete scaling symmetry - Self similarity - Definitions -- 3. Heat kernel and spectral functions - Generalities -- 4. Laplacian on fractals - Heat kernel and spectral zeta function -- 5. Thermodynamics on photons : The fractal blackbody [34] -- 6. Conclusion and some open questions -- Acknowledgments -- References -- Spectral Algebra of the Chernov and Bogoslovsky Finsler Metric Tensors -- Preliminaries -- 1. Spectral theory prerequisites -- 2. Spectral results for low dimensions -- 3. Conclusions -- References -- Local Multifractal Analysis -- 1. Introduction -- 2. Properties of the local Hausdorff dimension and the local multifractal spectrum -- 3. A local multifractal formalism for a dyadic family -- 4. Measures with varying local spectrum -- 5. Local spectrum of stochastic processes -- 6. Other regularity exponents characterized by dyadic families -- 7. A functional analysis point of view -- Acknowledgement -- References

-- Extreme Risk and Fractal Regularity in Finance -- 1. Introduction -- 2. Fractal Regularities in Financial Markets -- 3. The Markov-Switching Multifractal (MSM) -- 4. Pricing Multifractal Risk -- 5. Conclusion -- References -- An Algorithm for Dynamical Games with Fractal-Like Trajectories -- 1. Introduction -- 2. Preliminaries and notations -- 3. The method for A^1 games -- 4. Two players parametric games -- 5. The algorithm -- 6. Examples -- 7. Final Remarks -- 8. Resume -- 9. Conclusions -- References -- The Landscape of Anderson Localization in a Disordered Medium -- 1. Introduction -- 2. Preliminaries -- Non-Regularly Varying and Non-Periodic Oscillation of the On-Diagonal Heat Kernels on Self-Similar Fractals -- 1. Introduction -- 2. Framework and main results -- 3. Proof of Theorems 2.17 and 2.18 -- 4. Post-critically finite self-similar fractals -- 4.1. Harmonic structures and resulting self-similar Dirichlet spaces -- 4.2. Cases with good symmetry and affine nested fractals -- 4.3. Cases possibly without good symmetry -- 5. SierpiA?ski carpets -- References -- Lattice Effects in the Scaling Limit of the Two-Dimensional Self-Avoiding Walk -- 1. Introduction -- 2. Lattice effects.