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Soggetti	Mathematical physics System theory Dynamics Nonlinear theories Thermodynamics Astrophysics Theoretical, Mathematical and Computational Physics Complex Systems Applied Dynamical Systems Mathematical Methods in Physics
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Nota di contenuto	Chapter 1: Historical Background and Physical Motivations -- Chapter 2: Learning with Boltzmann–Gibbs Statistical Mechanics -- Chapter 3: Generalizing What We Learnt: Nonextensive Statistical Mechanics -- Chapter 4: Stochastic Dynamical Foundations of~Nonextensive Statistical Mechanics -- Chapter 5: Deterministic Dynamical Foundations of Nonextensive Statistical Mechanics -- Chapter 6: Generalizing Nonextensive Statistical Mechanics -- Chapter 7: Thermodynamical and Nonthermodynamical Applications -- Chapter 8: Final Comments and Perspectives -- Appendix A -- Appendix B -- Bibliography -- Index.
Sommario/riassunto	Metaphors, generalizations and unifications are natural and desirable

ingredients of the evolution of scientific theories and concepts. Physics in particular has walked along these paths since its very beginning. This book focuses on nonextensive statistical mechanics, a current generalization of Boltzmann-Gibbs (BG) statistical mechanics. Conceived nearly 150 years ago by Maxwell, Boltzmann and Gibbs, the BG theory, one of the greatest monuments of contemporary physics, exhibits many impressive successes in physics, chemistry, mathematics, and computational sciences. Presently, several thousands of publications by scientists around the world have been dedicated to its nonextensive generalization. A variety of applications have emerged in complex systems and its mathematical grounding is by now well advanced. Since the first edition release thirteen years ago, there has been a vast amount of new results in the field, all of which have been incorporated in this comprehensive second edition. Heavily revised and updated with new sections and figures, the second edition remains the go-to text on the subject. A pedagogical introduction to the BG theory concepts and their generalizations – nonlinear dynamics, extensivity of the nonadditive entropy, global correlations, generalization of the standard CLT's, complex networks, among others – is presented in this book, as well as a selection of paradigmatic applications in various sciences together with diversified experimental verifications of some of its predictions. Introduction to Nonextensive Statistical Mechanics is suitable for students and researchers with an interest in complex systems and statistical physics.

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