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Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Introduction -- Supersymmetry -- Noncommutative geometry -- Supersymmetric almost-commutative geometries -- Noncommutative geometry and R-parity -- Supersymmetric spectral triples -- Conditions for a supersymmetric spectral action -- Summary and conclusions -- Appendix 1. The action from a building block of the third type -- Appendix 2. Supersymmetric spectral actions: Proofs -- Appendix 3. Auxiliary lemmas and identities -- Supersymmetry breaking -- Soft supersymmetry breaking -- Soft supersymmetry breaking terms from the spectral action -- Summary and conclusions -- The noncommutative supersymmetric Standard Model -- Obstructions for a supersymmetric theory -- The building blocks of the MSSM -- Identification of particles and sparticles.
Sommario/riassunto	In this work the question whether noncommutative geometry allows for supersymmetric theories is addressed. Noncommutative geometry has seen remarkable applications in high energy physics, viz. the geometrical interpretation of the Standard Model, however such a question has not been answered in a conclusive way so far. The book

starts with a systematic analysis of the possibilities for so-called almost-commutative geometries on a 4-dimensional, flat background to exhibit not only a particle content that is eligible for supersymmetry, but also have a supersymmetric action. An approach is proposed in which the basic `building blocks' of potentially supersymmetric theories and the demands for their action to be supersymmetric are identified. It is then described how a novel kind of soft supersymmetry breaking Lagrangian arises naturally from the spectral action. Finally, the above formalism is applied to explore the existence of a noncommutative version of the minimal supersymmetric Standard Model. This book is intended for mathematical/theoretical physicists with an interest in the applications of noncommutative geometry to supersymmetric field theories.