

1. Record Nr.	UNISALENTO991000160479707536
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Titolo	Chaos and chance : an introduction to stochastic aspects of dynamics / Arno Berger
Pubbl/distr/stampa	Berlin ; New York : Walter de Gruyter, 2001
ISBN	3110169916
Descrizione fisica	x, 245 p. : ill. ; 24 cm
Collana	De Gruyter textbook
Classificazione	AMS 37-01 AMS 37A50 AMS 37A30 AMS 70K55 LC QA614.8.B48 53.1.65
Disciplina	515.352
Soggetti	Differentiable dynamical systems Chaotic behavior in systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references (p. [237]-240) and index
Nota di contenuto	Introduction. Long-time behaviour of mechanical systems ; Iteration of maps ; Elementary stochastic processes ; Basic aspects of discrete dynamical systems. Hyperbolicity and bifurcations ; How may simple systems become complicated? Facing deterministic chaos ; Symbolic dynamical systems ; The emergence of chaos ; Newton's method for polynomials: a case study ; Circle maps, rotation numbers, and minimality ; Gimpes of billiards ; Horseshoes, attractors, and natural extensions ; Toral maps and shadowing ; Ergodic theory I. Foundations. The statistical point of view ; Invariant and ergodic measures ; Ergodic theorems ; Aspects of mixing ; Mixing properties ; The concept of entropy ; Ergodic theory II: Applications. The Frobenius-Perron operator ; Asymptotic behaviour of densities ; Piecewise expanding Markov maps ; A short look at Markov chains ; Class structure, absorption probabilities, and hitting times ; Recurrence and transience: dynamical classification of states ; The long-time behaviour of Markov chains ; The dynamical evolution of measures : Basic examples and concepts ; Asymptotic stability ; Back to geometry: fractal sets and

measures ; Three final examples ; Searching for non-normal numbers ;
The fractal nature of Brownian paths ; Patterns of congruence in the
Pascal triangle
