1.	Record Nr.	UNINA9910810283803321
	Titolo	Nonextensive entropy : interdisciplinary applications / / editors, Murray Gell-Mann, Constantino Tsallis
	Pubbl/distr/stampa	New York, New York : , : Oxford University Press, , 2004 ©2004
	ISBN	0-19-756202-7 0-19-803621-3 1-280-70406-3 0-19-534785-4
	Descrizione fisica	1 online resource (439 p.)
	Collana	Santa Fe Institute Studies on the Sciences of Complexity
	Disciplina	530.13
	Soggetti	Statistical mechanics
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Previously issued in print: 2004.
	Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
	Nota di contenuto	Contents; Preface; Nonextensive Statistical Mechanics: Construction and Physical Interpretation; Generalized Nonadditive Information Theory and Quantum Entanglement; Unifying Laws in Multidisciplinary Power-Law Phenomena: FixedPoint Universality and Nonextensive Entropy; Nonextensive Entropies and Sensitivity to Initial Conditions of Complex Systems; Numerical Analysis of Conservative Maps: A Possible Foundation of Nonextensive Phenomena; Nonextensive Effects in Hamiltonian Systems; A Hamiltonian Approach for Tsallis Thermostatistics; Nonequilibrium Systems Temperature Fluctuations and Mixtures of Equilibrium States in the Canonical EnsembleOn the Role of Non-Gaussian Noises on Noise-Induced Phenomena; A Dripping Faucet as a Nonextensive System; Power-Law Persistence in the Atmosphere: An Ideal Test Bed for Climate Models; The Living State of Matter: Between Noise and Homeorrhetic Constraints; Plant Spread Dynamics and Spatial Patterns in Forest Ecology; Generalized Information Measures and the Analysis of Brain Electrical Signals; Nonextensive Diffusion Entropy Analysis and Teen Birth Phenomena; The Pricing of Stock Options

Sommario/riassunto

A great variety of complex phenomena in many scientific fields exhibit power-law behaviour, reflecting a hierarchical or fractal structure. Many of these phenomena seem to be susceptible to description using approaches drawn from thermodynamics or statistical mechanics, particularly approaches involving the maximization of entropy. During recent years a good deal of study has been devoted to a nonextensive generalizations of entropy and of Boltzmann-Gibbs statistical mechanics and standard laws in a natural way. The book addresses the interdisciplinary applications of these ideas, and also on various phenomena that could possibly be quantitatively describable in terms of these ideas.