1. Record Nr. UNISA996466696003316

Titolo	Nonextensive Statistical Mechanics and Its Applications [[electronic resource] /] / edited by Sumiyoshi Abe, Yuko Okamoto
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2001
ISBN	3-540-40919-X
Edizione	[1st ed. 2001.]
Descrizione fisica	1 online resource (IX, 278 p. 9 illus.)
Collana	Lecture Notes in Physics, , 0075-8450 ; ; 560
Disciplina	530.13
Soggetti	Statistical physics Dynamical systems Thermodynamics Complex Systems Statistical Physics and Dynamical Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Lectures on Nonextensive Statistical Mechanics -- I. Nonextensive Statistical Mechanics and Thermodynamics: Historical Background and Present Status -- II. Quantum Density Matrix Description of Nonextensive Systems -- III. Tsallis Theory, the Maximum Entropy Principle, and Evolution Equations -- IV. ComputationalMetho ds for the Simulation of Classical and Quantum Many Body Systems Arising from Nonextensive Thermostatistics -- Further Topics -- V. Correlation Induced by Nonextensivity and the Zeroth Law of Thermodynamics -- VI. Dynamic and Thermodynamic Stability of Nonextensive Systems -- VII. Generalized Simulated Annealing Algorithms Using Tsallis Statistics: Application to ±J Spin Glass Model -- VIII. Protein Folding Simulations by a Generalized-Ensemble Algorithm Based on Tsallis Statistics.
Sommario/riassunto	Nonextensive statistical mechanics is now a rapidly growing field and a new stream in the research of the foundations of statistical mechanics. This generalization of the well-known Boltzmann--Gibbs theory enables the study of systems with long-range interactions, long-term memories or multi-fractal structures. This book consists of a set of self-contained lectures and includes additional contributions where

some of the latest developments -- ranging from astro- to biophysics -- are covered. Addressing primarily graduate students and lecturers, this book will also be a useful reference for all researchers working in the field.